

Science and Mathematics Education Centre

**The Student Report Card and the Teachers' Experience of
Reporting; More than an Addendum to the Semester**

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**This thesis is presented for the degree of
Doctor of Philosophy
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Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of my knowledge and belief, this thesis contains no material previously published by any person except where due acknowledgement has been made.

Signature: Susan Long

Date: 25/1/2013

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Abstract

Report writing is a largely unexamined aspect of professional practice. It would appear to be a simple task of collating marks and writing a summary statement; however, there is evidence that the teacher deeply engages with the task over an extended period of time. It is less an administrative task than an emotionally charged product of multiple judgements, that in turn exposes the teacher to external judgement.

This case study presents an exposé of the experience of report writing for teachers in the Australian state of Victoria between 2008 and 2012, a time during which a new curriculum and the *Student Report Card* were implemented. The new reporting format required teachers to report on performance against curriculum linked Progression Points, work habits and to describe areas of achievement and strategies for improvement.

In order to examine the phenomenon of reporting, a multiple stage multi-method research design was devised. It includes a widely distributed questionnaire, a Process Tracing task and then a teacher composed narrative. These three stages fit within a parfocal approach to interpreting the experience of reporting. At each stage of the data collection, the field of view was narrowed but the focus on reporting experiences were maintained. Data collected identified aspects of teacher knowledge, thinking, internal and external contextual influences. A composite description of the experience of reporting was framed using Feldman's Teaching as a way of being model (1997).

The study showed that the teacher constructs the multidimensional knowledge base that understands student learning through interacting in the learning setting over an extended period. The classroom exists within the wider sociocultural context which shapes the judgements made. Sharing the judgements made about learning increases the vulnerability of the person acting in the role of teacher. This study makes a valuable contribution to understanding the knowledge base for teaching, acknowledging its complexity and celebrating the role of relationship in teaching. It may assist experienced teacher to reflect on their reporting strategies to improve the validity of reports. It will make a positive contribution to pre-service teacher training, alerting beginning teachers to the need to prepare for reports over the semester.

Chapter 1. Introduction

The everyday business of teaching and the body of research about teaching is squarely focused on the processes of teaching, learning and assessment of learning. Reporting or report writing comes as both the pinnacle of each semester and as an often unpleasant addendum to the work of learning for all of the stake holders in education: students, parents, teachers and members of the school community. For teachers, it is unpleasant because of the time it takes and the peculiar difficulties in finding the right words for each individual student, their circumstances and achievement. For schools, reporting is a time-consuming, expensive, administrative burden. For students, the reports may be a source of disappointment or triumph and it calls them to account to their parents for their performance and effort, whether good or bad. It appears that report cards mark the conclusion of the semester's learning but it may be that it is embedded in the entire learning journey for teachers and students and it represents more than marks or grades.

A teacher may provide excellent, timely, and individual feedback to students about their work throughout the semester, driving the spiral of improved learning through assessment, but assessment alone does not have accountability beyond the classroom. It is mandated by education authorities that teachers must distil information about learning into grades of some kind and a handful of sentences or phrases that must be communicated to parents in the form of a report card. The Victorian State Government Department of Education and Early Childhood Development (DEECD) specified the categories of information and the kinds of wording that must be included in reports from 2007 (DEECD, 2006a). The decisions about what is specifically said rests with individual teachers, working within the administrative constraints of the school.

It would not be uncommon for a teacher in Victoria with a full load of Science classes at years 7 to 10, to be writing close to 150 reports. Whether a beginning teacher or a highly experienced teacher, the individual must decide, within the structure provided by the school, what information is included and emphasised on the basis of the available evidence and their knowledge of the student's learning. The full complement of reports written by a teacher, each semester, is the product of possibly thousands of decisions or judgements. Report writing is part of a knowledge base that underpins the practice of teaching (Calderhead, 1991). Some aspects of professional knowledge are

explicitly taught in teacher pre-service training and then in professional learning, but much is learnt through teaching practice.

The purpose of this thesis is to develop an understanding of the teachers' experience of report writing in Victoria, Australia during the period 2008 to 2012. In this time period a new curriculum and a new reporting system were implemented. In order to provide a comprehensive picture of this experience, Feldman's (1997, 2002) *Teaching as a way of being* model will provide a framework to describe the knowledge, reasoning and influences that are part of reporting.

Background – Schooling in Australia

In Australia, education is provided in government, Catholic systemic and independent schools including schools affiliated with other religious traditions. Primary school years extend from a preparatory year to either Year 6 or Year 7. Students complete their education in a secondary school with exit qualifications differing state-by-state.

Australian schools are high performing, have high retention rates and overall literacies are high, although many rural and indigenous communities have poorer performances against national benchmarks. There are three levels of management of schools in Australia. The Commonwealth government manages education through agreements with the six states and two territories. It specifically manages national policies on teaching standards, accreditation of schools and tertiary institutions and performance indicators for schools are measured by national testing which is published online. The Commonwealth government has recently facilitated the development of a national curriculum model. State and territory governments manage planning, curriculum, structures and resourcing and personnel management in school. Vocational education and tertiary admissions are also managed by state government funded bodies.

Independent and Catholic schools manage their own personnel and all schools are responsible for the organisation of instruction and reporting. Catholic systemic schools are overseen by regional Catholic Education Offices. Funding for schools varies depending on whether the school is public or private. According to Figueroa, Zapata and Fraccola (2013), government schools are largely resourced by state and territory governments (91%) with the remaining funds coming from the federal government.

Around 66% of students attend government schools and are entitled to free education. Non-government schools receive public funding from the federal government (72%) and receive the remaining funds from state government grants and school fees which may range from up to \$2000 to in excess of \$20,000 per year.

Background to the research project

For a classroom teacher, every term or semester moves towards an episode of accountability through the production of a written report card. The accountability applies to both the student and the teacher. The report card could be described as a summary of learning or achievement or assessment, and it is provided to parents or guardians, who are the most important stakeholders in education outside the active participants in the classroom. School reports often go beyond the recipients to become a public document for a variety of reasons. They may be presented in applications for scholarships, employment or work experience. Schools take care to audit reports to ensure that they are written appropriately, the content is accurate, the student's achievements are described respectfully and that the school and the teacher are portrayed in a highly professional way. In addition to these matters of form, a teacher cannot report a student as having poor progress without being able to account to individuals within the school, other entities and to parents, as to how they addressed the student's learning issues, and how they passed on concerns to other stakeholders.

Historically, secondary school report cards included a grade and a comment for each subject from the relevant subject teacher. The comments tended to be brief and have included statements such as "Mary is working well and is to be commended for her efforts" or "Peter needs to try harder in class." Over the past decade, it was recognised that personal comments, including commendations and predictions about achievement were not appropriate, and reports tended to recount student achievement in learning tasks, although, in my experience, some schools did not change their policies and some teachers persist with the more traditional comments regardless of school policies. Some schools omit achievement statements, reporting achievement with grades or percentages only.

In 1999, the Australian Government Department of Education, Employment and Workplace relations announced "*National Goals for Schooling in the 21st Century*" (Association of Independent Schools of Victoria (AISV), 2006), which included the key

initiative to improve information given to parents through the provision of reports with clear indicators of achievement. In 2005, the Government of Australia required non-government schools that receive funding under the *Schools Assistance (Learning Together – Achievement through Choice and Opportunity) Act 2004* (AISV, 2006) to ensure that reporting to parents met specified guidelines as part of the funding agreement with the then federal Department of Education, Sport and Training (AISV, 2006). Those guidelines specified that: report cards use plain language and are able to be readily understood by parents; reports are issued in a timely way at least twice each year; reports give an accurate and objective assessment of the child's progress and achievement, including core subjects graded on an A – E continuum or an equivalent scale and indicate the performance of the child relative to his or her peer group at the school; are confidential and deal with the child's academic and non-academic learning. In addition parents must be offered an opportunity to discuss their child's progress with the teacher and the school must give parents constructive advice about supporting the child's further progress at school (AISV, 2006).

The Government of the State of Victoria also mandated that all government schools offer interviews to parents to discuss their child's progress and issue report cards to parents twice a year (DEECD, 2006b). In 2006, a new format for reporting was introduced; described as “common-sense” report cards, the reports are written in plain English and describe the students' performance against expected state-wide standards (DEECD, 2006c).

About half of government schools and all systemic Catholic systemic schools trialled the *Student Report Card* for Mathematics and English, from June 2006. The report cards were rolled out in other subject areas and into other schools over subsequent semesters, as a new curriculum framework called the *Victorian Essential Learning Standards* (VELS) was implemented. Independent schools were not compelled to use the *Student Report Card*.

The format of the *Student Report Card* was further refined in 2007 to include a graphical representation showing student achievement against standards during the reporting period and in the preceding twelve months; a five-point A-E scale indicating achievement against the expected standard; a graphical representation to describe work habits; written information about what the student knows and can do, where they may

need additional support or to be extended. This information is provided for each subject studied. The report document folio would also include: a statement of how the school will provide assistance; student's description of their personal learning goals; space for parents to comment; and details of absences (DEECD, 2009). An example of a mathematics subject report page forming part of a sample secondary school report, presented by the Victorian Government Department of Education and Early Childhood Development is included in Figure 1.1.

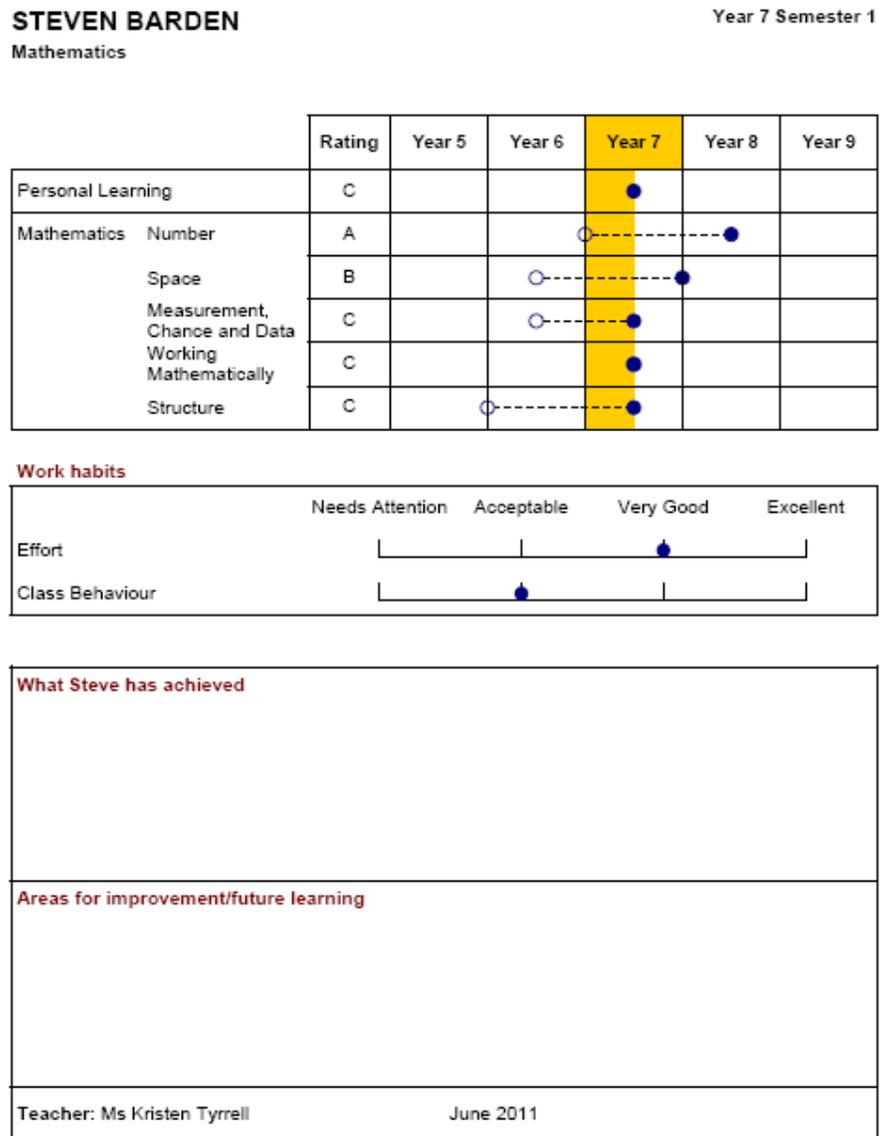


Figure 1-1 Subject report page for Mathematics from a sample secondary report (DEECD, 2009)

The Victorian Essential Learning Standards (VELS) has been in place in the State of Victoria since 2006, but it will be superseded from 2013 by AusVELS, the new Australian National Curriculum version of the Victorian Essential Learning Standards. The VELS were described as the complement of knowledge, skills and behaviours that students require to “prepare them for success in a world which is complex, rapidly changing, rich in information and communications technology, demanding high-order knowledge and understanding and increasingly global in its outlook and influences” (Victorian Curriculum and Assessment Authority (VCAA), 2007). The standards are classified into three *strands*, each containing several *domains*. The strand called Physical, Personal and Social Learning includes *Health and Physical Education, Civics and Citizenship, Interpersonal Development* and *Personal Learning*. Discipline based learning includes *the Arts, Humanities, English, Mathematics, Science* and *Languages Other than English*. The strand called Interdisciplinary Learning includes *Information and Communication Technology, Design, Creativity and Technology, Communication* and *Thinking Processes*. The VELS were intended to be implemented into the school curriculum holistically, with the standards specified in the Interdisciplinary Learning domains and most of the Physical, Personal and Social Learning domains to be taught and assessed across all subject areas. The curriculum for the discipline of Science was implemented and assessed from 2008. The content of the subject area of Science came from domains in the Science learning strands, but assessment in Science might also have addressed standards in other domains such as Thinking Processes or ICT, depending on the policy implemented in the school.

Across Victoria, there was diversity in the degree of implementation and the method of implementation of VELS between schools. Teachers needed to assess the Science, and possibly other standards, in efficient ways, while being mindful of good practice in formative and authentic assessment. Together with observations of work habits, it is classroom assessment that provides the evidence for report writing.

The Nature and Scope of the Study

The goal of this case study was to explore the phenomenon of reporting in Victoria during the period 2008 – 2012, marking the implementation of VELS and the Victorian Student Report Card. This study specifically aimed to describe the range of practices and attitudes that a wide sample of Science teachers held, regarding managing

information about student achievement with the purpose of preparing that information for reporting to parents, and to articulate teachers' experience of writing reports about student learning for parents. From this pair of objectives, a research design was constructed. The design and research questions were shaped iteratively by ongoing theoretical research and the findings of each phase of the study (Mestre, 2000).

As this study sought context based understanding of the thoughts, beliefs and actions of report writing, it fits within the research paradigm of Interpretivism (Taylor, Taylor & Luitel, 2012). An interpretivistic research paradigm is associated with the use of an emerging methodology and research questions, supporting the research design strategy followed. The complex research design was inevitable in the absence of prior research on the phenomenon, and as emerging education research methodologies pointed out the flaws in established methods for investigating teacher thinking.

The research design ultimately included three phases generating various kinds of artefacts and data about teacher behaviours, attitudes and knowledge that were able to be analysed using qualitative and quantitative techniques. The study began with a widely distributed questionnaire surveying Victorian teachers in 2008, about their attitudes and behaviours. The second phase was a Process Tracing task completed by four respondents to the questionnaire. The Process Tracing task produced evidence of: (a) final thinking from the written reports, (b) interim thinking from the transcript of verbalised thinking and (c) reflective thinking about report writing in the transcripts of semi-structured interviews (Lesh, Hoover, Hole, Kelly & Post, 2000). At this point in the study it became apparent that the research methods used could not adequately probe the association between sociocultural context and the process of report writing. This association was accessed through a narrative which summarised the reflections of a practising full-time secondary school teacher.

This multiple phase multi-method research design has a *parfocal character*. The term parfocal describes the focussing characteristics of precision optics in a compound microscope. The microscope technician will prepare a microscope slide and focus on a wide field-of-view using the lowest power objective lens. From that point of focus the technician can increase magnification by changing the power of the objective lens; this narrows the field-of-view yet maintains the focus, leading to a clearer view of the specimen. In this study, the questionnaire is associated with the widest field-of-view but

the smallest evidence of context. The narrative has the narrowest field-of-view which can reveal the elements of sociocultural context in a particular school setting.

To ensure the most comprehensive description of the phenomenon of reporting the findings of each phase were collated and then framed within the four perspectives of teaching that make up Feldman's Teaching as a way of being model (1997). It is hoped that this description of report writing, despite being drawn from a case study, will offer theoretical and practical insights in other education settings, regardless of the manner in which reporting or grading is presented for parents.

Research Questions

The findings in each of the phases of the study provide comprehensive answers to four overarching questions: What is the professional knowledge base required to perform the tasks in semester report writing? What decision making and reasoning occurs during the report comment writing process? What contextual factors influence the process of reporting? How does a teacher in Victoria in 2008 - 2012 experience the process of composing reports using the Student Report Card format? These questions fit closely with Feldman's Teaching as a way of being model (1997).

Ten specific research questions emerged from the phases of the study and provide evidence of the reporting experience for teachers. They are grouped with the overarching questions, as follows:

1. What is the professional knowledge base required to perform the tasks in semester report writing? The specific questions are:
 - 1a. How are formal records of student achievement retained for future reference?
 - 1b. What informal information about students and their learning is available from formal assessment and collected over the reporting cycle?
 - 1c. How do teachers provide feedback to students and is the feedback retained as evidence of learning?
2. What decision making and reasoning occurs during the report comment writing process? The specific research questions are:

- 2a. Do formal grades alone provide sufficient information for teachers to compose valid report comments?
 - 2b. What teacher thinking is evident in the written report comments and verbalised commentary of report writing for a small number of hypothetical students?
3. What contextual factors influence the process of reporting? The specific research questions are:
- 3a. Do the schools described by respondents to the questionnaire comply with the Victorian Government reporting mandates and what other organisational factors shape reporting?
 - 3b. Do teachers believe that they know their students and this is sufficient evidence for report writing or do they believe that they need to accrue evidence to justify reporting decisions?
 - 3c. Are evidence collecting behaviours or other aspects of the teaching context associated with a collaborative or a confrontational attitude to parents?
4. How does a teacher in Victoria in 2008 - 2012 experience the process of composing reports using the Student Report Card format? The specific research questions are:
- 4a. What other factors influence teachers' thinking during the report writing process?
 - 4b. How does informal knowledge of students and their learning contribute to the report comment writing process?

Significance of the Study

According to Lesh, Lovitts and Kelly (2002) the goal of research in science, technology and mathematics education is to develop a body of shared knowledge including models and conceptual systems. Heibert, Gallimore and Stigler have argued for the importance of translating the tacit, practical knowledge held by teachers into a formal knowledge base that can be shared (2002). This study is significant because of its potential to contribute to both the theoretical understanding of this aspect of teaching practice and to lead to improvement in reporting practices (Lesh & Lovitts, 2000).

Research into teachers' professional thinking and behaviour has addressed pedagogical content knowledge, planning, interactive decision making and accuracy of teacher judgements of student intelligence and achievement (Shavelson, 1983) but there has been little research into reporting and it has not been recognised as an important part of professional practice. Case study research is valuable in that it leads to insights and models that can be informative in the broader context of the phenomenon (Ball, 2000). While grading and report writing do not occur internationally or even nationally in a consistent way, reporting is superior to grading (Read, 1984; Malehorn, 1984) as grading is more reductive. A description of report writing will be especially valuable in education districts where achievement reporting includes written statements and may provide useful commentary for education authorities considering change in reporting practices.

This study will generate practical professional knowledge that may be incorporated into pre-service teacher training or into the induction programs provided to beginning teachers within schools. Assessment is a routine part of classroom learning that has and is being exhaustively explored through research, especially in its role in improving student learning. Classroom assessment is requisite for the process of reporting. Elucidating the ways that information about student learning is already collected, may validate for teachers the strategies that they already follow, may identify excellent resources or strategies to expedite the recording of informal observations, and improve the perceived validity of the observations. Producing a deeper understanding of teachers' cognitive processes in collating formal and informal assessment into written reports may also allow teachers to recognise personal judgement strategies and perhaps allow them to be refined to become more systematic and effective.

Better explanation of the unique and complex professional knowledge and understanding required to produce student report cards may add to the professional profile of teachers. The study may contribute to efforts to assist parents to understand the reasoning, constraints and care taken over reports and improve the quality of communication between parents and teachers.

Limitations of the Study

All education phenomena are human constructs and are therefore shaped by socio-cultural context and potentially modified during investigation (Lesh, Lovitts & Kelly,

2000). The case of report writing in the State of Victoria during 2008 – 2012, is a very specific construct in comparison to other education districts, and the incarnation of reporting within each specific school is a further expression of the specificity of context.

Despite the wide distribution of the questionnaire, there can be no assertion that the data collected was representative of teachers in the State of Victoria at that time. Throughout the phases of this study, it was apparent that few teachers are willing to participate in research given the competing and onerous demands on their time. Those who were willing to participate were exceptional and therefore are unlikely to represent the characteristics of those who did not want to participate. There is variation in how teachers are required to apply reporting guidelines depending on school sector and there is also variation in the way that schools adopted the VELS framework. In addition to this variation, in any given school community there is further diversity of practice. The timeframe of the data collection is likely to have captured aspects of the transition to the new curriculum and new report cards.

Data collected through the process tracing task also cannot be generalised beyond the small sample investigated in the sense that every teacher will have a unique experience of report writing. Each subject has acquired their professional knowledge through a comprehensive set of personal experiences as both a student and a teacher. These experiences will not be shared by the other subjects nor other teachers in the wider teaching community; however, the thinking followed by the subjects will fall within the continuum of beliefs and practices. For these reasons, the description of experiences provided in the first person narrative are individual, but they should also have some commonality with other teachers performing similar tasks in other schools.

Definitions and Terminology

Assessment.

Assessment is a very awkward term in an education context. There is wide evidence that the term can refer to assessment of student learning needs particularly in the formation of individualised learning plans. In some contexts the term implies only standardised testing. According to Bell and Cowie (2001), assessment may be formative, summative or diagnostic. In this study, the term *assessment* will refer to the range of formative and summative tests, quizzes, questions, assignments and other

learning tasks, where information collected provides grades or other information about student understanding of particular concepts or acquisition of skills. There are potentially a number of stakeholders who are interested in the results of summative assessment and standardised testing including parents, school administration, health care agencies and government bodies (Bell & Cowie, 2001) but the results of formative assessment are important to the classroom participants. Formative assessment gives students feedback about their learning progress and teachers are able to utilise the information to modify learning activities, to best enhance student learning.

Evaluation.

The term Evaluation describes the cognitive process that a professional educator follows when making determinations about the student's performance on a particular assessment task according to specific assessment criterion. In academic settings this term is also used to describe professional testing for specific diagnosis of learning needs. It is also used to describe the process followed by a teacher to determine the relative effectiveness of a resource, approach or other aspect of the teaching and learning process conducted in a class.

Reporting.

Reporting is defined as the passing of information about an event or an individual on to other stakeholders. In the school setting, reporting is associated with the preparation of mid- or end-of-semester official communication with parents. It may or may not include worded statements. The expression *Reporting Cycle* generally refers to the teaching and learning over a semester which is described in a *Report Card* of some kind and provided to parents. Reporting Cycle implies that the teaching and reporting is repeated several times over a students' schooling and it acknowledges that sending a report card is the culmination of the entire semester's work, not simply the summative assessment that occurs at the very end. Grading refers to summative assessment that reduces the work of the semester to a score, single letter grade or similar ranked criterion.

Formal and Informal Assessment.

For the purpose of this study, formal assessment refers to any task which is graded with a criteria sheet, rubric or some grading tool, and a mark, score, grade or rating is recorded for semester reporting. In contrast informal assessment refers to non-graded

student evaluation, which may or may not be recorded. Informal assessment, even if it is not recorded, may be retained in the teacher's memory. Informal assessment may be recorded with any rating scale, terms, notes or symbols that indicate student behaviour, learning or other aspect of achievement. It might be a symbol in a class role to indicate incomplete work or a written comment about areas for remediation that are apparent on a topic test or some other task. Informal assessment can be gathered through means such as observation or through student self-assessment tasks. Informal assessment has been described in some studies as referring to non-standardised or non-summative testing. For the purpose of this study informal assessment means all information that will not be condensed to a mark, grade or rating scale.

Pre-service, beginning, early career and experienced teachers.

A pre-service teacher is actually a student who is participating in a teacher training program and who has or will have experience of teaching through the school based practicum. A beginning teacher is a teacher who has completed a teacher training program and who is employed in a school as a teacher with less than twelve months of teaching experience. Beginning teachers hold provisional teacher registration in the State of Victoria. They must have a reference from a principal following an induction year to support their registration. They are required to produce a folio of evidence accrued during that year in order to receive full teacher registration and they work a reduced teaching load in acknowledgement of the continuing induction into professional practice that takes place during the first year. An early career teacher is one who has up to three years of classroom teaching experience. An early career teacher has completed their teaching induction and has had several completed semesters of teaching practice and therefore a range of experiences in teaching. Some early career teachers have taken up positions of responsibility within their schools. When the term 'later-career teachers' is used in this study it refers to teachers with greater than ten years of teaching experience. When the term 'highly-experienced teachers' is used in this study it refers to teachers with greater than fifteen years of teaching experience.

Professional Practice.

The tasks performed by a person who is employed in the role of teacher are part of Professional Practice. The tasks performed by a teacher range from routine and simple tasks such as marking roles, to intellectually challenging and cyclical tasks such as

curriculum planning and assessment, to unexpected, emotional and extreme events such as managing students' injuries or conflicts, or external catastrophes. The knowledge base that underpins the tasks of professional practice is the *Knowledge Base for Teaching* or Professional Knowledge.

The Organisation of the Thesis

The thesis follows a conventional outline. The first chapter briefly addressed the general features of the project including the research questions, the nature and limitations of the study and terminology issues. Chapter 2 is a two part review of relevant theory from the education literature. Chapter 2 begins with a comprehensive review of the accumulated research into professional knowledge and professional practice. Feldman's perspective of *Teaching as a way of being* (1997) best integrates the previous decades of research and the way this model has been used in other studies is described. The second part of Chapter 2 is a review of a number of studies relating to aspects of assessment, grading and reporting that support the analysis of data in later chapters. In the third chapter aspects of the research method are fully explained.

Because of the large volume of data generated in this study, reports of the results and their analysis have been addressed in four chapters. Chapter 4 presents the data collected from the questionnaire with statistical analysis of quantitative data and content analysis of descriptive responses. Chapter 5 presents the written report comments generated by the second phase of the study, the Process Tracing task. Chapter 6 continues the analysis of the Process Tracing data with content analysis of transcripts of the vocalised thoughts of the participants. The seventh chapter presents commentary by teachers on the process of reporting and a descriptive narrative of the report writing experiences of a teacher. The themes and evidence that emerged from Chapters four to seven will be compiled using Feldman's (1997) four perspectives of teaching that make up *Teaching as a way of being*. The final chapter, Chapter 8, presents this description and then summarises the conclusions, implications and recommendations of the study. Table 1.1 indicates the association between chapters, phases of the study and research questions.

Table 1-1 The thesis outline showing aspects of the study and their relationship to the research questions

Elements of the study	Chapters in the thesis	<i>Research Questions</i>
Theoretical Research	<p>Chapter 1: Introduction</p> <p>Chapter 2: Review of the literature: (a) the development of holistic models of teacher knowledge, cognition and sociocultural context, (b) conceptual framework for grading and reporting tasks.</p>	
Survey by Questionnaire	<p>Chapter 3: Research method</p> <p>Chapter 4: Results and data analysis of questionnaire.</p>	<p><i>1a, 1b, 1c, 3a, 3b, 3c</i></p>
Written comments from Process Tracing task	<p>Chapter 5: Results and analysis of written report comments.</p>	<p><i>2a, 2b</i></p>
Verbalised thoughts from Process Tracing task	<p>Chapter 6: Results and analysis of Process Tracing task transcript</p>	<p><i>2a, 2b</i></p>
Interviews with respondents to Process Tracing task Narrative	<p>Chapter 7: (a) Analysis of interview transcripts, (b) analysis of narrative, and (c) generation of global themes.</p>	<p><i>3a, 4a, 4b</i></p>
	<p>Chapter 8: (a) General description of reporting from the perspective of Teaching as a way of being. (b) Summary, conclusions, implications and recommendations</p>	

Chapter 2. Review of the literature

Introduction

Report writing as an aspect of teachers' professional activities is absent from the body of education research. There are several studies of grading practices and there are decades of research into teacher knowledge and cognition that will provide the theoretical background to this study. This chapter, therefore, is made up of two discrete parts.

The first part of this chapter presents perspectives of teacher knowledge and thinking leading to the Teaching as a way of being model. The chapter begins with a review of the development of research since the 1970s addressing teacher knowledge and teacher cognition. In the last decade, research embraced a more holistic perception of teacher knowledge in practice and Feldman's perspective of *Teaching as a way of being* (1997) best integrates the previous decades of research. Strengths and weaknesses of Feldman's model will be considered.

The second part of this chapter will look at studies relevant to assessment, grading and reporting. These studies contribute to a conceptual framework, which delineates the main aspects of reporting to be studied and the relationship between those aspects (Anfara & Mertz, 2006; Miles & Huberman, 1994). Of the several studies on teachers' cognition, Shavelson's Cognitive Model of Teacher Judgement and Pedagogical Decisions (1987) will be presented to supplement consideration of the thinking and reasoning that occur during report writing. Bell and Cowie's (1997) discussion of the Learning in Science Research Project provides a practical description of the kinds of information about student learning available to teachers. Pijl's (1992) study of the information valued by teachers and how it is retained will be discussed. The review continues with a description of relevant studies on teacher grading practices, in the absence of studies on report writing. Brookhart's (1994) validity approach to grading practices and a decision tree for grading strategies based on Whitmer's Utility framework for marking judgements (1983) will be discussed in depth. To coalesce these studies the conceptual framework will be built by answering six questions about aspects of reporting and grading. These studies will also account for decisions taken in methodology and will support the interpretation of data presented in the study.

Part A: Development of Models of Teacher Knowledge and Teacher Thinking

Overview

Teacher knowledge and decision making have been studied since the 1960s but interest in the field of Teacher Thinking increased in the 1980s. Much of the early research came from the field of psychology, with teachers identified as a useful subject group. Later research aimed to identify aspects of teacher thinking and teacher knowledge that contribute to teacher effectiveness with the goal of improved teaching and improved learning outcomes for students. It was thought that if teacher knowledge could be defined and explained, then that knowledge could be used to identify expert teaching practice and effective teachers. That expertise would then be made widely available to practicing teachers and be used in teacher preparation courses.

The two most significant early studies of teacher knowledge were Elbaz (1983), who introduced the idea of *practical knowledge*, and Shulman (1986, 1987) who initiated a dialogue about categories of teacher knowledge. Defining the components of knowledge led to an exploration of how the categories of knowledge were interrelated, how much of the knowledge was common to all teachers and how teachers applied the knowledge in practice. As research progressed through the 1980s and 1990s it focussed on aspects of the teaching context that impacted on the decisions made by teachers. It also focussed on the individual teacher and the significance of their beliefs, attitudes and prior personal and professional experiences to explain teaching phenomenon such as pedagogical decisions and the uptake of professional innovation.

Allan Feldman (1997) brought together the complement of prior research and captured it into a perspective of *Teaching as a way of being*. Teaching as a way of being is an umbrella perspective that encompassed the three avenues of research into the professional knowledge and practice of teaching: teacher knowledge or the *Knowledge base for teaching*, teacher reasoning or Reflective teaching, and the impact of sociocultural context on teaching. To understand Teaching as a way of being it is necessary to review the evolution of research into teacher knowledge and cognition.

Teacher Knowledge and Cognition

Attempting to define a knowledge base for teaching.

In the book “Teacher Thinking: A study of Practical Knowledge”, Elbaz responded to the perception of the time, that “teachers are not commonly seen to possess a body of knowledge and expertise appropriate to their work and this tends to diminish their status in the eyes of laymen” (1983, p.11). Elbaz’s detailed study of a single teacher generated evidence of a body of knowledge which she described as *practical knowledge*. Elbaz defined practical knowledge as “the complex, practically orientated set of understandings that [teachers] use actively to shape and direct the work of teaching” (1983, p.3). The elements of teachers’ practical knowledge were: *knowledge of curriculum and instruction*, *knowledge of self and milieu* (including knowledge of students) and *knowledge of subject matter*. Elbaz’ categories were sufficiently expansive as to include an understanding that professional knowledge contains personal and individual elements through her inclusion of knowledge of self. It also anticipated future research into the significance of educational context on professional knowledge.

Shulman’s important discussion paper, “Those who understand: Knowledge growth in teaching” (1986), presented an historical perspective on teacher knowledge. The traditional expectation was that a teacher was primarily a conduit of information and skills. Even into the twentieth century, teachers only required evidence of their own mastery of the syllabus to be placed in charge of a class. Later in the twentieth century, with formal teacher training in place, pedagogy was considered more important than subject knowledge. It was felt that teachers would acquire the content for transmission as necessary and this perception emphasised the importance of textbooks in classrooms to provide the authority on content knowledge. Reflecting on the changing emphasis on knowledge types in teaching, Shulman (1986) proposed that teacher knowledge belonged in three categories: *content knowledge*, *knowledge of pedagogy* and *Pedagogical content knowledge*. Pedagogical content knowledge in particular has been the focus of substantial recent research in science for its potential to provide improved learning outcomes for students (Chen & Ennis, 1995; Gess-Newsome & Lederman, 1999; Loughran, Berry & Mulhall, 2006). These three kinds of teacher knowledge are interdependent; a teacher needs an extensive knowledge of subject content and how it fits into the curriculum across time, and knowledge of students as learners in order to

best select the approach and resources to communicate the content effectively to students. A teacher's individual practical experiences in specific contexts provide the idiosyncratic insights that make up Pedagogical content knowledge (Loughran, Berry & Mulhall, 2006).

Shulman (1987) subsequently expanded on the three knowledge domains adding *educational contexts, educational purposes, learners and their characteristics* and *curriculum*. He also embedded a pedagogical reasoning and action element to enact the complement of knowledge types. So, it was apparent that a Knowledge base for teaching (Shulman, 1987) must be complemented with an understanding of the thinking and reasoning that results in the range of teaching actions.

Some argued that teachers' experiences are too diverse to audit tasks or survey knowledge types (Tamir, 1991); however, Fives and Buehl asked a sample of teachers for their opinions of the important categories of teacher knowledge and the subjects of their study generated the following categories: *pedagogy, knowledge of children* - both as learners in general and specific students, *content knowledge, management and organisation knowledge, knowledge of self and others* (2008, p. 158). These categories of knowledge fit well with the categories proposed in the earlier research by Elbaz (1983), Shulman (1987), Grossman (1990) and others.

The discussion of categories of knowledge was extended by considering how knowledge serves teachers as they perform their work. Verloop, Van Driel and Meijer defined *knowledge for teaching* as all "profession-related insights, which are potentially relevant to a teacher's activities" (2001, p. 441) emphasising the formal theoretical knowledge and practical teacher knowledge that facilitates day-to-day performance of teaching tasks. Mayer and Marland (1997) referred to the ways of knowing and behaving that teachers develop with experience as *practical know-how*. A similar term is *craft knowledge*, the knowledge that "enables experienced teachers to make decisions about how best to approach professional tasks" (Ritchie, 1998, p. 2).

Evidence of the breadth of research into the meaning of knowledge for teachers is seen in the plethora of terms created to explain that knowledge, each shaping the explanation to account for aspects of teaching, people and the teaching environment. The diversity of descriptors also speaks of the difficulty in creating a model that captured the nature of teacher knowledge perfectly. In addition to the terms given in the

previous paragraph are: *professional knowledge* (Tamir, 1991), *professional craft knowledge* (Brown & McIntyre, 1993; Shimahara, 1998), *practice relevant knowledge* (Huberman, 1983) and *teacher lore* (Schubert & Ayer, 1992). Definitions that emphasise the personally and contextually constructed view of teacher knowledge include: *personal knowledge* (Gudmundsdottir, 1990), *personal practical knowledge* (Connelly & Clandinin, 1985; Craig, 1995), *action oriented knowledge* (Carter, 1990), *content and context related knowledge* (Cochrane, De Ruiter & King, 1993; Van Driel, Verloop & De Vos, 1998), *tacit knowledge* (Eraut, 2000; Calderhead & Robson, 1991), *deliberate practice* (Dunn & Shriner, 1999) and *implicit theory, scripts and schema* (Clark & Peterson, 1986). There are nuances in meaning between all of these terms, hence they are not interchangeable. Bryan (2012) noted the same difficulty in achieving consensus definitions in the field of teacher belief research.

Professional, personal and practical knowledge

Heibert, Gallimore and Stigler (2002) divided the approaches to investigating teacher knowledge into two broad perspectives: *professional knowledge for teaching* which is research based hence independent of school setting and generalisable, and *craft or practitioner knowledge*, which is contextual and more concrete. Arguably, professional knowledge would include categories of knowledge such as subject content and the general curriculum, although these are not fixed over time and place. Academic and research knowledge are also common across the teaching profession, but the ways that education administration bodies, government departments as well as individual teachers access research is very variable (Heibert, Gallimore & Stigler, 2002). Few teachers participate in research into teaching, and few access research (Heibert, Gallimore & Stigler, 2002), although some research is disseminated through professional bodies, professional development and educational bureaucracy. Aspects of pedagogy belong to the professional knowledge category, however, much of this is teacher lore, shared through interaction with peers, and learned by imitation or mentoring. Heibert, Gallimore and Stigler (2002) argued for the importance of translating the craft knowledge of many teachers into a knowledge base for teaching, which should be shared with the wider teaching community.

Whilst aspects of the knowledge base for teaching are common to all teachers, teaching is an individual and personal craft, shaped by personal history, individual

experiences, personality, subject matter, theoretical knowledge and aspects of the teaching context, such as experiences within a school system. Personal professional knowledge and personal practical knowledge, “reflects the individual’s prior knowledge and acknowledges the contextual nature of the teacher’s knowledge” (Clandinin, 1992, p. 125). Every teacher will link experiences to their existing knowledge. Experiential knowledge is retained and is drawn upon again in other situations providing an insight or a solution pathway in an unforeseen or critical situation. Of the range of possible actions in most situations the information teachers choose to use is determined by their beliefs as to what is important, what they should attend to in a situation, which external agents are most urgent or pertinent, what the goals are and what outcomes would be unacceptable (Clandinin, 1992). Feldman and Weiss (2010) refer to these strategies as *practical theories*.

In the 1990s, researchers embraced research methods that included case studies and narrative forms over larger studies (Clandinin & Connelly, 1994; Clandinin & Connelly, 1996; Craig, 1995; Elbaz, 1991) in order to anchor findings to a particular context and to emphasise the voice and the emotion of the teacher (Zembylas, 2007). Recognising that each teacher had a personal practical knowledge of teaching led some researchers to the conclusion that generalisation was impossible (Tamir, 1991) and others to question the value of research that focused on the individual over the collective, since that knowledge cannot be used to better understand teachers and their work, nor be used to assist in the preparation of pre-service teachers (Verloop, Van Driel, & Meijer, 2001).

Teacher cognition, decisions and judgments in practice, tacit knowledge and internalized reflective knowledge.

Given that professional knowledge for teaching is built through professional experience, significant events and classroom experimentation; it must produce a reliable core of strategies that can be drawn on when there is little time to think and respond. The ways that teachers’ gather, organise, interpret and evaluate information is referred to as cognitive information processing (Peterson & Clark, 1987). For over thirty years, strategies for cognitive information processing have been described in order to elucidate the strategies of effective teachers. As with research into teacher knowledge, no straightforward, universal account of teachers’ cognitive information processing could

be found in the literature. Simple behavioural associations were not adequate to explain the relationships between teachers' beliefs and their actions or decisions, particularly in the complex situations found daily in classrooms.

In the 1970s, insights into the thinking of teachers were obtained by investigating the performance of routine teaching tasks such as managing curriculum materials. Clark and Yinger criticised teachers for tending to make decisions “on the basis of hunches and intuitions about students' cognitive and affective states rather than treating first impressions as hypotheses to be tested by further observation or direct question” (1977, p. 295). Clark and Yinger also cite research by Marland (1977) that found that teachers make decisions but they don't tend to analyse alternative options for optimising the learning context. Later research suggested that much more reflection was occurring than may have been apparent. Shavelson and Stern (1981) reviewed the research undertaken in the 1970s, with several studies finding a strong relationship between pedagogical actions and teachers beliefs about teaching, the subject matter and features of the student group such as socioeconomic status.

Studies undertaken in the 1980s sought to explain *why* these behavioural associations existed. The work of many authors produced some understanding of teacher cognition in planning, pedagogical decisions, decision making, personal practical knowledge, pedagogical content knowledge, teacher reflection, and teacher experience (Hargreaves & Tucker, 1991). The International Study Association on Teachers Thinking (ISATT) was founded in 1982 at a conference in the Netherlands “as an association able to present an alternative research perspective on teacher thinking to that of the dominant paradigm of quasi-experimental, behavioural psychological approaches” (Day, 2011, paragraph II). ISATT later became the International Study Association on Teachers and Teaching.

Some studies were approached from a *personal expertise perspective*, focussing on individual teachers' attitudes and beliefs and relating them to the teachers' expertise in implementing the curriculum (Chen & Ennis, 1995; Leinhardt & Smith, 1985). Research into Pedagogical Content Knowledge suggests that teachers hold a repertoire of effective strategies which they use preferentially; the pedagogical choices are shaped by reflective evaluation of the experiences in previous teaching situations. Leinhardt and Greeno (1986) determined that experienced teachers make use of routines to manage

classroom practice, leaving them able to gather information about student progress incidentally. They found that novice teachers concentrate more on classroom management practices and are less able to obtain information about student progress to inform decision making.

Schön (1983) developed the concept of the *Reflective practitioner*; as a teacher reviews the effectiveness of their professional behaviours or decisions, this information further shapes their beliefs and behaviours. The complexity and immediacy of the work of a classroom teacher meant that teachers relied on strategies, routines or heuristics to guide them when responding to demands in the moment (Clark & Peterson, 1986; Livingston & Borko, 1989) rather than actively considering options and optimum strategies. The most effective information processing is associated with expert or experienced teachers. They develop and use strategies in an almost unconscious or tacit way to perform tasks such as evaluating evidence, balancing moral and practical considerations, considering multiple solutions and unresolvable dilemmas (Feldman, 1997). Carlgren and Lindblad praised the process of examining tacit knowledge for its contribution to the knowledge base for teaching and for improving practice, empowering teachers to manage external factors in their decision making and for “changing the emphasis in practice from reacting to dilemmas to solving problems” (1991, p. 515). Fehring (1998) described the complex integration of experience, tacit knowledge, common sense, accumulated knowledge, educational philosophy and professional competence as *internalised reflective knowledge*.

The reflective teaching approach had an important impact on pre-service teacher training (Calderhead, 1989). It has been viewed as the antithesis of tacit practical knowledge since tacit practical knowledge is seen as intuitive and even impulsive, but reflective teaching is considered purposeful and intelligent (Calderhead, 1989, p. 44). Reflective teaching couples the metacognitive processes of comparison, evaluation and self-direction with the common professional knowledge of teaching (Calderhead, 1989, p. 46) to produce better judgements and decisions in practice. And yet, teachers’ practical knowledge has been methodically constructed through experience and can prove to be highly effective and certainly more responsive and immediate, as required in a classroom, than a protracted search for best options through reflection. In addition, beginning and other teachers “do not have the professional confidence to subject their practice to critical self-reflection” (1989, p. 49). Black and Halliwell (2000) report that

novice teachers find it hard to apply what they have been taught in theory. Nevertheless, experienced teachers' reflectivity through critical evaluation can lead to improved teacher judgements, a professional disposition that is more open to innovation and ideally improved student learning outcomes (Black & Halliwell, 2000).

Critique of teacher thinking research.

The early decades of research into teacher thinking research was not able to explain why teachers do or do not select and sustain effective behaviours, even when they know how (Hargreaves & Tucker, 1991). It had not explained teachers' reticence to embrace innovation. It had not been able to explain idiosyncratic decisions by some teachers (Connelly & Clandinin, 1997), or account for the intuitive judgements or tacit approaches applied by teachers. A shift in the identity of the teacher as a subject in teaching research allowed these concerns to be addressed.

While earlier research in teacher thinking considered teachers as rational decision-makers more recent research sees them as constructivists, building meaning into the teaching context. There has been a shift from seeing teachers as inconsistent or non-compliant with directives to recognising there is rational and functional reasoning in the decisions taken (Carlgren & Lindblad, 1991). Failure to recognise the importance of context and the complexity of internalised reflective knowledge that occurs during decision-making, undermined earlier research.

Carlgren and Lindblad also critiqued research on teacher thinking because it studied thinking without considering teaching as a social practice. In order to investigate the link between thinking and context they considered the teachers' "conception of context and practical reasoning and the logic of events as determinants of teacher thinking" and actions (1991, p. 508). They note that emphasising aspects of context can make the teacher invisible when explaining practical actions, but emphasising the internal dialogue of the teacher without considering the context is also reductionary (Carlgren & Lindblad, 1991).

Teacher reasoning research has been valuable for teachers as it has highlighted the diverse range of problem solving and routine tasks performed by teachers. It has also accentuated how complicated teachers' reasoning must be in order to manage all of the

aspects of the learning environment (Feldman, 1997; Verloop, Van Driel & Meijer, 2001).

Sociocultural context and subjective personal context of teacher knowledge.

Personal professional knowledge is shaped by individual beliefs and experiences but it is also shaped by constraining factors that include bureaucratic and organisational procedures such as timetables, class groupings, administration, parents and community and externally mandated elements. Despite the fact that they work independently, teachers are also constrained by their colleagues and the culture specific to each workplace. Other constraining factors are both the actual and the perceived curriculum, access to materials and student characteristics and behaviour (Grant & Sleeter, 1985). Contextual and attention-dependent knowledge make up much of the practical knowledge identified as expert behaviour – it is tacit, it isn't recorded but it is the knowledge that allows the learning and teaching to occur, to be “responsive, flexible and ethical” (Ainley & Luntley, 2006, p. 1128).

Watson (1999) notes that teacher attitudes, beliefs and reasons are shaped by, but also subordinate to, those contextual forces that are part of the public domain. For Grossman (1990), knowledge of context acknowledges the significance of the constraints and expectations of the district, the school, the school culture, departmental guidelines, knowledge of specific students, community background, families, interests, strengths and weaknesses. Teachers' attitudes, professional beliefs and emotions are also the means by which they interpret, follow or resist the official culture of the schools in which they work (O'Connor, 2008). In turn, the teacher's knowledge, shaped by the context and their attitudes and beliefs, influences the way that teachers interpret student work, students' personal circumstances and a range of other judgements (Watson, 1999). Individual teachers bring unique and personal factors to the classroom such as a system of beliefs about people, community and education as well as individual experiences as a student and in pre-service training (Fishman & Davis, 2006). For example, Calderhead and Robson (1991) found in their study of pre-service teachers that their idea of the characteristics of a good teacher, come from a teacher or teachers that they knew as students. Ennis (1994) states that a teacher's beliefs come from personal, social and professional truths that arise over time through particular

experiences; they cannot really be measured but “must be inferred from statements or actions” (Ennis, 1994, p. 164).

According to Barnett and Hodson (2001), personal practical knowledge is important to teachers as it provides a sense of personal control and it provides a secure social location and identity as a teacher. Several key studies consider the emotions of teaching in a bid to factor emotion into an understanding of professional behaviour (Day & Leitch, 2001; Hargreaves, 2000, 2005; Schutz & DeCuir, 2002; Sutton & Wheatley, 2003; Van Veen & Lasky, 2005; Winograd, 2003; Zembylas, 2005). This is important, as it is strong emotions that provide the most significant impact on shaping teachers’ professional knowledge (Barrell, 1995). “Teachers’ knowledge is rooted in the details of particular classroom experiences, especially those that are stressful or problematic,” (Elbaz, 1991, as cited in Barnett & Hodson, 2001, p. 433; Barrell, 1995).

At the core of all aspects of teacher professional knowledge is the interpersonal relationships that constitute the professional role. Care, enthusiasm, integrity and dedication are social expectations of teachers (Fives & Beuhl, 2008) but a wide range of both positive and negative emotions are a part of teaching practice. Emotions range from moods to strong reactive emotions, to emotions of relationship (Lighthall & Lighthall, 2000) such as pleasure in student progress, enjoying the company of students, anger, fake anger, frustration, guilt, anxiety and sadness (Fives & Buehl, 2008).

Hargreaves and Tucker (1991) cite the research of Lortie (1975) to claim the two most significant emotions in teaching as pride and uncertainty. Both of these emotions are linked to the teacher’s identity in the role of teacher. Making the choice to care about students allows a teacher to establish and maintain a sense of pride in their professional identity which fits with their beliefs about teaching (O’Connor, 2008). Uncertainty or “fundamental competence anxiety” (Hargreaves, 1980 as cited in Hargreaves & Tucker, 1991, p.500) leads to self-doubt in the teacher and a sensitivity to any implied inadequacies by parents, colleagues or administrators. This anxiety is likely to have an impact on the decisions that teachers make in composing semester reports. It may be that if a teacher is confident in their identity, they are more likely to report knowing students well and be confident in their own gut-feeling or intuition, or when making decisions about students. Day and Leitch proposed that “Teaching at its best requires motivation, commitment and emotional attachment, and this requires a deep

knowledge of self as well as students” (2001, p. 414). This statement radically contradicts the perspective that the teacher should be objective and detached when guiding learning and conducting assessment.

There is also a perspective that teachers seek to be “good”, both in the sense of being a good teacher, and also in seeking to make right, just and ethical decisions in their practice, given that they know their impact on students extends beyond the classroom and into the future. Salloum and Abd-El-Khalick (2010) insist that the knowledge base of teaching must include moral aspects such as making value judgements, acting on personal ethics and understanding particular situations.

Integrated models of teacher knowledge.

The breadth and diversity of research on the knowledge base for teaching indicates a need for a more cohesive or holistic perspective. Several researchers have presented more integrated models of aspects teaching including *Pedagogical context knowledge* (Barnett & Hodson, 2001; Frykhold & Glasson, 2005), *Teachers’ professional knowledge landscapes* (Clandinin & Connelly, 1996; Craig, 1999) and a *Knowledge ecology* (Zembylas, 2007) and *Teaching as a way of being* (Stengal, 1996; Feldman, 1997).

Pedagogical context knowledge goes beyond teacher knowledge or reasoning to describe teaching within a highly contextualised space. Knowledge comes from the internal and external sources described previously. Pedagogical context knowledge includes academic and research knowledge, pedagogical content knowledge, professional knowledge and classroom knowledge (Barnett & Hodson, 2001).

Academic and research knowledge include areas of content and the knowledge base developed through pre-service and ongoing teacher training. Pedagogical content knowledge comes from experience, collegial discussion, imitation and reflection. Professional knowledge comes from teaching, by unconsciously reflecting on experience. It includes school programs, teacher lore, judgements about change, and has an emphasis on practical matters such as knowing about curriculum documents, duties of teachers, union matters, school administration and procedures for communicating with parents (Barnett & Hodson, 2001). Classroom knowledge comes from continuous

construction and review of day-to-day experiences and interactive decision making (Barnett & Hodson, 2001).

Clandinin and Connelly described the integrated understanding as a 'landscape' because teachers work in an "exceedingly complex intellectual, personal and physical environment" (1996, p. 5). Teachers' professional knowledge landscapes (Craig, 1999) connect personal knowledge and professional knowledge and connect practical knowledge with the teaching context. It is specific to a teacher, to a teaching group, to a school at a time in history with particular curriculum boundaries and with respect to the students, the subject and the unique student grouping (Craig, 1999, p. 398). Zembylas extended a knowledge landscape into a knowledge ecology. Knowledge ecology is defined as; "a system consisting of many sources and forms of knowledge in a symbiotic relationship: content knowledge, pedagogical knowledge, curriculum knowledge, knowledge of learners, emotional knowledge, knowledge of educational values and goals and so on" (Zembylas, 2007, p. 356).

These more integrated definitions of teacher knowledge are powerful for examining all aspects of teacher practise (Black & Halliwell, 2000), because they are associated with innovative and alternative uses of artefacts and words, drawings, journals, annotations and discussions to generate narrative based theory that holds a representation of a whole person as a subject, not a role and not an activity (Black & Halliwell, 2000; Connelly, Clandinin & He, 1997). Of the integrated models of teaching, Feldman's Teaching as a way of being (1997, 2002) has been used in a number of multi-method studies that relate beliefs, attitudes and behaviours in teaching contexts, so it is most appropriate to the purpose of this study, and will be explained in greater detail.

Teaching as a Way of Being.

According to Feldman (1997), the knowledge, thinking and contextual perspectives of teaching, drawn from the body of research, provide insights into teaching but do not fully capture what it is to teach. In combination and in relation to an interactive human being as teacher, the *Teaching as a way of being* perspective presents a holistic model for understanding teachers and teaching. He writes:

This, then, is the basis of the perspective from which teaching is viewed as a way of being. It begins with the recognition that teachers are people in the role of teacher, who act as teachers, and teach in educational situations. It is their being as teacher that their understandings arise through meaning-making in those situations, and why they act as they do. And it is also through their being in these situations, with their web-like structures that extend not only through time and space, but also across human relations, that teachers come to understand others through a hermeneutic interpretation of their interactions. (Feldman, 1997, p. 768).

The teaching as a way of being perspective is represented in Figure 2.1. Feldman does not describe way of being as a hierarchy; I have chosen to represent it this way, as it infers the associations of theoretical development that have been described to this point in Chapter 2. Knowledge provides the information that shapes judgements which in turn are shaped by aspects of context, that surrounds and interacts with the person who is being in the role of teacher. Way of being is more than just the sum of the other three perspectives: it is interactive not just receptive or passive, it is understanding not just knowledge, it is wise action not just thinking or judging, it is situation across space and time, not just context (Feldman, 2002).

Feldman first described the model in a study called “Varieties of wisdom in the practice of teachers” (1997) drawing on work by Stengal (1996), Heidegger (1962) and others to flesh out the meaning of ‘being’. Feldman revisited the composite perspective of teaching as a way of being in later papers (Feldman & Rearick, 2000; Feldman, 2002; Feldman & Weiss, 2010) and fleshed out elements of the composite model, using it as a framework to analyse and compare two teachers’ use of curriculum (Feldman, 2002). Feldman doesn’t claim Teaching as a way of being is a complete perspective only that it is more holistic when combined with the subordinate approaches (2002).

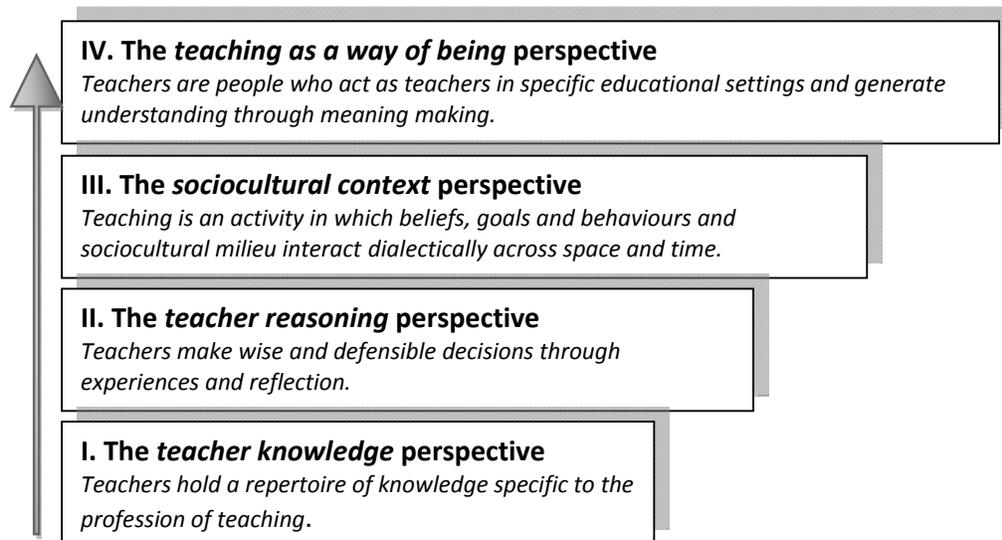


Figure 2-1 Teaching as a way of being (Feldman, 1997)

In “Varieties of wisdom in the practice of teachers” (1997), Feldman explored all of the philosophical aspects of the construct of way of being and of what is meant by being a good or expert teacher. Teaching as a way of being comes from work by Stengal (1996) on understanding the teacher as ‘being’, in an existential sense. Stengal also defines the four *ways of knowing* that make up the *Wisdom of practice* for teachers; the ways of knowing are “logical, cultural, pedagogical and professional knowledge” (Feldman, 1997, p.764). *Wisdom of practice* is part of *wise practice* – that is being a good or expert teacher. The other elements of *wise practice* are *Deliberative wisdom* and *Wisdom-in-practice*.

Wisdom of practice is associated with Shulman’s (1987) description of kinds of knowledge that are relevant to practice and derived from practice. *Deliberative wisdom* is associated with Schön’s Reflection-on action (1983) and is the ways in which a professional reconstructs, recodes and applies expert knowledge through analysis, consideration and reflection (Goodfellow, 2003, p. 49). *Wisdom-in-practice* includes the sociocultural perspective of teaching and teaching as a way of being. It leads to an “understanding of one’s own being and others” in educational situations (Feldman, 1997, p. 769). It comes from relationships and interactions in educational settings, both inanimate and animate. Goodfellow describes *wisdom-in-practice* as the “experiential aspect of thoughtful actions in practical situations, include emotional, ethical and moral connotations” (2003, p. 49). Over time the wise, experienced teacher will act wisely

within educational situations due to an understanding of what it means to teach and be a teacher (Feldman, 1997, pp.757- 58). That understanding is, “set very deep in the person’s spirit and upbringing and in the way that they have been taught” (Feldman & Rearick, 2000, p. 230).

Feldman has continued to evolve the concept of way of being to deconstruct the individual in the role. Rather than the teacher ‘being’ as a single entity, the teacher would in fact have multiple identities. The multiple identity perspective comes from Gee’s (2001) Model of Identity and Tajfel and Turner’s (1985) Social Identity theory. This extension to Feldman’s theory cannot assist in this project beyond an appreciation that the teacher holds other identities such as parent or spouse. These alternative social roles depend on the context and the role performed in a situation. Feldman and Weiss (2010) indicated that the multiple identities validly coexist and are interdependent to some degree at least. In addition, the identity of teacher has some degree of commonality between individuals because of its common knowledge base and professional role.

Feldman critiques the teacher knowledge and reasoning perspectives because they situate the teacher as almost passive – the teacher receives knowledge, teacher reasoning is the product of an algorithm or rule. Feldman refers to Searle’s (1995) work to justify his rejection of a computational model of teacher thinking. Searle strongly links action to the individual’s intentional states – whether those intentions are consciously considered or whether they arise from ‘background’ capacities, such as abilities, dispositions, causal constructs and beliefs. Searle’s approach diminishes the significance of the thinking processes in favour of the intentions and beliefs that predicate action. In the social constructivist view of teaching, the teacher may be defined relative to the context. The way of being perspective situates the teacher as an interactive human being within the educational setting, rather than objectifying them.

Feldman finds additional deficiencies in the subordinate perspectives of teachers and teaching. He writes, “Each is an interpretive framework that relies on metaphors to construct its model of teaching” (2002, pp. 1032-1033) and ultimately metaphors will fail in various aspects. He also argues that those frameworks are static images of teaching practice, lacking interaction with context and the individuals that are part of an educational setting (2002). Mulholland and Wallace (2008) embrace the use of

metaphor in their discussion of teacher knowledge categories. They present four metaphorical clusters to describe knowledge – entity or Computer, activity such as Craft, state generally Complexity and interactive orientation as part of the environment or Change. Mulholland and Wallace see complexity and change as the most appropriate metaphors for way of being as they allow for emotion, teacher identity and moral character in teaching (2008, p.46).

Salloum and Abd-El-Khalick (2010) consider teaching as being informed by *Practical-moral knowledge*. They write that the major theoretical traditions in science education, constructivism and the sociocultural perspective, view teachers as “disembodied cognizing agents” (2010, p. 930). In order to establish what is good in the sense of ‘good teaching’ it is necessary to study teachers’ communities, interpretations, actions and the interaction between them. Knowing what is ‘right’ or ‘good’ is about interpreting and understanding particular situations. Within their way of being, a teacher holds beliefs which may or may not be enacted, but the act of interpreting an educational situation uses Practical-Moral Knowledge to reflect on personal professional experiences (Salloum & Abd-El-Khalick, 2010).

Feldman argued for the importance of understanding teacher behaviours in order to improve teaching practice and pre-service training (1997). Feldman’s model recast expertise in teaching from an accumulation of knowledge and reflective practice, to a complex set of ways of thinking about what it means to be a wise teacher, especially valuing understanding over knowing, and valuing situation over context. He noted that the teaching context is far too complicated and variable to neglect the full capacity of the teacher as thinking human who can reason through everyday decisions. The expertise of teachers lies in their ability to set goals, to make defensible decisions based on practical and moral considerations and to plan and carry out actions to meet these goals. They must be flexible, must act responsibly in various contexts and also believe in “multiple solutions and insolvable dilemmas” (1997, p. 759).

Goodfellow (2003) provides a salient example of how inadequate perspectives of teaching practice undermine research and decision making about teaching. According to Goodfellow, existing tools for assessing quality and improvement in accreditation procedures in Early Childhood procedures in Australia were deficient because they did not “reflect the energy, passion and commitment that motivate staff; the beliefs and

values that guide their actions; and the knowledge and skills that enable them to act in considered and professional ways as they engage in their day-to-day practices” (Goodfellow, 2003, p. 48). This meant that assessment of professional practice were inaccurate, did not recognise the skill and complexity of the work being conducted and did not properly acknowledge the professionalism of the early childhood teachers. The direct result of the inaccurate assessment and portrayal of the profession was low retention and low morale within the profession (2003, p. 48), which ultimately has a negative impact on the provision of services to children.

Implications of the theoretical model of teacher knowledge for this examination of report writing as an aspect of professional knowledge.

Black and Halliwell argue that as it is difficult to access teacher knowledge in action, “it is best done through a combination of approaches, especially including narrative forms” (2000, p. 104). A small number of studies published over the last decade have utilised the Teaching as a way of being model to interpret the relationship between beliefs and practices in educational settings (Acheson, 2003; Brown & Melear, 2006; Feldman & Weiss, 2010; Keys, 2008; Salloum & Abd-El-Khalick, 2010; Verjovsky & Waldegg, 2005). Some of the studies use an ethnographic approach and some have phenomenological approaches. Data in all of the studies is gathered from multiple sources and analysed using multiple methods to improve validity of findings through the triangulation of data from several sources.

Verjovsky and Waldegg (2005) used questionnaires, semi-structured interview and non-participant observation of classes when investigating the degrees of coherence between beliefs and practices of a Mexican high school science teacher. Verjovsky and Waldegg (2005) emphasised the need to ascertain beliefs in order to understand teaching practices and how they fit with a model of professional knowledge or practices. Salloum and Abd-El-Khalick (2010) in their study of practical-moral knowledge in science teaching, used an ethnographic approach including methods such as observation, interview, discussion and artefact analysis to generate case studies. Feldman and Weiss (2010) used ethnographic methods including participant observation, interviews and document analysis.

Brown and Melear (2006) sought to investigate the link between beliefs and practices with respect to inquiry based learning of pre-service teachers. The methods used were qualitative and quantitative including interview and classroom observation and previously validated survey instruments. In Brown and Melear's study, qualitative data was quantified to allow for statistical analysis. Keys' self-study of beliefs and practices when teaching science to Indigenous Australian students (2008) used observation of lessons, student produced artefacts and focus group discussions, teacher reflective journals, audio recordings of planning and review sessions and anecdotal notes of conversations.

Acheson (2003) prepared a dissertation about teachers' beliefs, knowledge and practices about maps. She conducted a two stage research project including a mailed survey, interview and classroom observation. Her survey was researcher developed and was used to identify participants for the second phase of the study. Survey data were analysed with descriptive statistics and qualitative analysis. Interview and observation data were analysed using grounded theory techniques of coding and theme identification.

The mixed method model proposed for this study utilises similar data and methodologies to those described here. It also builds on the accepted methods associated with teacher cognition studies by using Shavelson's Cognitive model of teacher judgement and pedagogical decisions (1983).

Summary

The four perspectives of teaching, according to Feldman's Teaching as a way of being model, encompass significant bodies of research. The teacher knowledge perspective has been progressively developed since Elbaz asserted that there was a body of professional knowledge held by expert teachers. While the professional knowledge base is unique to each person in the role of teacher, given the individual's teaching experiences, the aspects of teacher knowledge common to the profession of teacher includes all categories of knowledge that serve teachers as they perform their work. The specific categories of knowledge may include: knowledge of pedagogy, Pedagogical Content Knowledge, curriculum, subject matter, knowledge of students as learners and as specific people, knowledge of organisations and wider sociocultural context and

knowledge of self. Report writing is an example of craft knowledge, as it is an expression of the knowledge that teachers' hold and use to make decisions about how best to approach teaching tasks (Ritchie, 1998). The findings of this study will be framed within Feldman's perspective on teaching, highlighting the professional and practical knowledge used in report writing, the cognitive strategies followed, the evidence of relationship or interaction found through the process and insights into what the reporting process means for the subject who is "being" in the role of the teacher.

Part B: A Conceptual Framework for Understanding Grading and Reporting Tasks

While the explanation of findings in this study on report writing as an aspect of professional practice will be presented holistically using the theoretical framework of Teaching as a way of being, a number of studies present conceptual elements that were considered in the development of the data collection tools in this study and also will assist in making sense of the data obtained. These studies will be presented in six clusters addressing six questions: (a) How do teachers know about student learning? (b) How do teachers integrate information together? (c) How do teachers record information about student learning and what do they value? (d) What do teachers consider when grading students? (e) How do teacher view parents, given that reports are addressed to parents, and (f) What guidelines are in place for writing reports in Victoria in 2007 – 2010?

It should be noted that most of the references on reporting and grading relate to studies conducted outside of Australia. It appears that no recent studies of grading or report writing in the State of Victorian have been published. There are policy documents on report writing, and one journal article by O'Donoghue and Dimmick (2002) that presents a summary of stakeholders' perceptions of reporting in Western Australia, based on group discussions that were held in eleven primary and secondary schools. There were a few documents (Baumgart, 1989; Masters & Hill, 1988; Scott, 1988) that describe aspects of the characteristics of reporting. Written commentary, as part of a student report card, is less common than grading. It is not carried out uniformly across Australia, and this may be the reason it features so little in the literature.

How do teachers know about student learning?

In 1983, Dorr Bremme posed the questions “What methods and instruments do teachers routinely employ in making sense of how their students are doing academically? How do teachers think and reason about assessing their students’ learning?” (1983, p.1). He concluded that the question had largely been unaddressed in the body of research, up to that point.

Teachers attend to a wealth of information entering and being generated in the classroom. Information entering a classroom relates to aspects of the school context, curriculum guidelines, and information about students; this may come from previous teachers, other agencies, families and students themselves. The information generated in classrooms is the product of interactions between students and teacher, students and their peers and students and learning or assessment tasks. Teachers measure learning with formative and summative assessment and they measure other parameters with a range of strategies.

Academic learning and all of the other measures of progress are monitored by the teacher through formal and informal assessment. Formal assessment results in a mark or graded measure of knowledge or skill, generally recorded at the end of a topic (McIntosh, 1997). Informal assessment encompasses all of the ways that teachers can accrue information about students. It accompanies formal assessment but it is also ongoing over the entire relationship between teacher and student. The information comes from listening in to conversations or noting students’ questions, explanations or answers. It comes from observing students’ practical work, how they interact with others, how they engage with a task or organise their materials and resources. It comes from written work, notes, rough work, finished products, homework and how ideas are expressed or represented graphically. It comes from non-verbal actions or expressions and teacher-student interactions. It comes from noting how students approach a formal task like a test, the kinds of errors they make and the excellent responses, or out-of-the-ordinary insights. Informal assessment is valued by teachers for contributing to the reliable knowledge held in their minds about students and their learning (Huberman, 1983).

Teachers monitor attitudes and behaviours that support and impede academic learning. *Academic skills* such as memorising, critical thinking and reading, enhance learning (Diperna, 2006). There are other skills, referred to as *Academic enablers*, that enhance academic skills; they are interpersonal skills, study skills, motivation and engagement (Diperna, 2006). The adults that surround students seek to maximise learning for students, hence monitoring attitudes and behaviours that support learning provides information that can be used by teachers and parents to improve learning outcomes, to encourage helpful behaviours, to intervene in problems and to provide counselling resources and support. Teachers also gauge the feelings that are occurring within the class – looking at student interest, involvement in an activity and enjoyment of particular tasks (Pijl, 1992; Huberman, 1983).

The kinds of learning identified in Science classrooms through the *Learning in Science Project* (LISP) were science learning, social development and personal development (Bell & Cowie, 2001a). Social development included interaction with others, group work and peer assessment. Personal development included self-assessment, classroom behaviour, time management, motivation and attitude. There is overlap between the academic enablers described by Diperna (2006) and personal and social development characteristics of learning behaviour identified in the LISP project. Measures of social and personal development are of interest to parents because they provide salient information about their child's wellbeing, progress and potential future success.

Bell and Cowie found that of the three kinds of learning being assessed in the Learning in Science Project, science learning was more likely to be assessed formally, but social and personal development were more likely to be assessed by informal means. The subjects also indicated that they were not always conscious of informally assessing these characteristics of learning, rather they were getting an impression or 'gut feeling' about their learning (Bell & Cowie, 1997, p. 22). Assessment is not an activity that merely audits learning (Shepard, 2008), it impacts student learning and motivation and influences the nature of instruction in the classroom. All activities that teachers and students undertake to get information can be used diagnostically to alter teaching and learning (Bell & Cowie, 1997).

Huberman recognised that teachers are likely to have cognitive strategies that allow them to evaluate how valid and reliable their own and other teachers' assessment of

student achievement are (1983). The kinds of measures of reliability and validity include: personal feeling or intuitions, personal experience, the feelings or experience of other teaching colleagues, traditions or guidelines specific to the school, judgements of persons in positions of authority and also any external quantitative measures of student achievement that they may have access to, such as data from the National Assessment Program – Literacy and Numeracy (NAPLAN).

Teachers are required to use their professional judgement about students to ascertain: if work is improving or below expected standard, if there are extenuating circumstances that may impact on students, such as medical or learning difficulties, and if a student needs to be extended or if work needs to be modified. They also note ability, motivation, participation, work habits, classroom behaviour, personality characteristics, physical factors, family life, interaction with peers, students' self-concept, independence and knowledge about the way students think (Mayer & Marland, 1997; Connell, 1985; Kagan & Tippins, 1991; Marland & Osbourne, 1990; Berliner, 1988; Shavelson & Stern, 1981). All of these potential pieces of information assist the teacher to respond appropriately to student during class and when marking or grading tasks. Mayer and Marland (1997) contend that teachers invest time and effort in accumulating information about students in order to know the students; this assists teachers to validate new information they obtain about students, to form academic expectations of students, to cater to individual learning needs, to accurately judge aspects of classroom interaction and to develop a picture of the class as a whole. Beyond professional obligation, caring about a student motivates the teacher to “gather information about them, to help know them as an individual, to know how to teach them” (Webb & Blond, 1995, p. 612).

Pijl (1992, p. 118) found that teachers may construct identities for students as ‘good’ or ‘weak’ on the basis of observations and judgements about motivation, effort, comprehension and potential. These judgements are mediated by, “what the teacher values, how this is conveyed, how the student interprets and expresses what she thinks is valued, how the teachers responds and so on” (Watson, 2000, p. 70-71).

Gipps argues that teacher assessment, whether planned or ad hoc, produces only “partial or fragmentary information” (1994, p.3) about students, but over time and ongoing assessment the perceptions that the teacher holds becomes more valid. Further, teachers

formulate definite and quite accurate opinions concerning the competence of their pupils and tests commonly, “do little more than legitimize and quantify the assessment made through extended classroom contact” (Clarke, 1992, p.25).

While it is good that a teacher ‘knows’ students it is important that the teacher’s judgement is valid and that it can be flexible enough to adopt evidence of change. Some studies of teacher grading indicate that teachers’ perception of student ability can be persistent even in the light of contradictory evidence (Jussim, 1986; Pijl, 1992). “The best a teacher can do is to behave as if her[or his] interpretation of student responses give her [or him] adequate but tentative, ephemeral information for teaching purposes, retaining an open mind and avoiding irrevocable decisions such as tracking, stereotyping and labelling” (Watson, 2000, p. 88).

Teachers know about student learning through purposeful gathering of information using formal and informal strategies. Knowing a student takes time and interaction with the student, using learning tasks to gauge learning against standards described by the curriculum and the performance of other students both past and present. Since knowing a student is more than having evidence of their performance on a formal assessment task, this study specifically seeks to ascertain if knowledge of a student’s performance in formal assessment is adequate to describe their learning performance over a semester.

How do teachers gather and integrate information together?

Barnes’ (1985) study of forty teachers and student teachers and their use of strategies for evaluating student learning in classrooms reported ongoing informal assessment of students through observation and verbal interaction to gather ‘massive’ amounts of information for assessment. The subjects of the study reported that the accrued information allowed them to know where student learning was at, much more reliably than one off external tests (Barnes, 1985). Distillation of the enormous amount of information to a grade or succinct statement is the result of multiple judgements, the exact nature of which may be better illuminated by this study.

Read writes “reports lapse into cliché and repetition in direct proportion to the amount of hard information the teacher has collected” (1984, p. 11). The information that contributes to reporting can come from comments recorded in the teachers’ journal, student self-evaluation and all kinds of records of work. Watson proposed that teachers

use informal assessment to look for evidence of “capability, understanding and performance as well as working habits and notions of ‘ability’ and ‘potential’, which help a teacher decide what to say, and how” (1999, p. 107).

Bell and Cowie (1997) found that formative assessment information, rather than grades, was used to complete the descriptive comments about the students in semester reports. Subjects in their study reported that knowing the students well, made parent-teacher conferences more useful and made commenting on written reports more focussed. One subject wrote, “It’s also a huge job to take all that body language and all that feeling and put it into one sentence” (Subject TD8/96/23.24 as cited in Bell & Cowie, 1997). Bell & Cowie (1997) reported that written comments came from gut feelings or implicit professional knowledge obtained through observation, interaction with students in class, reading their work and students’ self-evaluation comments.

Shavelson’s *Cognitive Model of Teacher Judgement and Pedagogical Decisions* (Shavelson & Borko, 1979; Shavleson 1983; Shavelson, Attwood and Borko, 1977; Shavelson & Stern, 1981) was developed as a structure for organising and conducting research into the factors that contribute to teachers’ judgements and pedagogical decisions. A representation of the model is shown in Figure 2.2. The model gathers information from multiple sources to develop a picture of the way teachers manage large amounts of information and then integrate it into judgements about students’ cognitive, affective and behavioural states. As Fehring (1998) has indicated, identifying cognitive processes is actually less useful than discovering practical theories, however, Shavelson’s Cognitive model of teacher judgement (1983) is still valuable for this study because it shows that teacher judgements are the product of multiple sources of information relating to the student and external parameters. It indicates that teacher judgements are the product of heuristics and this alone refutes the contention that report writing is simply associating a comment with a mark.

Shavelson and Stern (1981) promoted Process Tracing as one of the appropriate methods for investigating teacher cognition and for this reason it was used in this study. There is no explanation of a possible cognitive mechanism for integrating information about students in Shavelson’s model; the integration of information appears to be the product of multiple decisions based on interpretation, reflection and judgement that may be described as Wise Practice (Feldman, 1997).

Shavelson and Stern (1981) frame teachers' pedagogical decisions as the result of a three stages of cognitive information processing that begins with information about the student. The information comes from first and second-hand sources. It may be anecdotal reports of other teacher's impressions, school records or standardized test scores. It will come from a teachers own informal observations of work, of the student's behaviour or interactions, including: academic achievement, ability, motivation, participation, work habits, classroom behaviour, personality characteristics, physical factors, family life, interaction with peers, students self-concept and independence (Berliner, 1988; Connell, 1985; Kagan & Tippins, 1991; Marland & Osbourne, 1990; Shavelson & Stern, 1981).

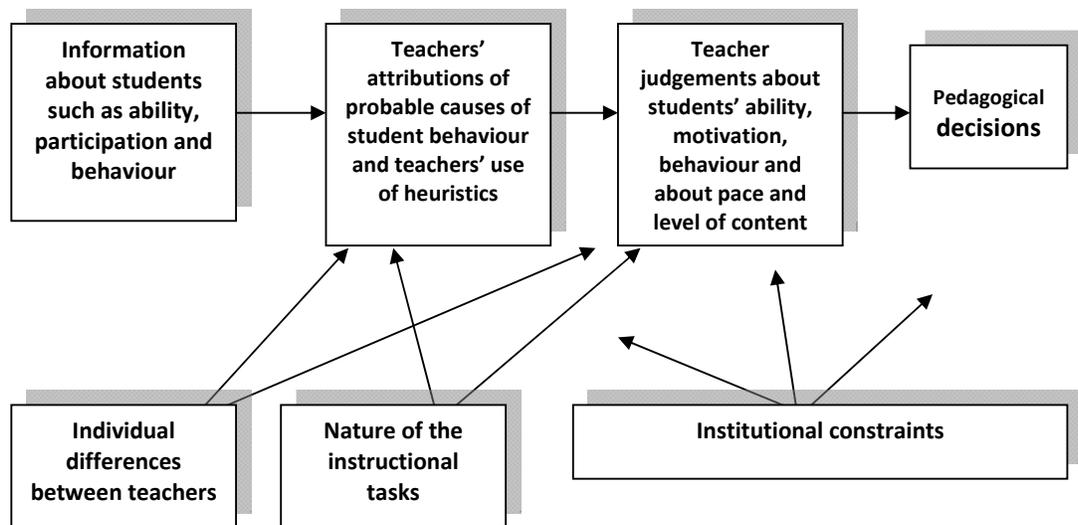


Figure 2-2 Shavelson's Cognitive Model of Teacher Judgement and Pedagogical Decisions (Shavelson & Stern, 1981)

The Cognitive model recognises that information about students is interpreted through a frame of reference generated by the individual teacher. The model describes this stage as “teachers’ attribution of probable causes of student behaviour and teachers use of heuristics” (Shavelson & Stern, 1981, p. 462). This means the teacher will link information about the student to other information that they hold, and will try to infer what the information means. Information and its inferred or likely meaning, support the teacher to make judgements about the student or the students’ work, which can then lead to various pedagogical decisions or professional actions. The factors which shape

the teachers frame of reference and constrain all levels of the model include contextual factors and the experiences that contribute to the teacher's personal professional knowledge. If the judgement relates to a particular task or piece of work, the teacher's knowledge of the task will also impact on the meaning that is made about the student's performance.

Clarifying the influences in decision-making makes apparent how complex decision making is in teaching. Fehring's (1998) study of the explicit and implicit influences on the decision making process in literacy assessment came from a detailed ethnographic procedure including interviews, on-site field observations and content analysis of curriculum documents for three subjects. The study reported that among the influences on the teacher judgement process were: internalised reflective knowledge, published standards, assessment strategy selection, the influence of significant peers in schools, external professional considerations such as policy directives and the macro-political context through the wider social expectations and the ramifications of policy at state and federal levels of government (Fehring, 1998).

Clark and Yinger (1977) described research by Marland (1977) that identified five principles of teaching that strongly impact on decision making: they were the principles of compensation, strategic leniency, power sharing, progressive checking and suppressing emotions. The principle of compensation describes the tendency of teachers to discriminate in favour of shy, low achieving students. Strategic leniency was seen in a teacher's tendency to ignore poor behaviour from students in specific circumstances. The principle of power sharing described teacher judgements for positive reinforcement for students who were seen to be leaders and who could have a positive impact on classroom management. The principle of progressive checking involved monitoring and encouraging students, particularly low ability students. There is also the principle of suppressing emotions, which Marland (1977) related to the risk of disrupting classroom management, but in the more recent holistic paradigms, may be seen as the teacher behaving in the expected manner for a teacher, that is, stable, unemotional and in control.

The strategies that teachers use to gather and integrate information together are not well understood. It is clear that there are multiple judgements that go into grading decisions and the judgements are shaped by the information available to the teacher and

other extrinsic factors. The judgements are also shaped by beliefs or principles of teaching such as the principles of compensation and strategic leniency. The teacher must judge what is valued, relevant and appropriate when integrating information from a number of sources to provide a commentary or review of the semester to a student's family.

How do teachers record information about student learning and what do they value?

The questionnaire data in this study included questions that were drawn from the study by Pijl (1992) which addressed the ways that teachers record information about learning and provide feedback to students. Pijl found that when teachers retain information in teacher records, the information will be influential on teacher judgements for a longer period of time. He asked the teacher subjects of his research how they recorded their notes about students' learning. Over half of the assessments made did not lead to any record of the assessment. Of the total assessments made, 22% were recorded in teacher notes, 25% were recorded on student work and a small percentage recorded both (1992, pp. 122-123). Pijl found that the kinds of records teacher make included: notes about completion of a task, the number of mistakes, marks and analysis of mistakes. The study found that incidental observations were the most common assessment, followed by observation of task completion and correction of work. Informal assessment occurred concurrently with formal assessment, especially incidental observation during task performance (1992, p. 122). Pijl (1992) also reported that teachers record the data obtained through more formal methods in such a way that the data were accessible over a longer period; for example, it may be kept in files, mark books or computer programs. Simon, Tierney, Forgette-Giroux and Charland note that assessment "marks" may validly be ordinal ranking, numerical values, either as raw scores or percentages or narrative (2011, p. 539)

Sheridan (1973) conducted a small study into how influential the provision of written information about students is, in comparison to information provided anecdotally to teachers about students. The study indicated that written information was more readily recalled over a longer period of time than anecdotal information and that information provided anecdotally from other teachers was valued along with information from external testing.

Pijl (1992) observed that teachers value what they have evidence of. My teaching peers report that parents ask for evidence and are placated by evidence if the teacher's account of an incident, performance or habitual behaviour differs from the account given by the child. For evidence to be presented to parents, it must be available as a written record. Teachers will be asked to complete an incident report describing incidents such as accidents in a science laboratory. Since informal observations of student behaviours are not likely to be recorded they may not be valued by either parents or teachers.

Ruiz-Primo and Furtak (2004), describe informally gathered information as transient since it occurs in response to a question or an incorrect answer requiring the teacher to respond or act spontaneously. Any attempt to record the information at the time is likely to interrupt the flow of the lesson and it is difficult to recall and record these observations retrospectively as so many will occur in a day. Watson's study of the informal assessment strategies of Mathematics teachers presented the reflections of a teacher who noted that he constantly collects information about students and stores it in his head – not on paper. He says:

"I suppose what happens is that you record things in your mind continually. What is it that I record? I record how much work he is able to do, his interest in it, his attitude, how much supervision he needs or encouragement, in particular do I have to speak to him to stay on task, and then I would also record how he is prepared to work without my help or asking, who he works with, how well he works, whether he likes to work on his own or not, whether he asks questions that are not prompted by me ..." (Watson, 2000, p. 75).

Clarke (1992) notes that formal assessment interrupts the instruction process, hence is generally applied to the whole class and it is therefore recorded. He also notes that even if informal assessment is often not recorded, because the observations tend to relate to one or a few students it is well recalled by the teachers and it is able to impact on teacher decisions about learning. Pijl argued that teachers and others view formally gathered assessment data as reliable. Formal data helps to confirm teacher judgements but informally gathered data is perceived to be not as reliable and will influence judgements less (1992, p. 119). Moroney and Olssen cite research prepared by the Australian Federal Department of Employment Education and Training and published in the Annual National Report on Schooling in 1992, that primary and secondary

teacher make extensive use of informal assessment practices but that “overwhelmingly, secondary teachers relied on formal assessment methods when reporting student achievement” (1994, p. 392).

Recorded information that is retained in teacher records can hold influence over teacher judgements and reporting for a longer period of time (Pijl, 1992). Often teachers provide feedback to students by writing on or attaching comments to the students’ work and returning it to them. This evidence is therefore not retained by the teacher and those insights are evidence of not available to the teacher for the end-of-semester reporting (Pijl, 1992).

Sadler’s (1989) study of formative assessment and improving student learning through feedback and self-evaluation, coincidentally found that each teacher’s approach to gathering assessment information was linked to their implicit views of learning. Teachers who believe they know their students rely on memory, intuition or gut-feeling about students to produce reports. The disadvantage of this approach is its lack of tangible evidence. Other teachers gather copious amounts of evidence and find they struggle to condense the volume of information, and end up using very little of what has been collated. Some teachers rely on systematic, planned assessment both formal and informal. This approach provides salient evidence but it leads to reduced flexibility in learning sequences and may fail to detect all evidence of achievement. These three characterisations and other approaches may be identified in the analysis of survey data in this study.

The exact manner in which teachers record information about student learning and what they value will be ascertained in this study. Teachers record and retain some formal and informal notes about assessment and learning, but not all informal assessment is retained in physical or digital records as it interrupts the classroom learning. Informal assessment is noted and used, but it appears to lack status when it comes to report writing where the teacher feels evidence is necessary. Clarke (1992) recommended annotating class lists, creating checklists or weekly audits as effective strategies for recording informal assessment. Other methods of record keeping may become evident in the analysis of survey information.

What do teachers consider when grading students?

Grading is the process of allocating a summative letter grade to report a student's learning. There is little research into the reporting of student learning with written statements but there are many studies of grading strategies in the literature. However, Howley, Kusimo and Parrott (2000) noted a paucity of generalisable studies on grading. Most studies describing the cognition, beliefs or behaviours around grading originate from North America including the important study by Stiggins, Frisbie and Griswold (1989) which provided evidence of inconsistency in grading practices amongst teachers. Report writing and grading have a common purpose and it is presumed that the same information sources required for allocating grades will be available to the teacher making decisions about appropriate report commentary. In Simon, Tierney, Forgette-Giroux and Charland's (2011) qualitative study, one teacher's experiences of grading were presented as a detailed narrative. The authors described the evidence of thinking, beliefs and practices presented in the narrative as "intimate" and "three dimensional" (2011, p. 538). The single case narrative approach followed by Simon et al. is also followed in this study.

Semester grading serves a number of purposes within two spheres: (a) the classroom within the school, and (b) the wider community. For the wider community, grades are seen to be indicators of future job success, of future subject performance, of suitability for promotion or access to extension or acceleration courses, and as a reflection of the effectiveness of the teacher or the teaching program (Whitmer, 1983). Within the school, grading describes student learning and teacher accountability. It commentates on teacher effectiveness, informing teachers about student progress and their own teaching and it helps students to understand their own strengths and weaknesses (Liu, 2008). Guskey (2004) adds that some teachers believe that grading can be used as an incentive for students to work hard, and as a tool to make students accountable for poor performance and behaviour.

Resh (2009) extends the personal dimension of reporting to argue that it has the capacity to shape students' self-image, motivation and expectations, both in the short and long term. It also shapes parental expectations and aspirations for their children. Within classrooms, grading can have an effect on social hierarchies, friendships, popularity and social acceptance. Grading experiences extend out to the wider

community and “inculcate important values and norms of behaviour that prevail in the wider society” (Resh, 2009, p. 317).

What measures of achievement are considered in grading?

Those who specialise in educational measurement and social commentators on education have reported that classroom teachers assess and grade students using methods that lack rigor and even include bias (Harlen, 2005). Specialists in educational assessment argue that classroom teachers are not adequately trained to grade accurately so they assess using criteria that: (a) are easy to measure, (b) emphasise recall of facts, and (c) excessively emphasise the completion of tasks (Stiggins, Frisbie & Griswold, 1989). Some educational measurement experts argue that grading should only consider academic achievement (Liu, 2008), especially if the meaning of grades is to be universally understood by people outside of the classroom environment. “Teachers’ practice of including a variety of criteria in the assignment of grades distorts grades, rendering them invalid and close to meaningless with respect to their intended uses” (Olsen, 1989, as cited in Howley, Kusimo & Parrott, 2000, p. 232).

A rebuttal to this assertion is that education measurement specialists don’t take into consideration the practical realities of teaching in the classroom and do not acknowledge that grading best practice is individualised by teacher and class (Stiggins, Frisbie & Griswold, 1989). Guskey (2006) reported that teachers actually believe grades to be an unreliable measurement of achievement. Read (1984) argued that grading can never be objective. From the perspective of the teacher who holds a relationship with the student, producing an objective grade fails to acknowledge the true learning journey of the child. Many teachers feel that their grading is more meaningful than external objective grading because it acknowledges aspects of learning beyond academic skills.

Several studies indicate that teachers consider factors such as application, lateness, ability and behaviour when allocating grades (Brookheart, 1993; Duncan & Noonan, 2007; Liu, 2008; McMillan, 2001; Stiggins, Frisbie & Griswold, 1989; Yesbeck, 2011). Brookhart (1993) reported on a meta-analysis of nineteen studies on grading strategies, and found that teachers use tests as their major indicator of academic achievement but that they vary in how they use non-achievement factors in determining grades

(Brookhart, 1994). In fact, Brookhart (1991) described grading as a “‘hodgepodge’ of attitude, effort and achievement” (McMillan & Lawson, 2001, p 21).

Cross and Frary (1986) found that most teachers felt that effort, ability and growth or improvement should be used to evaluate students. The association between grading and other factors is through a commonly held belief that “grades are earned through effort and application” (Brookheart, 1993, p. 139). Whitmer’s (1983) multi-method study of five teachers from elementary schools found that the factors which contribute to grading decisions include achievement tests, absences, completion of daily tasks, informal rating of effort and observations of classroom behaviour. Cizek, Fitzgerald and Rachor (1996) found formal achievement marks were combined with achievement related factors such as attendance, ability, participation, effort and conduct. Yesbeck’s (2011) qualitative study of interview data from ten middle school teachers identified the non-achievement factors that have the most impact on grading decisions as responsibility, effort and behaviour. This study also considered whether tasks such as homework were valid measures of academic performance or achievement.

In trying to be ‘fair’ to students, teachers considered the consequences of grading decisions on motivation, self-esteem and other social consequences (Fehring, 1998; Klapp Lekhold & Cliffordson, 2008; Liu, 2008). Klapp Lekhold and Cliffordson’s (2008) investigation of the factors that influence grades found that awarding of grades is influenced by teachers’ beliefs about the consequences of the grades, especially in the case of promotion and access to accelerated or advanced programs. In contrast, Whitmer’s earlier study found that teachers were not concerned about future and placement implications of their grading strategies when making judgements; they were focussed on the classroom functions of grading, which are motivation and feedback (1983). In Yesbeck’s study, teachers readily admitted that they do not strictly adhere to divisional or school policies and practices when making grading decisions, preferring to be flexible and responsive to individual student’s circumstances (2011, p.110).

McMillan’s (2001) study by questionnaire of 1483 middle and secondary teachers considered the impact of clusters of factors. Academic enabling behaviours, including effort, improvement, ability, participation, homework, extension work, together with external benchmarks and academic achievement had the most significant impact on grading. Factors that had little impact were grades given by other teachers, performance

in previous years and disruptive behaviour. McMillan noted that, in advanced ability classes, academic achievement was emphasised over all other measures but in standard and remedial classes additional weighting were given to non-achievement measures such as completion of homework (2001, p.28).

McMillan and Lawson (2001) conducted a study of 213 teachers from 58 secondary schools and found that there was variation in the factors that influence the way that teachers assign grades, but that differences were not linked to year levels. Liu (2008) surveyed 107 middle and high school teachers in her study of the perceived importance and usefulness of personal grading strategies and the degree to which teachers factored other characteristics into grading strategies. Liu found no significant relationship between grading strategies and level of schooling, although secondary school teachers were more likely to consider attendance and participation and to factor classroom behaviour into grading regardless of whether the behaviour was “disruptive or laudatory” (Liu, 2008, p.11).

Extensive studies have found differences by subject area in the weighting given to non-achievement factors with science teachers more likely to weight effort more highly than mathematics teachers, but less than teachers of the humanities and technology subjects such as manual arts (Duncan & Noonan, 2007; Resh, 2009). Resh posits that the emphasis on academic enabling factors in grading can be attributed to the range of contemporary and practical learning that occurs in science classes (2009, p.323). A decade prior to that study, Feldman, Kropf and Alibrandi (1998) surveyed 91 teachers to find out if there were differences in the strategies they followed for grade allocation according to science specialisations. Some differences in choice of evidence were identified between teachers of science subjects but it was noted that the assessment used was usually the conservative combination of tests, quizzes and lab work rather than project work, portfolios or journals. The study also found no significant differences by gender or experience of respondents.

McMillan summarised the factors that influence grading into four categories: academic achievement, academic enablers, use of external benchmarks and extra credit/borderline cases (2001). The extra credit and borderline cases relate to teachers’ use of contingency rules to assist with more complicated decisions (Whitmer, 1983). A

decision-tree based on Whitmer’s description of marking judgements in borderline cases is shown in Figure 2.4, and will be explained further.

Guskey (1994) proposed that non-achievement factors can be validly linked with achievement indicators depending on the learning criteria. If the learning criteria consider only the *product* then a summative grade is adequate, meaning the final score is a measure of what the students knew or can demonstrated. But if the learning criterion focuses on the *process*, it incorporates effort, work habits, participation and completion of homework into the criteria being considered. If the learning criterion is *progress*, achievement alone is meaningless without a measure of improvement.

Brookhart’s Continuum of Validity in Grading model.

Brookhart’s (1993) study of grading practices approached the investigation of grading from a validity perspective, asserting that the purpose of grading and reporting goes beyond academic measurement. In exploring what teachers intend to communicate through the grading or reporting, Brookhart (1993) devised a simplified Continuum of validity to understand the thinking in grading, especially consideration of the function of the grade and the source of justification for the grading decision. A diagram representing this is shown in Figure 2.3.



Figure 2-3 Brookhart's Continuum of Validity in Grading (1993)

The simplest part of the continuum is *Construct Validity*, an understanding of what defines the grade. The second part of the continuum is *Relevance and Utility*, which associated the student with a grade. At this stage of thinking, evidence such as effort or responsibility is being sought to assist the allocation of the grade. The third part of the continuum is *Value Implications* which considers what the grade means for particular students, specifically is the grade fair? The fourth part of the continuum of the grading is consideration of *Social Consequence*. The teacher considers what will happen because that grade is given. Relevant questions considered by the teacher would be: ‘Does the grade lead to changes at school such as trying harder or improving attitude?’ or ‘Does the grade lead to consequences outside school such as affecting the student’s

self-esteem or confidence or might it lead to a parent complaint?’ (Brookhart,1993, p.137).

Brookhart applied this continuum to interpret the data provided from a Policy Tracing task which explored the validity considerations in a series of hypothetical grading tasks. The subjects were 84 teachers working across all school levels. Content analysis of comments in the Value Implications category of the continuum, point to teachers looking for grading to be ‘fair’. Fairness was seen as looking for equity in grading all students, enforcing the requirements and being consistent. The other values identified were *Mercy* and rewarding of effort. *Mercy* was understood to mean compassion, reinforcing effort and accepting student excuses.

The knowledge that grading is more than marks gives teachers the moral authority to ignore or ‘tweak’ formal instructions for grading and reporting. Stiggins, Frisbie and Griswold (1989) noted that teachers try to be ‘fair’ to students and were concerned with motivation, self-esteem and social consequences, hence they accounted for effort and ability in grading. Whitmer (1983) also noted that teachers base their grading judgements on multiple tasks or events in order to satisfy their personal criteria for validity.

Cognitive strategies in grading.

According to Whitmer (1983) grading is a sequence of selecting, organising and inference. Other cognitive processes that are intrinsic to grading are simplification, inference through heuristics, attribution of success and failure and utility, meaning the usefulness of the mark. Ruiz-Primo and Furtak (2004) found that teachers process information from formal assessment in three phases. They gather information then interpret the results in the context of a suite of information about the student, the task and other characteristics. Once the information is compiled and sense is made of it, teachers act on the assessment information, whether by modifying teaching and learning approaches or by compiling grades or report commentary (Ruiz-Primo & Furtak, 2004).

Despite the fact that educational assessment experts argue that including other factors when allocating grades means that the grades do not truly reflect academic achievement, teachers trust in their personal interactive experiences (Dorr-Bremme, 1983). As teachers balance the roles of being both judge of and advocates for the

students, there is an 'emotional tension' during the grading process (Brookhart, 1993, p. 141). Teachers want grading to reflect student efforts fairly, hence they factor in non-achievement factors in grading (McMillan, 2001; Stiggins, Frisbee & Griswold, 1989) particularly for (a) low achieving students, (b) when students achieve a score that is on the borderline of two grades, and (c) when an item of work is not completed and may be awarded a score of zero. Achievement relevant factors are also a valuable resource for grading judgements when the summative assessment score does not fit with the expected achievement indicated from formative and informal assessment that has occurred during the semester.

Cross and Frary's study of 310 middle and high school teachers found that 72% raised the grade of low achieving students, if they demonstrate effort (Cross & Frary, 1996). Brookheart's (1993) examination of the meaning given to grades found that students with low ability were rewarded with passing grades for effort even if the numerical grade indicated a fail, but those who work below their ability were not given a higher mark than indicated by their achievement scores. Where a number of tasks can be combined to give a grade teachers are able to adjust weightings to moderate the grade, or teachers may round up marks after considering effort, perseverance, intuitive observations, and work habits.

Howley, Kusimo and Parrott (2000) considered the way effort is factored into grading strategies by comparison of the school and classroom climate, specifically comparing schools with disadvantaged or troubled student populations and mainstream school. The finding was that academic and social expectations vary with school climate and this had an impact on grading practices employed. In schools with more difficult pupils, grades were used to encourage effort, acknowledge improvement and reward compliance. Teachers may not want to be seen as a 'bad teacher' with failing students, and may seek ways to minimise the number of students below standard. Obscuring the meaning of grades misleads the recipients of reports. Also confounding effort and compliance with achievement could make grading vulnerable to race and class bias (Howley, Kusimo & Parrott, 2000, p. 232).

Whitmer's (1983) Utility Framework for Marking Judgements.

According to Whitmer (1983), when marks or results fit clearly into a grading category, then allocating a grade is straightforward because it was based only on the formal measures of achievement. A graphic is shown in Figure 2.4 to represent the Utility framework for marking judgements described by Whitmer (1983, p. 18) that was adapted from Weinstein, Fineberg, Elstein and Frasier's Clinical Decision Analysis Framework (1980). The graphic show as a *decision tree* shows how effort and cooperation contribute to marking judgements.

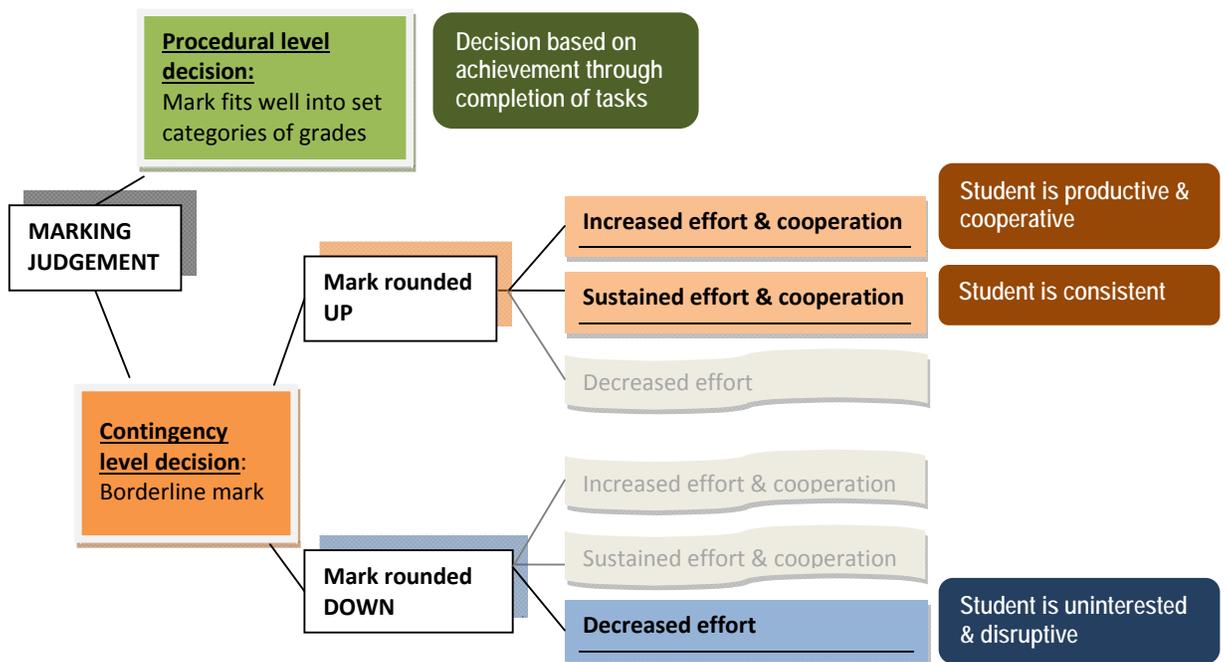


Figure 2-4 Decision Tree based on Whitmer's Utility Framework for Marking Judgements (1983).

When decisions were difficult because the result indicated a grade that was on a borderline, non-achievement factors were incorporated into the decision. The decision tree points to the association between tasks, classroom evidence and grading practices. Effort is used as the primary criterion for marking up or down or rounding up or down, with effort being judged through regular work and extra work. The rules followed for marking on the borderlines of grades, particularly the cut off between passing and failing are called contingency rules. "Contingency rules operate in a zone of uncertainty and in exceptions" (Whitmer, 1983, p. 17).

Some studies on grading strategies consider the numeric impact of non-submitted tasks or aberrant scores. A single non-submitted task can be given a zero which drags down the grade hence the grade doesn't reflect the achievement of other tasks. The teacher can give an indicative grade or neglect the score in averaging but this is also not a fair reflection of performance and it doesn't penalise the student for not-submitting all required tasks. While a single grade obscures all three kinds of issues a written report allows the teacher to explain the score or clarify the reasoning in grading. The decision to include zeros is shaped by the generally held belief by teachers that task completion results in learning (Whitmer, 1983), so without evidence of completion there is no evidence of learning.

Strategic grading decisions.

A written report needs to be honest and informative and reflect the achievement of the student as part of the class group but it also needs to be sensitive to the needs of the student and to the family circumstances. A teacher may wish to soften a report which has poor formal grades with comments that reward effort or recognise improvement. Clark and Yinger propose that teachers' decisions are influenced by implicit *Principles of Teaching* (1977, p.296), especially the principles of *Compensation* and *Strategic Leniency*. The subjects in Dorr Bremme's study expressed the need to consider extenuating circumstances, in order to pass on meaningful information about student learning (1983). In his pamphlet of advice on report writing for beginning teachers, Wooton writes: "If you know a pupil is expected to produce work of a high standard you may subconsciously be more stringent when awarding higher grades. Conversely there is a tendency to be lenient when poor work is presented by a slow or backward pupil in order to encourage or commiserate" (1993, p. 7). (The inappropriate description of student aptitude is surprising, given that it was published in 1993.) Cizek, Fitzgerald and Rachor (1996) found that grading practices are highly individualised and therefore the communication of information with parents is idiosyncratic to the point that it may be misrepresentative to parents, particularly where students are low achievers.

Research on what teachers consider when grading provides a valuable insight into the production of the worded reports used in Victoria. It is probable that all of the elements of purpose, validity, influential factors and cognitive processes and beliefs would feature in the process of formulating worded comments for a report card. Written

comments allow for brief elaboration, especially to highlight key parts of the student's learning progress. The focus on specifically describing what has been achieved seems to produce very dry comments, but comments are inevitably more informative than a single grade which obscures a lot of information about the student's learning journey.

How do teachers view parents, given that reports are addressed to parents?

O'Donoghue and Dimmick (2002) prepared a set of propositions for improving reporting following group discussions with the stakeholders in reporting: teachers, school leadership, parents and students. Amongst the findings was a concern from parents that comments were too impersonal, that they neglected social and affective development, and did not value characteristics such as creativity, divergent thinking or love of learning. These concerns were also held by teachers. The use of computer generated reports and comment databases, while not intrinsically undesirable, needed to allow for comments to be used in a more flexible way and to allow for narrative comments that show personal insights. Parents and students reported that they didn't understand the meaning of reports; they did not know how to recognise improvement or how to use the reports for goal setting, and they didn't know how to respond to poor reports. Also, teachers in the study reported that they prepared inaccurate reports at times to avoid having students experience negative repercussions from reports, both in terms of students' self-esteem and due to adverse parental responses.

There are few occasions within a semester where a teacher must communicate outside the private space of the classroom or with peers. Each teacher is required to inform parents or other responsible adults about the learning achievements and behaviour of the students. This transfer of information can occur in parent-teacher conferences, through semester reports and through less formal contact with telephone calls, emails or notes passed via the student.

According to Lasky (2000), whilst teachers enjoy the emotional labour of working with students they generally dislike the emotional labour of working with parents, who they regard as more peripheral to their work and with whom they are in a more ambivalent relationship of power. Teachers tend to hide their authentic disposition and distance themselves from parents out of concern that parents will be hostile and will challenge their professional identity by questioning their expertise and caring ideals

(Hargreaves, 2000; Lasky, 2000). Carlgren and Lindblat found in their study of nineteen Swedish teachers that teachers describe parents in two different ways. Parents may be seen to be “possible resources for teachers due to their life experiences and contacts outside school and potential support” but they may also be threatening “since they might criticise the teacher or demand the impossible of her or him” (1991, p. 513). Teachers’ perception of parents depends on their potential impact on the classroom and the teacher; parents with high status or who are well-educated, and those who assist in classrooms have a higher impact. There is little impact from parents who are rarely in contact or present at the school.

There is wide anecdotal evidence amongst the author’s peers that a teacher’s negative interactions with specific parents will contaminate the teacher’s expectations about the nature of all parent and teacher interactions. This influences teachers’ record keeping behaviours, the emotions and stress they feel in anticipation of parent-teacher interactions and their willingness to be involved in wider community activities at school. A highly experienced teacher, Mary, recounted a parent-teacher interaction to me recently. When Mary expressed concern about the students not doing homework the student’s father said, “When? You probably only checked their books once.” Mary was really satisfied to be able to show him her teacher’s chronicle and say, “I can give you all of the dates because I keep a record of them.” She followed the anecdote with, “That shut him up!” The questionnaire part of this study includes questions about parent-teacher interactions through written reports and parent-teacher conferences and it may produce some additional insights.

Teachers hold an expectation that most ‘normal’ parents will be interested and caring and will respect the teacher’s ‘expert’ judgement and professional role (Lasky, 2000). When teachers perceive that parents fit this norm, they are more likely to value parent interaction. Teachers that hold a positive attitude to parent conferences see value in fostering cooperation between school and home and also value the fact that parents can reinforce the school when students are underperforming. Parent conferences also allow the teacher to properly elaborate on comments made in the semester report providing a better basis for a common understanding of the student and their learning needs. O’Donoghue and Dimmick (2002) proposed that teachers should be explicitly prepared for oral reporting to parents in order to engender a collaborative dialogue with parents.

There appears to be no evidence in the literature of a thorough investigation of teacher's attitudes to parents as a part of the reporting process. The Victorian Teaching professional Code of Ethics specifies that teachers must respect parents through "acknowledging parents as partners in the education of their children"(Victorian Institute of Teachers, 2010c). It is hoped that further insights into the parent-teacher will be generated in this study.

What guidelines were in place for writing reports in the Australian state of Victoria?

Wootton's booklet "Could do better: Writing comments in School reports" (1992) is from a British series for beginning teachers. It is an interesting artefact because of its seemingly uncensored detailing of the kinds of verbal wisdom passed on by experienced teachers. It advises the teacher to avoid phrases such as "lazy", "could do better", "shows little interest" "talks too much in class" as parents may attribute the behaviours to poor teaching or poor classroom management (1992, p.7). It also advises the beginning teacher to follow the school's grading policy, use a "slightly distant tone" (1992, p.5) and write without grammatical errors, so that the report is consistent across subjects and it does not leave an impression that the teacher is unprofessional. Other recommendations include: be encouraging and positive, don't predict performance, don't overstate how good the work is; don't make personal comments about the student and don't write about behaviour (Wootton, 1992). Wootton writes, "important though test results may be, it is often the brief comments, written in a well known and much parodied style, that have the greatest impact upon the reader of a report ... the way the comments are written, and the sentiments incorporated in them, are important expressions of the individual care and encouragement provided by a school" (1992, p. 3).

As a school report is a public document, it is expected that the information used to generate it should be reliable and the document produced should be fair, equitable and useful to students, parents and educators. Reports must accurately communicate what students have learned and where they fit relative to the cohort and they should also lead to improvement in teaching and learning, if only through improved communication with stakeholders (Guskey, 1994, p. 17). Teacher judgements are implicit in selecting what to report on, in judging the validity of specific grades and in composing comments that

are fair and accurate (Shephard, 2008, p. 5). Either over-praising or excess criticism may mislead parents in decision making and may discourage or demoralise students (Wooton, 1992). Wilson implies that parents are less interested the specifics of what their child has learned over a semester than gaining information, either as grades or comments, to help them anticipate their child's future prospects (Wilson, 1975). Parents also rely on the accuracy and fairness of reports in order to make informed decisions about supporting their child's learning in the short term.

O'Donoghue and Dimmick (2002) collated Australian investigations from the 1980s which found that parents want a written report that gives a range of information about their child's achievement including attitudes, values and social adjustment. Parents wanted to know if their child's progress was appropriate for their age and how they fell within their specific cohort. Parents wanted clarity in how the reporting judgements were made and what criteria were applied and they also sought constructive advice about how students might improve their performance. These considerations appear to have been adopted in national and state policies on reporting.

In the Australian "National Competency Framework for Beginning Teachers" (National Project on the Quality of Teaching and Learning, Commonwealth of Australia, 1996), it states that beginning teachers should know the educational basis and role of assessment in teaching, use assessment strategies that take account of relationships between teaching, learning and assessment; monitor student progress and provide feedback; maintain records of student progress and report on student progress to parents and others responsible for the care of students (Ruby, 1996). Presumably, that is the minimum competency expected of all teachers. The competency framework doesn't specify how these competencies are achieved or expressed. These skills are presented in pre-service training but it up to the school as a workplace, to provide the structures and details through mentoring and guideline documents, and to instil these competencies within the specific context of school culture and state mandates.

The Victorian Institute of Teaching (VIT), the state teacher registration body refers to reporting in an elaboration of the eight "Standards for Professional Practice for Full Registration" (VIT, 2010a). The standards document describes the characteristics of effective teaching and amongst these characteristics are three references to reporting: "Teachers know the importance of working with and communicating regularly with students' families to support their learning"; "Teachers monitor student engagement in

learning and maintain records of their learning progress”; and “Teachers select assessment strategies to evaluate student learning, to provide feedback to students and their parents/guardians and to inform further planning of teaching and learning” (VIT, 2010b). The Victorian Teaching Profession “Code of Conduct” includes two principles relating to relationships with parents, guardians and caregivers. Those principles require that teachers maintain a professional relationship with parents and work in collaborative relationships with students’ families and communities. Principle 1.6 requires that teachers be respectful of and courteous to parents, respond to parents concerns and consider parent’ perspectives when making decisions. It also requires that teachers “communicate and consult with parents in a timely, understandable and sensitive manner” (VIT, 2010c).

The state and federal mandates on report writing vary with each new incarnation of curriculum and are influenced by wider political perspectives. There are substantial differences between the two most recent set of directives for reporting in Victoria. The Victorian Curriculum Standards Framework II (State Board of Education, Victoria, 2000) emphasised students as individuals and lifelong learners hence policy documents stated that schools would be required to implement assessment policies where assessment was integrated into learning approaches and did not emphasise comparison between students. Reporting on student progress to students, parents and others was to focus on success and achievements both in knowledge and behavioural skills and in learning life skills (Scott, 1988).

In contrast, the *Student Report Card*, in place in Victoria since 2007, required that report cards give parents a clear picture of their child’s work habits and progress against their cohort and against expected standards. The reports were to be written in plain language and describe recommendations for improvement as well as achievements (DEECD, 2006d). Whilst both approaches emphasise a positive perspective on achievement, the old reporting approach emphasised the student’s personal progress towards mastery of skills, while the new student report card indicates the student’s achievement relative to others. In the new report card behavioural skills are deemphasised but the requirement for student and parents to contribute to the report document diverts the process from informing to collaboration.

To report against the Victorian Essential Learning Standards, teachers need to consider a range of standards that cannot be assessed using formal summative methods.

Some standards refer to affective skills, such as “show appreciation of ...”, and some standards are subjective, for example the student “communicates effectively” (Victorian Curriculum and Assessment Authority, 2007). One example of a standard that would be difficult to assess would be from Level 5 in the Interpersonal learning domain; the standard indicates that students should “demonstrate respect for the individuality of others and empathise with others in local, national and global contexts, acknowledging the diversity of individuals” (VCAA, 2009, parag.2 [level 5]); It is difficult to formally assess characteristics such as empathy.

Some standards are practical skills which must be physically observed, since their performance is not evident in the final product. Also some standards refer to skills that are part of the process, such as drafting and editing text. These cannot be determined without progressive observation of the task as it is conducted. The complexity of the VELS standards requires assessment to address various aspects of each task and more than one task or attempt may be necessary to constitute evidence of achieving the outcome. Assessment that properly addressed all of the standards would be very onerous for both students and teachers. Moroney and Olssen (1994) note that in general, teachers need to look for evidence of achievement through observation in a range of tasks or contexts and this is certainly the case for assessment in Victoria in the period 2007 - 2012.

There are a number of levels of guidelines on reporting for teachers in place in Victoria during the time of this study. They include professional guidelines, state education department mandates, federal mandates through funding arrangements and the instruction in place in individual schools. The most significant guidelines are the state reporting mandates and those guidelines set in place within particular schools.

Summary

Over thirty years of research has compiled a complex picture of teaching where the individual teacher will hold a range of knowledge some of which is common to his or her peers and some which was shaped through beliefs about teachers and schools and through individual and ongoing experiences of being a teacher. Professional knowledge shapes the judgements and decisions that teachers routinely make and provide the scaffold to facilitate decision making in complex and difficult situations that require a

rapid response. It is also important to consider the role of context and internalised reflective knowledge in the relationships and tasks that allow for the performance of the job. It is the complement of knowledge, judgement, emotions, identity and actions that should be made visible in understanding the task that is report writing, within the four levels of the Teaching as a way of being model.

Of the models produced to explain aspects of cognitive information processing, Shavelson's Cognitive Model of teacher judgement and pedagogical decisions (1978) offered a rudimentary approach to explaining the kinds of thinking strategies that occur and the influencing factors that impact on decision making in report writing. In the absence of specific research into report writing strategies, research on grading strategies indicated that teachers collect copious amounts of information and analyse the information and make inferences about information, to see how the information fits with existing knowledge about students. Teachers' value more than academic scores and may reward effort as well as achievement through grading strategies. When it comes to writing reports, teachers give more weight to written evidence of achievement, but their knowledge of the student, their circumstances and their ongoing performance will shape decisions made about wording, to allow for the principles of compensation, strategic leniency, power sharing, progressive checking and compensation.

Report writing is an important and poorly studied element of teaching practice. It is important because it matters to all of the stakeholders in the learning process: students, parents, teachers and the school. Teachers approach report writing with care due to the difficulty of the process, their sense of responsibility to students, their accountability to parents and the impact of reporting on their personal sense of professionalism.

Chapter 3. Research Methods

Overview

This chapter commences with an overview of the research design for this case study. It describes details about the implementation of the questionnaire phase of the research including the features of the target population, the development of the questionnaire, details of its distribution, methods of analysis of the data gathered and the quality of the data. An outline of the features of the Process Tracing task follows. Information is provided about the participants, the sources of qualitative data in the process, the methods of analysis of the data gathered and the reliability of the data. The chapter concludes with a consideration of ethical issues arising from the study.

Research Questions

There are four overarching research questions and ten specific questions addressed by this study. The overarching questions are: What is the professional knowledge base required to perform the tasks in semester report writing?; What decision making and reasoning occurs during the report comment writing process; What contextual factors influence the process of reporting?; and How does a teacher in Victoria in 2008 - 2012 experience the process of composing reports using the Student Report Card format?

The specific questions are:

- 1a. How are formal records of student achievement retained for future reference?
- 1b. What informal information about students and their learning is available from formal assessment and collected over the reporting cycle?
- 1c. How do teachers provide feedback to students and is the feedback retained as evidence of learning?
- 2a. Do formal grades alone provide sufficient information for teachers to compose valid report comments?
- 2b. What teacher thinking is evident in the written report comments and verbalised commentary of report writing for a small number of hypothetical students?

- 3a. Do the schools described by respondents to the questionnaire comply with the Victorian Government reporting mandates and what other organisational factors shape reporting?
- 3b. Do teachers believe that they know their students and this is sufficient evidence for report writing or do they believe that they need to accrue evidence to justify reporting decisions?
- 3c. Are evidence collecting behaviours or other aspects of the teaching context associated with a collaborative or a confrontational attitude to parents?
- 4a. What other factors influence teachers' thinking during the report writing process?
- 4b. How does informal knowledge of students and their learning contribute to the report comment writing process?

Research Design

The phenomenon of report writing in this case study was investigated using a multiple phase multi-method approach. From the possible participants, teachers of science in Victoria in 2008, a sample of 97 teachers completed a questionnaire to survey attitudes and behaviours about report writing. From this sample four respondents agreed to write reports for seven hypothetical students, verbalising their thinking while completing the Process Tracing task. The third element of the student is a descriptive account of one teacher's experiences of report writing.

Each phase is related to subsequent phases using a *Parfocal approach*, as indicated in Figure 3.1. The term parfocal is used to describe the performance of a precision optical device. The field-of-view observed through a microscope is inversely proportional to magnification, so the smaller the field-of-view the greater the magnification. Parfocal lenses allow the technician to increase magnification without losing focus on the subject. In this study, the object in focus is the experience of report writing.



Figure 3-1 Parfocal Character to the phases of the Study

Data types and Analysis strategies

As this study includes a combination of qualitative and quantitative methods within different phases of the research process, it would be defined by Tashakkori and Teddlie as a *mixed model* study (1998, p.19). Patton (1990) classified mixed model studies on the basis of the way that qualitative and quantitative approaches are combined in the design, data measurement and data analysis phases of research. Creswell (1995) points out that mixed methodology allows the researcher to utilise the advantages of both qualitative and quantitative methods. This case study benefits from the statistically grounded insights and the rich qualitative analysis.

The multiple and mixed method approach used in the study is detailed in Table 3.1. The questionnaire generated quantitative data and some qualitative data. Descriptive statistics were used to summarise the findings of the questionnaire. The Process Tracing task generated several sources of qualitative data about the phenomenon of report writing. The written report comments were *quantitised* to allow statistical comparison between respondents. Content analysis of the transcript commentary, interview comments and narrative text was used to identify themes and thematic network analysis focused on patterns of thinking, clarifying contextual influences and identifying global themes. The combination of data sources about the phenomenon also allowed for cross validation of the data.

Table 3-1 Sequential Mixed-method Analysis Approach to Data generated in this Study

Data type	Analysis strategy	Data use
<i>SURVEY BY QUESTIONNAIRE - addressing Research Questions 1a, 1b, 1c, 3a, 3b, 3c</i>		
Closed questions	Statistical analysis: descriptive statistics, correlations	<ul style="list-style-type: none"> Qualitative data will produce a normative description of behaviours of experienced teachers
Open-ended questions	Content analysis	<ul style="list-style-type: none"> To contribute to a description of reporting behaviours
<i>PROCESS TRACING TASK - addressing Research Questions 2a, 2b, 3a, 4a, 4b</i>		
Written report statements	Data will be converted into ordinal values and descriptive statistics generated	<ul style="list-style-type: none"> To compare reports composed by different participants To help establish internal validity
Transcript of verbalised thoughts	Content analysis for emerging themes	<ul style="list-style-type: none"> To produce a model of cognitive processes in report writing
Transcript of follow up interviews	Thematic analysis using network diagrams	<ul style="list-style-type: none"> To contribute to the clarification of themes in the task
<i>FIRST-PERSON NARRATIVE - addressing Research Questions 1a, 1b, 2b, 4a, 4b</i>		
Narrative	Thematic analysis using network diagrams	<ul style="list-style-type: none"> To clarify characteristics of sociocultural context

The phases were separate, but the results of the survey together with the theoretical background, helped to refine the Process Tracing task and the data gathered through the questionnaire helped to contextualise the data generated in the Process Tracing task. The combination of statistical and content analysis strategies used were appropriate to the data set and the research questions. A general description of the phenomenon of reporting as wise practice was created using the four perspectives of teaching that make up Feldman’s Teaching as a way of being (1997).

There is a paucity of academic studies on the process of report writing, in part because there is substantial variation in how reports are presented across Australia and the world. The absence of prior research did not allow for the implementation of established research methods and did not permit the prediction of findings for either

phase of this study, hence the study is essentially investigative or interpretive and the findings are descriptive. The qualitative data allowed for a reflective analysis of the phenomenon of report writing through the lens of the authors professional experience in the role of teacher. The quantitative data provided descriptive statistics that generated a picture of the diversity that is possible in teacher reporting behaviours as well as a description of the behaviours that were common to that group of science teachers. The sequencing of methods in this case allowed for the findings of the survey to inform the structure of the process tracing task. The process tracing task focused on the individual subjects, not as representative of the wider group that are science teachers in Victoria, rather that the subjects fall into the continuum of experiences that are reported by the group that completed the survey.

Multiple Method approaches were used in all of the studies utilising Feldman's Teaching as a way of being (1997) approach including Acheson (2003), Brown and Melear (2006), Feldman and Weiss (2010), Keys (2008), Salloum and Abd-El-Khalick, (2010) Verjovsky and Waldegg (2005). Other studies investigating aspects of teacher cognition in grading also utilised Multiple Methods, including Process Tracing exercises (Allal, 1988; Whitmer, 1983).

The Survey

The community of science teachers in schools in Victoria were surveyed by questionnaire during 2008. The questionnaire (Appendix 1) asked a series of questions to collect information about the range of informal assessment and record keeping behaviours of secondary science teachers. The survey gathered data about gender, experience and school setting and opinions about parent-teacher conferencing, the value of information categories in reports and the reporting tasks undertaken at their school.

Target population, the sampling method and the sample.

The target population was teachers in Victoria, who taught Science during 2007 or 2008, and who had more than one year of teaching experience. Having achieved full teacher registration indicated that the respondent had completed the teaching and reporting process twice and was likely to have attended at least one parent-teacher meeting session. These experiences were necessary to allow the respondent to answer questions that relate to these reporting experiences.

Permission to approach schools to distribute questionnaires to teachers was sought from the Victorian Department of Education and Early Childhood Development and the Catholic Education Offices in Melbourne, Sale, Sandhurst and Ballarat. Following receipt of permission from these bodies, letters were sent to Principals asking for permission to distribute questionnaires to science teachers through the Head of the Science Department (Appendix 2). Requests were sent directly to the principals of independent Schools.

Lists of schools were obtained from the Victorian Department of Education and Early Childhood development website, from the Catholic Education Offices in Melbourne, Sale, Sandhurst and Ballarat, and from the Association of Independent Schools in Victoria website. In each list, letters were sent to every third school. Two hundred and sixty six schools were approached. Eligible schools could teach to a student body at years P–12, P–10, 7–10 and 7–12 or years 11 and 12 only. The letter of request to the principal was dispatched with a copy of the approvals from the Ethics committee, the relevant education bodies and a copy of the questionnaire, with a return envelope. The package of documents was sent to government, systemic Catholic and independent schools in metropolitan Melbourne, in rural centres and in regional cities, in representative proportions. For example, 89 surveys went to government schools in the Greater Melbourne area and 23 went to independent schools in regional centres. The details of the surveys submitted are shown in Table 3.2

Table 3-2 Distribution of Questionnaires to Schools by Region and Sector

Sector	Region	Schools approached (n)
Government	Rural or Regional: Barwon, Wimmera, Gippsland, Goulburn, Mallee	50
Government	Melbourne: Eastern, Western, Southern, Northern	89
Independent	Rural or Regional	23
Independent	Melbourne	34
Catholic Systemic	Ballarat, Sale and Sandhurst Diocese	29
Catholic Systemic	Melbourne	41

Positive responses were received from 21 schools and negative responses were received from six schools. Most of the negative responses cited the heavy time demands on their staff or considerable prior participation in survey research. The Head of the Science Department from 14 schools sent a request for additional surveys for other members of their department to complete. A total of 92 additional surveys were dispatched to these schools.

After four weeks, a reminder letter with an additional copy of the survey was dispatched to the Head of Science Department at all schools, other than those six school's whose principals indicated that staff were not able to participate. An additional request was sent to forty of those schools that had not responded after four months. An invitation to participate in the research was also distributed through the email register of the Science Teacher's Association of Victoria. A number of potential respondents indicated that they would prefer to complete the survey in an electronic format, so the questionnaire was transcribed directly into a commercial survey site called Survey Monkey and the responses were secured by encryption using SSL. These responses were later downloaded as an encrypted Microsoft Excel spreadsheet. The data encoding structure set up by Survey Monkey was used for subsequent coding of all data into the spreadsheet file. This made the data suitable for analysis using the statistics software package SPSS.

A total of 358 questionnaires were distributed, with 38 responses provided online. The final sample size of 107 gave a response rate of 27.0%. This response rate, relates to the number of questionnaires made available to Science teachers in schools and it does not indicate a response rate from the community of Science teachers. A response rate of between 20% and 36% was found in a number of studies conducted in Australian schools, where the protocol for seeking approvals through education departments and Catholic education offices were followed (Dinham & Scott, 1997, 1998; Goos & Bennison, 2008; Walsh, Bridgestock, Farrell, Rassafiani & Schweitzer, 2008). Higher response rates could be attained in studies where teachers were purposefully sampled, where there was convenience sampling, where studies were associated with larger research projects, where inducements were offered and where direct contact and follow-up contact was made (Nulty, 2008).

Walsh, Bridgestock, Farrell, Rassafiani & Schweitzer's (2008) study of Queensland teachers had a 23.6% response rate. It is also interesting to note that 86.2% of respondents in that study were female, in the age range 41 – 50 years and with an average of 15 years of teaching experience; these are characteristics that seem to coincide with the most common group of respondents in this study.

Questionnaire development.

The questionnaire was devised by the researcher. In the manner of many survey instruments, it gathered non-identifying descriptive data about participants and then gathered research information. Questions styles included a checklist, ranking tasks and Likert scales relating to attitude statements as well as open-ended questions. Some of the questions asked clear-cut questions about teachers' behaviours. Other categories of data were generated through informal discussion with experienced teachers and by reference to compilations of studies on teacher judgements (Shavelson, 1983; Shavelson and Stern, 1981). The questionnaire was piloted and refined before distribution; a number of suggestions were made about wording and the clarity of the ranking task. In its initial form the ranking task asked respondents to rank all of the sources of information, but through the process of piloting it was determined that this was irritating and took too long. The expression 'recorded notes or comments' replaced the term 'written records' in the document. Those who piloted the survey noted the time taken and in all cases it was less than 15 minutes.

The first questions asked the respondents to identify their teaching sector and the level of students that attend the school. This information was relevant given the diverse implementation of curriculum and reporting changes. It was not relevant to ask about the general location of the school as this could be identifying information given that there are a smaller number of Catholic and independent schools in regional areas.

The questionnaire sought information about teachers' gender and years of teaching experience, as these categories were explored for correlations with professional behaviours reported in later questions. The questionnaire asked the teacher to identify the year levels that they taught science to in 2008. This allowed the data to be investigated in terms of those teachers who have taught under the new curriculum at years P – 10. As this may correlate with reporting behaviours, it was used as a category for statistical analysis.

Questions six to nine asked about how the respondents' record of assessment information and then asked about the kinds of informal information that was recorded over the semester. Question 10 asked how the respondent provides feedback to students. Question 11 was a bank of statements about another category of professional knowledge – knowing students. Respondents were asked to rank their agreement with the statements using a five level Likert scale, ranging from strongly disagrees to strongly agree. These questions relate to Research Questions 1a, 1b, 1c and 3b.

The mandated reporting to parents does not include interim or mid-semester reporting; however this is carried out in many schools. Question 12 and 13 sought information on the nature of and prevalence of reporting more frequently than the mandated levels and this addressed Research Question 3a.

Another mandated element of reporting to parents is the provision of an opportunity for parents to discuss their child's progress with the teacher. Question 14 asked about the respondent's preparation behaviours and attitudes to parent-teacher meetings. This block of attitude statements, had both collaborative and confrontational orientations. This data related to Research Question 3c.

The final question set was a ranking task, asking teachers to contrast what kinds of information they believe parents value with the kinds of information valued by teachers.

This information was sought to provide additional insights into the qualitative data generated in the Process Tracing task.

Data analysis procedures.

The method for analysis of the survey data was refined after the data collection was complete. Data collected using the online questionnaire was automatically entered into a spreadsheet which could be opened in Microsoft Excel. Additional survey data was added to the spreadsheet file. The spreadsheet was readily opened using the statistics software SPSS. Analysis was completed using both Excel and SPSS. Qualitative data was searched to allow content analysis using Excel and simple qualitative analysis was readily completed as in most cases there were few additional comments.

The questionnaire data were initially subjected to appropriate descriptive statistical analysis using SPSS and open-ended questions were analysed for common themes. In order to describe the range of reporting behaviours, data were explored through measures of central tendency, dispersion and variability. Despite the limits to generalizability, measures of association between variables such as characteristics of teachers and categories of reporting behaviours were also determined using appropriate non-parametric statistical tests.

Quality of the data.

Although a random sample of teachers were sought for participation in this study to produce a representative sample, it became clear that the teachers who agreed to participate and who completed the survey could not be considered as representative of the wider population of teacher in Victoria during 2008. Superficial investigation of the data showed that the cohort was strongly skewed towards teachers who have more than ten years of teaching experience. There were few responses from early career teachers. One hundred and seven questionnaires were returned or commenced online; however, nine were excluded from the body of the analysis because they were incomplete.

There was no means for collecting information about non-participation in the study, other than the three principals who would not give permission for their teaching staff to participate. Reasons cited by principals in their correspondence were the already substantial time commitments of their staff and the school's current participation in

other programs. It may be that teachers are frequently unwilling to participate in research for reasons including: limited free or discretionary time given the nature of the teaching profession, extracurricular commitments and expected additional commitments to continuing professional development and meetings. In 2008, there were further time commitments to planning and documenting curriculum changes required during the implementation of the new Victorian Essential Learning Standards.

It is difficult to predict whether the characteristics of the sampled population are unique to the sample and therefore the findings of the study are undermined. It may be argued that the characteristics identified in the sample of respondents must be common across the profession as the strategies identified facilitate tasks that are common to the wider population of teachers in Victoria. It is feasible, however, that this group of teachers, because they were willing to assist with the research task, also display more care in all of their professional tasks.

The method of distribution of surveys means that: (a) it is not possible to know whether the Heads of Department received the request and chose not to participate, (b) it does not indicate whether Heads of Department offered the questionnaire to other members of the department (c) there is no indication of the characteristics of those who responded as opposed to those who did not. It is clear, that most teachers are more likely to choose not to complete the survey; hence the respondents to the survey are atypical. They may be more interested in education research, or have other altruistic reasons for participating. They may have more free time or may be more prepared to make time to participate.

In one school, the survey was used by the Head of Department as an introduction to a discussion about reporting strategies during a faculty meeting, and this school was a source of ten surveys. The most significant feature of the sample set is the high proportional representation of teachers with more than 15 years of experience, suggesting that many of the responses came from the Head of Department who received the questionnaire and answered it themselves, either because they did not follow the instructions or because no other member of the department was willing to participate.

The Process Tracing Task

Shavelson (1983) described Process Tracing amongst a characteristic set of methods used for research on teacher's judgements and decisions. Other methods include Policy Capturing, Lens Modelling, Stimulated Recall, Case Study and Ethnography. A Process Tracing task is one where the subject completes a task while vocalising their thoughts about the task. This verbal protocol is then content analysed or used to create a flow chart modelling the thought processes identified (Shavelson, 1983).

Think aloud protocols such as Policy capturing and Process tracing are used effectively for problems solving activities, such as those that involve applying existing knowledge to unfamiliar situations (van Someren, Barnard, & Sandberg, 1994). They are able to identify the intermediate thinking between a structured problem and an output. The protocols are effective for differentiating between the strategies of different individuals or between the thinking of one individual in different circumstances. According to van Someren, Barnard and Sandberg, specific cognitive strategies such as perception, construction and accessing long term and working memory may be able to be identified in a verbal protocol (1994, p. 19). There are several ways that verbal protocols can produce poor quality data. The subject may have memory errors, may interpret the data in an unexpected way or may be distracted, resulting in invalid or incomplete data. In the specific case of Policy capture or Process tracing, verbalising thoughts may be difficult for the subject, especially for the first minutes, however, it is thought that as the problem solving becomes engrossing the subject is less likely to self censor or interpret thoughts as the task occupies all of the conscious effort (van Someren, Barnard, & Sandberg, 1994, p. 26).

For the Process Tracing exercise, participants were asked to compose a written statement to accompany the formal grades for seven hypothetical students. The participants were provided with a one page statement listing formal grades in the form of raw scores for topic tests, practical reports and assignment tasks. Some information in the form of brief phrases and sentences describing informal observations written in a handwriting font was also supplied for some of the hypothetical students. Some verbal information about motivation and ability was also provided to supplement the statements for some cases. This set of information is presented at Appendix 3.

The participants were asked to compose the report statements by selecting comments from a limited comment data base contained in a Microsoft Access. It approximated some features of the interfaces seen in reporting software packages used in Victorian schools. A screenshot of the interface is shown in Appendix 4. Respondents selected from comments ranked in categories relating to the hypothetical assessment tasks provided in the notes. Respondents were also able to compose or modify comments. Lists of the comments provided in the comment data base are presented at Appendix 4.

Process Tracing was the most appropriate research strategy for this study because the verbalised thoughts collected as the written report was being composed was more likely to capture evidence of cognitive processes. It was assumed that the verbalised thoughts accurately reflect the cognitive processes of the subject, assuming that the teacher was able to articulate their thoughts and was willing to express them (Shavelson, 1983). While a retrospective explanation of the reasons for composing the student report comment in a particular way may be modified as a response to observer effect (Tashakkori & Teddlie, 1998), if the respondent was thinking aloud while completing the task there would inevitably be a better association between the reasoning and the response.

Stretches of silence during the task were indicative that the subjects was internalising their thinking about the task. Thinking aloud tasks may also be slower or incomplete if the subject was required to restructure information as they spoke (Ericsson & Simon, 1980) hence pauses and paralogical information were noted on the transcript of the task. In order to minimise participant reactivity (Tashakkori & Teddlie, 1998), the researcher left the room while the subject completed the task, hence gesture and other body language elements could not be noted. The researcher felt that the subject would feel self-conscious when talking aloud and being present in the room would heighten the subjects' awareness of being studied. The Process Tracing task was followed with a semi-structured interview to capture observations about the process made by the respondents. It was intended that evidence of intentional misrepresentation of the thinking strategies in the task or participant reactivity, observer effect (Tashakkori & Teddlie, 1998) or other effect that may impact on the trustworthiness of the results would be made evident in the interview at the conclusion of the task, or in inconsistencies in the qualitative data.

An additional benefit of this approach was the fact that the transcript and the written report statement were able to be compared to check for internal validity. The written report statement could also be compared between participants to readily pinpoint characteristics that contributed to the personal practical knowledge of individual respondents. There was also the possibility that reports would be very similar or very different.

The subjects.

Nine respondents to the questionnaire returned slips that indicated that they were willing to participate in the second stage of the research. However, five withdrew due to a change in employer, a change to family responsibilities and unknown reasons. The four respondents to the Process tracing task were all experienced teachers, and three held positions of responsibility in their schools. The respondents came from a variety of school settings – a government co-education secondary school (7-12), a government single gender school (7-12), an independent school (P-12) and a Catholic systemic school (7-12). Three of these schools were metropolitan and one was a regional schools. One of the respondents was male and three were female. These subjects are not considered representative of the wider population of school teachers. As this study aimed to investigate aspects of the personal professional knowledge of this sample of teachers, their school setting was relevant. Subject 1 taught at a metropolitan government school, Subject 2 taught at a metropolitan Catholic systemic school, Subject 3 taught at a rural government school and Subject 4 taught at a metropolitan independent school.

Data sources.

The Process Tracing task provided very rich data. The three sources of data were: (a) the written comments selected or composed into the Markpad database file, (b) transcripts of the verbalised thoughts of the participants while they completed the writing of the reports, (c) transcripts of the semi-structured interview conducted at the end of the task.

The Process Tracing task was devised by the researcher. It was decided that the following considerations were necessary when devising scenarios for the hypothetical students: (i) Students needed to be gender neutral, to avoid respondents associating the

information with specific students or gender stereotypes, hence the names have no gender association; (ii) a variation in the amount and quality of information should be provided to assess whether there was a minimum amount of information that would prevent teachers from being able to compose a report; (iii) some of the information needed to be subjective and some needed to be concrete and able to be associated with clear divisions of poor and high performance; (iv) some of the reports needed to be consistent and some needed to have an inconsistency to determine how much weight is associated with an overall trend and an exception. A decision to compose seven sets of hypothetical information was a compromise between presenting the variation of data sets and ensuring the task was not excessively long. The task was piloted and subsequently refined. In the pilot phase, teacher peers trialled the use of the database and assessed whether the database was appropriate for the task.

A script was devised to ensure that all instructions were given to subjects and to ensure the experience was uniform for all subjects. The script also made sure that all points requiring clarification with respect to the method were addressed. It was made explicit that the subject could write text of their own choice or modify comments, that the hypothetical student could be completed in any order and that the report could address some or all of the information about performance on assessment items. The script is presented as Appendix 5.

The seven students were presented with only scores (Students 1 and 4) or scores and brief written notes (Student 7) or scores with or without written notes and two pieces of salient information that were only provided verbally to the respondent (Students 2, 3, 5, 6). The additional notes were deemed to be informal information and the provision of information verbally was included to determine if informal information was more authoritative when recorded on paper. This was not an effective strategy as the respondents viewed both verbal and written information with equal authority in this process tracing task; in the absence of any other information about the student the veracity of the comments was apparently accepted.

The hypothetical students were constructed to elicit evidence of the use of contingency and procedural level decisions as described by Whitmer (1983) and to identify evidence of the principles of Compensation and Strategic Leniency as described by Marland (1977). Students 1 and 5 were presented with marks that placed

them clearly in grading or ranking categories. The other students were less consistent or their scores were 'borderline' hence the evidence of effort and behaviour provided would assist the respondents in making Contingency level decisions about comment ranking.

Data analysis of written comments.

The composed report statements were coloured and coded to indicate an ordinal categorisation of the report comments. As the comments were not restricted to those made available in the database, the ordinal categorisation was completed using descriptive adjectives as coding cues in line with the comment set input into the database for the task. This enhanced visual comparison of the similarity between comment statements. Quantitisation of comments allowed them to be analysed statistically. The written comment statement indicated the elements of the set of data that were emphasised, prioritised or included for all hypothetical students. The written comments were also assessed to identify if informal information presented to respondents featured in the final comment.

Data analysis of voiced thoughts and interview data.

Analysis of interview and voiced thoughts follows the multiple step phenomenological analysis approach outlined by Hycner (Cohen, Manion, & Morrison, 2007, p.370). Hycner emphasised the importance of allowing themes to emerge from the interview data, rather than fitting the data to predetermined themes. The initial stages of phenomenological analysis include accurate transcription including non-verbal and paralingual information and listening to the entire audiotape several times to ensure that the researcher really understands the subjects expressed thoughts. This scrutiny of the collected data allows the researcher to delineate units of general meaning that are reduced to units of meaning relevant to the research questions. Units of meaning are clustered and redundancies are eliminated. The clustered units of meaning then lead to the identification of themes. Hycner advocates verifying the accuracy of the themes by writing summaries, consulting with the subjects and modifying as necessary. Commonalities and differences between subject data sets lead to a composite summary of findings which puts the themes into the context of the phenomenon.

Hycner's approach was implemented in the following way: The audio recorder was set to record as the researcher provided instructions. It was able to capture questions about the method that occurred to the participants as instruction was provided. The audiotapes continued to record while the subject wrote the reports and responded to the open ended interview questions at the end of the task. The audiotapes were played back to enable transcription. The researcher replayed the tapes several times to ensure the accuracy of the transcription and to ensure that nuances in voice and pacing were well understood. The text was labelled into units. As a substantial portion of spoken word during the process tracing task was the subject reading the comments provided in the comment database to clarify meaning, these *read statements* were dropped from the analysis, although in cases where the subject reworded the statements, the comment was retained. The units of meaning were grouped, reviewed and summarised as described in Hycner's approach. The content analysis records for Respondent 3, together with complete transcripts are presented as Appendix 14. The themes evident were compiled with the results of the analysis of written comments to look for trends in preparing report comments. At this point the data was downloaded into ATLAS.ti qualitative data analysis software (ATLAS.ti_GmbH, 2009). Frequency analysis of responses identified common themes and these were further analysed using a thematic network diagram approach as described by Attride-Stirling (2001).

While the researcher undertook single person coding of the transcripts, rather than having an alternative coder, the results of the coding were sent to the subject for verification. There is still a possibility that the data could have been coded differently but establishing subject agreement with the coding provides a good measure of the trustworthiness of the findings (Tashakkori & Teddlie, 1998).

The Process Tracing task was followed immediately by a semi-structured interview to reflect on the experience of participating in the task and their experiences of reporting. The semi-structured interview questions are provided as Appendix 6. Transcripts of the semi-structured interview questions were also included in the qualitative analysis process undertaken in Atlas TI and are part of Appendix 14.

Researcher-Practitioner Narrative

A teacher, other than the researcher was approached to describe their own report writing experiences through an informal interview. These were summarised into a

descriptive paragraph. The summary was returned to the subject to ascertain whether the summary was an accurate reflection of their feelings and experiences. The summary was modified to include the changes nominated by the interviewee. This verification step improved the validity of the summary. This data gathering process was described by Black and Halliwell (2000). All references to the narrative were then rewritten and re-analysed and direct quotes from the interview with the subject were reported where relevant. The original transcript is provided in Appendix 14.

According to Ball, first person writing about an education phenomenon is a legitimate method in the domain of 'inquiry in teaching' (2000, p. 365). The research design needed the use of a resource to probe the relationship between behaviours, attitudes and a specific sociocultural context. Including the narrative offered an opportunity to describe reporting practices with the researcher's perspective, ensuring that a specific context is thoroughly considered. The narrative was written by typing into the word processor in a single setting without drafting or rephrasing. It was written following the first semester reporting cycle in 2012. Whilst subsequent review would have allowed for further elaboration, this was not done in order to preserve the emphasis and detail of the original account.

The benefit of analysing the narrative with the researcher's perspective is attention to the elements of context that are not apparent to the practitioner; for example, I wasn't conscious of the Submission of Work Policy acting as a constraint on the reporting process, nor had I considered why I keep so many bit of paper with notes about the students, until I wrote the account. The value of interpreting the narrative with a participant's perspective is that any aspects of context not described are still available to the researcher during the analysis of the narrative. Ball writes: "*Because teaching and learning are deeply personal – that is, they are in fundamental ways relational and about persons – approaches to scholarship that use the personal as a resource offer the possibility of insights that are more difficult to gain from an outsiders' perspective*" (p. 392, 2000).

In this particular case study, insider knowledge of the experience of implementing the new curriculum and reporting format was beneficial for grounding questions, recognising less obvious elements of context and practice and for providing practitioner insights in the analysis of data (Ball, 2000). The inclusion of the first-person narrative

does not diminish the findings of the questionnaire or Process Tracing task, as they provide most of the data for the study, they represent the broader perspective on report writing and they have been examined from the more disengaged paradigm of the researcher. Nor does the inclusion of a unique narrative alter the interpretation of the findings. In fact, the researcher-practitioner voice was already present in the research design and is evident throughout the thesis as pride in the role of teacher, accounts of experiences in schools, acknowledgement of teacher emotion and the selection of way of being as a framework for the description of report writing, since it was perceived, by the researcher to be the most authentic model to the reality of teaching science within a secondary school.

Reliability, Validity and Fidelity

The response to the questionnaire was neither sufficiently large nor sufficiently random to ensure that the findings of the study are reliable for the population of science teachers in Victoria in 2008; hence no claim for generalizability will be made. The questionnaire part of this research project aimed only to generate a snapshot of the kinds of behaviours that are present within the population of teachers of science in the State of Victoria in 2008. These findings were not comprehensive or exhaustive, but they capture information about the phenomenon of report writing at that point in time.

Attempts were made to ensure that the information collected was reliable. Trialling the questionnaire helped to ensure that the questionnaire was phrased to explicitly ask for the desired information and that the phrasing was unambiguous.

No claim could be made as to the external validity of the findings of the questionnaire; however, internal validity was established through the application of statistical tests to determine measurement reliability (Tashakkori & Teddlie, 1998). The validity of the information generated was improved through the use of data and method triangulation, participant feedback and peer review. Internal consistency reliability coefficients were calculated to support the selection of the best quality information in attitude scales.

Internal validity in qualitative research is regarded as the measure of the match between the categories and themes identified by the researcher and what is actually true (McMillan, 1996), so to establish this confidence in the findings, the results were

provided to the Process Tracing task subjects for verification, comment and modification. Also, according to Tashakkori and Teddlie (1998) and Cohen, Manion and Morrison (2007) confidence in the validity of findings is enhanced when more than one method of analysis of the data is being conducted.

Commentary on emerging research methods in education, also indicate that fidelity or trustworthiness and authenticity approximate the requirement for reliability and validity in new paradigm studies. Lesh, Lovitts and Kelly write: “*If the goal is to produce a description of a complex system, then truth and falsity may not be at issue as much as fidelity, internal consistency*” and other characteristics that describe a ‘good’ portrait (2000, p. 20). The trustworthiness of the description of reporting produced has been supported by the reception of the findings by participants and practicing teachers, although this has not been recorded in this document. There was an appropriate consistency between descriptions of behaviours in the questionnaire and the narrative and consistency between the written comments and the transcript of verbalised thoughts, and this is discussed in Chapter 7. While generalizability cannot be established in this study, credibility, dependability and transferability (Taylor, Taylor & Luitel, 2012, p.377) have been established through the compilation of the description of report writing and it and is discussed in Chapter 8.

Ethical Considerations

The study was submitted to the Curtin University for Ethics Approval using form *C: Application for Approval of Research with Minimal Risk*. Approval was received on 7 April 2008 (Appendix 7). The process of recruiting participants required approvals from the Department of Education and Early Childhood Development (Appendix 8) the Catholic Education Office – Archdioceses of Melbourne, Sale, Sandhurst and Ballarat (Appendix 9) and individual principals. These were all received and copies were made available to the principals of schools and other requirements for information were complied with.

Participants in the first part of the study were asked to complete a written questionnaire about their opinions, teaching practice and non-identifying demographic and professional characteristics. Informed consent was sought after participants were provided with detailed information about the purpose of the study, the research method, the nature of their contribution and how the data was to be stored. They were assured of

their right to withdraw from participation in the study. Informed consent documents are provided as Appendix 10. The questionnaire was as concise as possible to minimise inconvenience to the participants.

As the participants were asked to describe their record keeping practises there was a possibility that comments about student behaviours and grades may breach the Right to Privacy of students. Participants were asked to respond generally and not to refer to specific students in responses.

Participants in the second phase of the study were asked to be available for up to one hour. Participants in research where decisions and opinions are to be scrutinised may feel uncomfortable about the scrutiny or about being recorded. Interviews were conducted at schools at convenient times for participants. Informed consent was sought from participants. Participants were volunteers and were assured of their right to withdraw from participation at any point without question. Participants were provided with an information statement and were asked to sign a consent form.

Once the data was gathered it was transcribed into digital text and physical copies were destroyed. Any identifying information was removed to protect the confidentiality of participants. The data set was stored on a single laptop with password access available only to the researcher. A back up copy was stored in a secure place at the Science and Mathematics Education Centre. The data set will remain in secure storage for a period of five years after the study is completed.

To protect the privacy of participants; (a) all interviews were transcribed using respondent labels and no reference to particular individuals or school was made and (b) digital data and back-up copies will be securely stored for five years and the original documents and recordings were destroyed. Participants were invited to choose whether or not they were specifically named in the acknowledgements for the study, to appropriately recognise their important contribution to the research. All participants in the survey and the process tracing task were offered a summary of the research.

Summary

This chapter described the multiple methodologies employed in this study. It began with a justification for the use of multiple methods to explore the complex phenomenon of reporting. It presented detailed information about the implementation of a survey

through the collection of data obtained from the distribution of a postal questionnaire. It provided information on the development of the survey device and the process followed to distribute the questionnaire. It also outlined the strategy used for analysis of the survey data. A detailed description of the Process Tracing task was given. The sources of qualitative data generated by the task were identified and the approach to analysis was described. A description of the participants in the Process Tracing task was supplied. Attempts to improve the quality of the study by considering validity, reliability, fidelity, consistency, generalizability and transferability were considered. The impact of the researcher as a practicing teacher was considered, particularly in terms of the use of a first-person narrative. The chapter concluded with a discussion of the ethical issues relevant to these research methodologies.

Chapter 4. Results and data analysis for Questionnaire

Overview

This chapter will summarise and analyse data collected from a sample of teachers across Victoria in 2008. Using a questionnaire, teachers were asked about their record keeping, report writing experiences and attitudes. The findings of this survey have been used to identify the kinds of professional knowledge required for report writing and the kinds of external and internal contextual factors that influence the process across the semester.

The questionnaire specifically contributes to answering seven of the ten research questions, but further insights for all questions will be added with the second phase of the study. Data from the questionnaires are analysed in sections of related information. The chunked information is not in the same sequence as either the questionnaire or the Research Questions. The questionnaire was structured to follow the sequence occurring in the reporting cycle for most Victorian teachers; that is: feedback, mid-semester reporting, parent-teacher conferencing and end-of-semester written reports. The research questions follow the hierarchy in Feldman's model of Teaching as a way of being.

The analysis begins with a description of the respondents and their teaching context. The expression *teaching context* is intended to reflect the kind of school (co-educational, single gender, P-10, P-12 etc.) and its teaching sector (Government, independent or Catholic systemic). These aspects of teaching context are explored as variables in statistical analysis of the survey data in order to see the interconnectedness between information, behaviours, attitudes and context. Information about the range of ways teacher report learning information across the state is summarised in order to address Research Question 3a.

In the second part of the analysis the range of ways that teachers record formal and informal information is described. Teachers were asked how they record formal assessment in order to address Research Question 1a. Research Question 1b is addressed through an exploration of the kinds of informal information gathered by teachers about students over the semester.

The third part of the analysis considers how the surveyed teachers provide feedback to students. Along with exploring whether and how feedback is retained in formal records, this answers Research Question 1c.

The fourth part of the analysis considers the continuum between teachers' knowledge of students, which is intangible, and teachers' behaviours in accruing physical evidence of learning. The analysis summarises the attitude statements, looks at association between attitudes and preparation behaviours for reporting and at mid-semester reports and parent-teacher conferences. This investigation addresses Research Question 3b.

While this study examines the written semester report, written comments are shaped by information obtained at parent-teacher meetings. Analysis considers the context variables most likely to be associated with attitudes to parent-teacher meetings characterised as confrontational or collaborative. This addresses Research Question 3c.

To provide additional insights into the factors that influence teacher thinking during the report writing process, which is Research Question 4a, the last analysis block contrasts the evidence or information that teachers value to the evidence that they believe parents value. Inferential analysis was conducted to explore more deeply the relationship between context factors and record keeping behaviours and attitudes. Also, comparison of the group means for early and later career teachers was conducted for reporting behaviours and attitudes, using Mann-Whitney U tests.

Description of Subjects and Schools

The subjects

Over seventy percent of respondents to this questionnaire were female (70.3% female, 29.7% male). Data about age and other demographic information was not collected as people may enter teaching as a second or subsequent career. Teaching experience was collected in order to identify evidence of behaviours associated with experience.



Figure 4-1 Proportion of Respondents within each Category of Teaching Experience

Figure 4.1 indicates that the largest proportion of respondents in this study are highly experienced teachers, with almost 55% of the sample having more than 10 years experience as a teacher. Table 4.1 indicates that the most common category of respondent was female teachers with more than fifteen years teaching experience (29.7%).

Table 4-1 Teaching Experience of Male and Female Respondents

Respondent gender	Teacher experience (n)				
	< 2 years	2-5 years	6-10 years	11-15 years	> 15 years
female	4	11	16	9	30
male	1	7	6	1	15

Data about the year levels that teachers taught to were also recorded. More than half of the respondents taught across Years seven through to twelve (57.4%) and 38.6% taught up to Year 10 only. Three respondents taught only VCE subjects. The schedule for adopting VELs had teachers from Government and systemic Catholic schools teaching to VELs and reporting with the Student Report Card by Semester 2, 2008, hence teachers from Government and Catholic sector schools who were teaching in Years 7 - 10 are classified as VELs experienced. Those who taught in the Independent sector or in VCE campuses only may not have reported to the VELs in Science. Not all schools implemented VELs by 2008, despite the specified timeline for implementation, hence the impact of VELs experience may not be clear from this measure.

The schools and teaching sector.

Survey respondents were drawn from the three teaching sectors. Respondents from government schools (38.6%) and systemic Catholic schools (39.6%) were in equivalent proportions, with the remainder (21.8%) coming from independent schools. As shown in Figure 4.2, the majority of schools (71.3%) were Year 7-12 secondary schools. Independent schools are often P-12 schools.

Figure 4-2: Percentage of Respondents by School Type

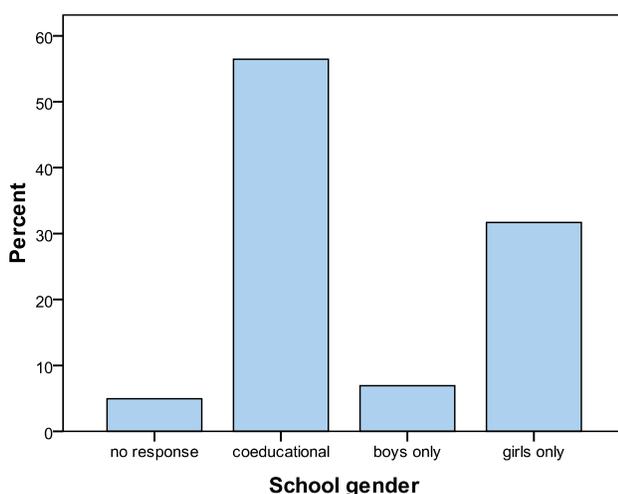


Figure 4.2 indicates that the majority of respondents came from co-educational schools. Respondents from girls’ schools were over four times that of boys’ only schools. A clearer picture of the distribution of school context types is apparent in Table 4.2. Approximately one third of the respondents belong to the most common category, a Years 7-12 Government co-educational school, but the next most common category was teachers from a Years 7 – 12 Catholic girls’ school (22.7%).

Table 4-2 Range of School Contexts in the Survey Population

School type	School sector	School gender			Total
		coeducational	boys only	girls only	
P-10	Independent	4	-	-	4
P-12	Systemic Catholic	0	-	1	1
	Independent	8	-	4	12

7-12	Government	31	0	5	36
	Systemic Catholic	7	5	22	34
	Independent	1	0	0	1
7-10	Government	3	0	-	3
	Systemic Catholic	1	2	-	3
11-12	Systemic Catholic	1	-	-	1
	Independent	2	-	-	2

Elements of the Reporting Cycle and Victorian Government Reporting Mandates

Research Question 3a: Do the schools described by respondents to the questionnaire comply with the Victorian Government reporting mandates?

The questionnaire was designed to capture a snapshot of report writing in the Australian state of Victoria during 2008, marking the transition to the new Student Report Card and the new curriculum the Victorian Essential Learning Standards (VELS). The questionnaire asked about the episodes of reporting to parents throughout the reporting cycle, to validate the assumption that parents and teachers are in contact at a number of points over the semester. The data shown in Table 4.3 supports this assumption, with almost all respondents indicating that parent-teacher conferences and end-of-semester reporting occurred in their schools. This is in line with the Victorian State Government reporting mandates.

Table 4-3 Reporting Categories Used Across the Reporting Cycle

	Mid-semester reports	End semester reports	PT meetings	Portfolio presentations	Individual parent conferences
Percentage	81.6	99.0	98.0	4.1	86.7

A slightly smaller majority of schools offered parents a written report part way through the semester as well as individual parent conferencing. Few schools used student portfolios and portfolio presentations for Science. The kinds of information made available in written mid-semester reports included: behaviour (80.6%), application (69.4%), effort (67.3%), homework completion (62.2%), attendance

(56.1%) and organisation (49.0%) or preparation for class (2%). A general level of achievement was indicated in 66.3% of respondents' schools while specific grades or marks were reported in 19.4% of respondents' school, or specifically for senior students. According to only 11.2% of respondents, mid-semester reports addressed the performance of students in group work. Other performance indicators considered or communicated to parents were confidence, persistence and completion of class work. Schools that provided interim reports at mid-semester may also include the opportunity for teachers to specify concerns, provide an overall comment or make a request for an interview with parents (2%).

According to respondents, schools that did not provide mid-semester reports indicated that their schools issue a letter to parents indicating concern about performance or when a student is at risk of not passing a subject (4.1%). Other approaches to parents were made by sending an email (5.1%) or by telephone calls (8.2%), a message in the school diary, or result stickers being placed in the school diary (3.0%).

In end-of-semester reports, more than seventy percent of respondents indicated that the categories of information provided to parents were behaviour, Areas of Achievement, work completion, attendance, indicators of achievement relative to the VELS standards and Areas for Improvement. All of these categories of information are covered by the mandated aspects of reporting. Other categories of information provided include grades, attitude and application. Some of these categories of information were specifically addressed in written comments. Four percent of respondents indicated that they do not provide written comments on the report card. At 3.0% of schools, online reports were made available through a school internet portal. Comments were more likely to address areas of achievement rather than grades, behaviour, attendance and achievement of standards. Almost seventy percent described independent learning in comments and 54.1% noted extension work completed.

Ninety six percent of respondents indicated that they provide comments on areas for improvement, as mandated for report writing, but only 88% of respondents described areas of achievement. Some schools removed comment for areas of achievement, proposing that grades provide adequate information on achievement.

When reports present only “Areas for Improvement” there is no option for commending, recognising improvement or encouraging the students.

Table 4-4 Comparison of Categories of Information Included in Semester Reports and Described in Written Comments

	Categories of information (%)										
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Specified in reports	82	72.4	84.7	67.3	76.5	68.4	74.5	76.5	35.7	14.3	54.1
Addressed in comments	86.7	91.8	59.2	63.3	63.3	40.8	34.7	48.0	67.3	54.1	58.2

1. Areas of achievement, 2. Areas of improvement, 3. Behaviour, 4. Attitude, 5. Work completion, 6. Grades, 7. Attendance, 8. Work at standard, 9. Independence, 10. Extension, 11. Application

Other things addressed in end-of-semester reports were effort (4%), specific VELs standards or Progression Points, skills or tasks, strategies for improvement and extracurricular science tasks such as participation in the Science Teachers Association of Victoria’s Science Talent Search.

Keeping records of formal and informal information about student learning

Research Question 1a: How are formal records retained for future reference?

The survey directly asked respondents how they record formal marks and grades. Respondents were able to indicate more than one choice hence percentages do not add up to 100%. The responses are described in Table 4.5.

Table 4-5 Methods Used to Keep Records of Formal Assessment of Student Work

Manner in which formal marks are recorded	%
Onto the assessment record pages of a commercial teacher’s diary	69.3
Directly into a computer spreadsheet program	45.5
Onto a class role which is printed on loose pages	15.8
Directly into a computer reporting program	8.9
On a hand-written list which is retained for future reference	7.9

Directly into a computer using some other software	5.9
Directly into a computer database program	4.0
Some other way	7.9

These results show that teachers may use multiple ways to record formal information: 55% of respondents used only one method to record marks, 27% used two methods, 8% used a combination of three methods, and 4% indicated that they use more than four methods. The most common single method of recording information is the commercial teachers' diary or chronicle (n = 32) followed by only recording information into a spreadsheet program (n = 18). The most common combination of methods was using both a teacher's diary and a spreadsheet program (n = 15), but 38 respondents used the teacher's diary in combination with some other measure or measures. There were only seven respondents who used neither a teacher's diary nor a spreadsheet program and six of those seven respondents indicated that they used either printed rolls alone or in combination with another resource.

Research Question 1b: What informal information about students and their learning is collected over the reporting cycle?

Keeping informal records about formal assessment tasks.

Teachers must keep formal records of marks or grades, but additional notes may or may not be kept. In response to the question, "When your students complete a formal assessment task, do you make written records about aspects of their work other than the final mark or grade?" a substantial majority of respondents indicated that they did keep additional records (n = 82). This is a much larger proportion than the 22% identified in Pijl's study (1992). A total of 13.3% of respondents never or only rarely recorded additional notes to supplement their records of marks or grades. Half the sample (50.0%) always or often recorded supplementary notes with marks. For the sample of teachers surveyed in this study most recorded informal information about student learning for future reference, with only 5.1% of the sample indicating that they never record this information.

A Spearman rank order correlation coefficient was computed to assess the relationship between the tendency to often or always record additional information from

formal assessment tasks and the gender and experience of the teacher and aspects of the school environment that the respondent teaches in. This is recorded in Appendix 11a. No association was statistically indicated between tendency to record additional information and any of the teacher characteristics or context factors.

To ensure that the relationship between this record keeping behaviour and teaching experience was fully explored, correlation coefficients were recalculated four times, each calculation controlling for another aspect of context. No significant correlation was determined in any of the cases: (a) controlling for experience teaching to VELS ($r = 0.018$, $n = 97$, $p = 0.86$); (b) controlling for school context ($r = 0.006$, $n = 97$, $p = 0.96$); (c) controlling for school sector ($r = 0.028$, $n = 97$, $p = 0.79$); and (d) controlling for the respondent's gender ($r = 0.11$, $n = 97$, $p = 0.91$).

Kinds of informal notes made about formal assessment.

Teachers were asked about the kinds of information, aside from marks or grades that they record after marking tests, practical work and assignments in Science. Pijl's study found that teachers recorded completion and analysis of marks in addition to marks (1992) but other kinds of information been identified in this study. Respondents most often noted that they record areas of strengths and weakness apparent in students' work (25.8%), when marking tests or examinations and an additional 4.3% note general comments about student performance. Other kinds of information were: 9.6% made a note of excellent answers, perfect scores or evidence of excellent understanding in the responses; 17.2% noted the areas of the students' performance which showed where remediation was necessary; 12.9% used test information to evaluate the task itself. Other things noted here were common misunderstandings, whether students were able to complete the task in time, notes were made about unclear wording and note was made of the things to go over with the class when handing back the task; "*I assess how the students have done on each question and look for patterns in the class*". One respondent noted the value of this formative assessment as tests can provide information, "*to inform future teaching, type of concepts which are misunderstood by many students as well as concepts they hold eg: students have the view that the nucleus is another particle besides protons/neutrons*". Note was also made of special consideration that was applied when marking the task, students who were absent for a section of time during the teaching of the topic and the kinds of resources that were

allowed, such as ‘cheat sheets’. In some schools there was a practice of including a self-evaluation at the end of tests and this statement was noted in the personal learning VELS dimensions of the semester reporting (3.2%).

Other things noted for reporting, were performance on particular key questions that were designed to guide in the allocation of the most appropriate Progression Point (3.2%). A further 6.5% noted evidence of preparation or study and overall attitude for used in reporting about work behaviours. The performance of individual students was noted by looking at how they answered analysis questions (6.5%), how they managed multiple choice questions (4.3%) or the overall breakdown of their marks (4.3%), detail in answers, arithmetic errors and working out (4.3%), their use of time through incomplete, blank or unattempted questions (6.5%). One respondent summarised this: *“level of ability to analyse/evaluate, base knowledge as per multiple choice sections, use of time, degree of adequate preparation, areas that are requiring work and those which are strong.”* Written records don’t need to be comprehensive; one respondent wrote, *“I write comments such as good / excellent / more work required, well done on the tests - where I record the grades. If the mark is unusual for that student I might put a comment saying why – eg. student away etc.”*

Practical Report writing is very specific to the Science curriculum area. Fourteen percent of the teachers in this study indicate that they still note areas of strength and weakness in practical report writing or record a general comment (4.3%) about the practical reports for future reference. Of the respondents, 26.9% said that they note specific areas for improvement and this forms part of their feedback to students and 2.3% indicated that they note excellence in aspects of the practical report. A total of 32.2% of the responses related to noting aspects of the structure of the report: were all sections included? (8.6%); were sections omitted? (4.3%); and was the layout complete? (3.2%). Many paid particular note of the accuracy and depth of the discussion (14%) and the relevance of the conclusion (5.3%). The quality of aspects of the presentation was noted (8.6%), correct graphing (2.3%), and appropriate results tables and diagrams (2.3%). Some teachers indicated that use of scientific terminology was important (2.3%) and that aspects of grammar relevant to the task were also noted (3.3%). Some respondents used the tasks to evaluate students working in groups which would form part of the assessment of Interpersonal Learning (2.3%). Some teacher noted answers that showed deep understanding (2.3%) or the ability to apply theory

studied to the experiment (3.2%). Some respondents noted discussion of error in the report (2.3%) and some noted the accuracy of experimental results (2.3%).

As experimental data is collected during practical tasks some teachers noted how well a particular skill was performed (7.5%), “*for example making microscope slides*”, or would note aspects of behaviour in the laboratory such as safe behaviour, efficiency, following instruction or effort demonstrated (12.9%). Some teachers indicated that they photocopy criteria sheets or rubrics used for marking and retain these for future reference (3.2%) and one noted the value of recording the topic investigated: “*I photocopy the criteria sheet which has the breakdown of marks and any comments I made and I file this in the students file (my own filing system)*”. One respondent summarised the range of possible informal observations: “*Which areas show a weakness - analysis discussion, conclusion, behaviour during prac, on task or not, contribution to task, safety concerns.*” Another respondent noted the “*ability to record and interpret data, record data appropriately, accuracy of measurement*”.

Keeping other types of informal records.

There are other categories of informal information that are relevant to the assessment process, managing individual learning experiences for students and classroom management overall that may be provided to teachers through briefings over pastoral care responsibilities. Respondents were asked to indicate the frequency that they recorded these kinds of information. The responses are summarised in Table 4.6.

Table 4-6 Relative frequency with which Categories of Information are Formally Recorded

	Never	Rarely	Occasionally	Often	Always	M (SD)
Welfare	8.2	20.6	21.6	9.3	40.2	3.53 (1.41)
Family issues	17.7	28.1	27.1	13.5	13.5	2.77 (1.28)
Special learning needs	8.2	15.5	9.3	20.6	44.3	3.71 (1.47)
Late to class	1.0	9.2	23.5	27.6	37.8	3.89 (1.11)
Absences	0.0	1.0	6.1	7.1	85.7	4.78 (0.60)
Work as submitted	4.1	5.2	18.6	21.6	49.5	4.04 (1.20)
Non-submission	0.0	0.0	2.0	16.3	81.6	4.80 (0.45)
Late submission	2.0	2.0	4.1	26.5	65.3	4.51 (0.84)
Negotiated submission	6.2	8.2	16.5	21.6	47.4	3.96 (1.24)

Homework completion	1.0	3.1	20.4	39.8	35.7	4.05 (0.92)
Modification	3.0	10.2	17.3	21.4	48.0	4.00 (1.19)
Unfinished class work	4.1	23.5	26.5	28.6	17.3	3.32 (1.13)
Conflict with teacher	19.4	19.4	25.5	13.3	20.4	2.90 (1.45)
Conflict between students	16.3	22.4	29.6	13.3	13.3	2.69 (1.39)
Motivation	20.4	31.6	34.7	12.2	1.0	2.42 (0.98)
Enthusiasm	22.4	31.6	31.6	13.3	1.0	2.39 (1.01)
Group work	13.3	19.4	38.8	19.4	9.2	2.92 (1.14)
Cooperation	17.3	23.5	39.8	14.3	4.1	2.61 (1.09)

Teachers in the sample were most likely to always record absences ($M = 4.78$) and non-submission of work ($M = 4.80$). Both of these categories of information were required to complete end-of-semester student reports. The respondents were more likely to often or always record the submission of work, late submission of work, homework completion and modification of work. Half or more of the sample indicated that they always or often record: welfare issues about students, special learning needs, late to class and negotiated submission records. These results also indicate that teachers were unlikely to always record the more subjective student characteristics such as motivation, enthusiasm or cooperation.

The types of information that are most likely to be recorded are those things that impact on the meaning of the grades or marks recorded. Non-submission and late submission of work will often lead to a mark penalty. Other information, such as students' special learning needs and modification of work may need to be referred to during the semester, when devising learning tasks and assessment. Semester reporting will often include reflections on work habits, hence information about late submission of work, late to class and completion of homework can serve as evidence for these ratings, hence are valuable to teachers in reporting.

Other kinds of informal information noted by teachers included: any contact with parents including contact details and a brief summary of outcomes (4.2%), behaviour problems or conduct (3.2%), aspects of performance in practical sessions (3.2%), aspects of group work and organisation of students (5.3%) quality of book work (3.2%). Other kinds of information recorded included: student's confidence in the subject,

students deemed to be at risk of failing, suitability of tasks and activities for curriculum reviews, student's work ethic in class, which students don't work well together, submission dates and test or SAC dates and ICT access at home.

Other respondent's comments about kinds of informal information that they record include:

"If a student has a learning difficulty or usually gives a mediocre performance, then performs well in a task, I make efforts to document this and let their parents know also."

"I sometimes comment on learning styles or student interests."

"If a student was absent the previous lesson, I note this when checking homework completion. I also occasionally rate their homework completion - low medium or high standard"

"[I note] ... lesson overviews - what was covered in class."

"[I note] ... student career ambitions, how they like the subject, how they perceive their own ability and previous achievement."

"[I note] ... special insight or understanding shown."

"[I note] ... successful completion of a difficult task or piece of work."

"[I note] ... students' ability to work independently, with some assistance, fully assisted."

"[I note] ... science competition results, sometimes maths results, extracurricular activities that may interfere with science work/tiredness etc."

"[I note] ... conceptual competency, improvements for special needs students."

"[I note] ... happiness of students"

Four respondents specifically commented on the fact that they note these kinds of informal information but hold the information in the heads rather than physically recording it; *"In previous question things like enthusiasm are noted mentally."* and *"No, but just because I don't record it does not mean that I don't make use of this information for example; I would usually be aware of a home situation but would not need to write it down to take that factor into account."* One respondent notes the impact of the changes to Victorian privacy laws *"a lot of the categories above are noted*

mentally but not recorded for privacy rules". One respondent noted the importance of knowing students well; *"I teach part time so I only have a few classes therefore I know my students really well and can remember a lot about their personal circumstances."* The relationship between knowing students and assembling evidence about student performance will be explored further.

Research Question 1c: How do teachers provide feedback about learning to students and is the feedback retained as evidence of learning?

The value of assessment for students is in the opportunity to learn from the assessment made and to improve performance on subsequent tasks. Teachers need to balance the efficiency of addressing feedback to the group through class discussion and the more time-consuming process of speaking to students individually. The survey asked the explicit question as to the ways that teachers return feedback to students. The data is summarised in Table 4.7.

Table 4-7 Manner in which Teachers provide Feedback to Students

General discussion with class	Provision of worded rubrics	Individual discussions	Written comments on grading slips	Writing on students' work	Other
95.9%	86.7%	79.6%	77.6%	92.9%	16.4%

The majority of teachers use a range of strategies to provide feedback and most use more than one strategy. Those strategies used most often are those that reflect the time constraints of classes and limitations in marking time; discussing the task with the whole class and writing feedback directly onto the task, is more time efficient than writing additional records. Those respondents who described alternative ways of providing feedback nominated: discussion with small groups with similar problems, holding student-teacher interviews, and providing email with feedback or posting feedback on an assessment module on the school intranet (7.1% of the total sample). Some teachers held individual discussions with a small number of students whose work has been highlighted, when marked, as warranting special follow up. Some teachers used student exemplars and discussed the features of the exemplars.

In responding to the question “What do you do most often?”, 22.4% indicated that they write comments directly onto the students work and 15.3% attached a rubric to the work. In Pijl’s sample, 25% of the respondents wrote feedback on student work which was returned to students (1992). An additional 12.2% wrote directly on student work and also discussed the work with the class as a whole and 8.2% combined written comment directly on the work with a grading rubric. A further 8.2% used all of the methods for providing feedback listed. Only 5% indicated that they most often provided individual feedback through one-on-one discussion with students.

When responding to the question “What do you feel is most valuable for the students?” the most common response was individual discussion with students (42.8%). This is a substantially bigger proportion than the 5% of respondents who use this approach most often, inevitably because of the difficulty in finding the time to discuss work with all students. Failing to provide individual feedback to only some students could be seen to disadvantage some students.

Written comments on student work (28.6%), the provision of rubrics (17.3%) or criteria sheets (7.4%) or grading slips (7.4%) and class discussion (11.2%) were also regarded as the most helpful forms of feedback. A further 7.4% indicated that the most valuable feedback would depend on the student and the task they were doing and 4.2% felt that marks or grades were the most helpful feedback.

In response to the question, “Do you keep copies of the feedback you give to students?” most respondents (85.6%) indicated that they did, at least sometimes. The distribution of results is seen in Figure 4.3, and it is notable that 20.6% of respondents to the survey always kept copies of feedback provided to students.

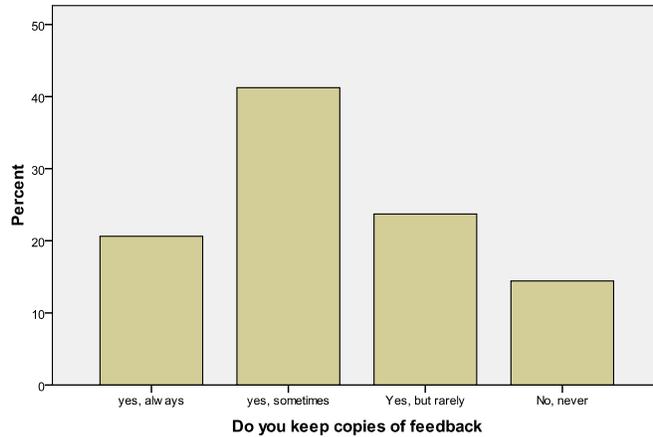


Figure 4-3 Distribution of Responses to the Question "Do you Keep Copies of Feedback?"

A Spearman rank order correlation coefficient was computed to assess the relationship between a tendency to keep copies of feedback and aspects of the teaching context and respondent factors. There was no evidence of significant correlations between tendency to keep records of feedback and school setting ($r = 0.015$, $n = 93$, $p = 0.89$), experience teaching to VELs ($r = 0.012$, $n = 97$, $p = 0.91$), school sector ($r = 0.036$, $n = 97$, $p = 0.73$) or the teachers career experience ($r = 0.073$, $n = 96$, $p = 0.48$). The strongest association was with gender ($r = 0.131$, $n = 97$, $p = 0.19$) although this correlation is very weak. The column graph in Figure 4.4 points to a greater tendency for female teachers to always keep records of feedback given. As there is no correlation between context factors and tendency to retain copies of feedback, this would refute a perception that teachers in any of the sectors are expected to maintain more meticulous records.

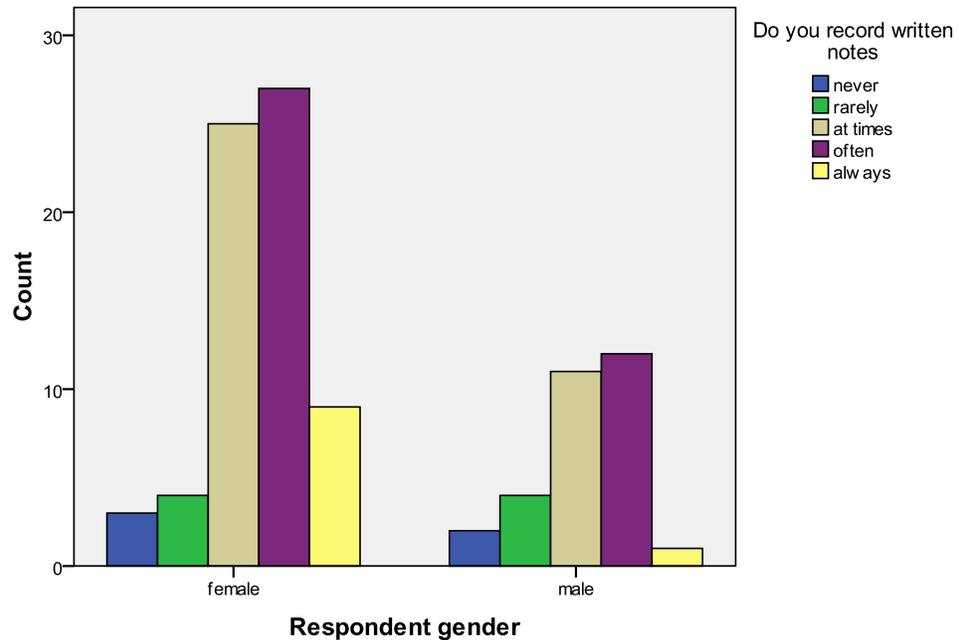


Figure 4-4 Tendency to Retain Records of Feedback According to Gender

Teachers Attitudes and Beliefs about Aspects of Report Writing

Amongst the contextual factors that influence the process of reporting are both external and internal factors. External factors will be explored in phase two of this study. The beliefs and attitudes that teachers hold about students, their profession, their school and district, the purpose of assessment and reporting and many other things will influence reporting. There is no way to comprehensively probe the influence of internal factors through a widely distributed survey. The decision was made to concentrate on three aspects of attitudes and beliefs that may be specifically influential on reporting; they are attitudes regarding knowing students, the need to collect evidence of achievement and attitudes to parents. These were chosen to pursue the characterisations of reporting behaviours described by Sadler (1989) and following from the researcher’s intuition as a practitioner.

Research Question 3b probes for evidence of a relationship between believing you know your students well and gathering and keeping extensive records as evidence of student performance. Research Question 3c probes whether evidence collecting behaviours are associated with attitudes to parents, particularly as recipients of reports and in parent-teacher conferencing.

Research Question 3b: Do teachers believe that they know their students and this is sufficient evidence for report writing or do they believe that they need to accrue evidence to justify reporting decisions?

Sadler asserted that teachers who believe they know their students tend to rely on their gut feeling to write reports and that other teachers gather copious evidence and use very little of what they collect (1989). It is a reasonable assumption that teachers ‘know’ their students. It could also be regarded as a professional obligation to know students – at least in terms of their learning or academic performance. In practice, teachers know some students very quickly as they stand out due to behaviour or performance. Some students take much longer to know, generally if they are quiet, well-behaved and reasonably competent in their work. I find I begin to know students as individuals within a class once I have marked some of their work. This knowledge of a class and its students informs a range of decisions taken in class.

The changed nature of societal attitudes to teachers means that their decisions and judgements are questioned more; hence simply knowing about students’ achievement and performance is not sufficient. There must be traceable criteria to account for judgements made and the demand for fairness in assessment necessitates that decisions and judgements are defensible if subjected to scrutiny. This tension between teacher knowledge and evidence has not been studied and there is no established measure to assess either teacher knowledge of students, or teachers’ use of evidence about students.

The questionnaire tool and validity.

The tool used in this part of the questionnaire was a bank of statements designed to measure the degree of association with (a) a belief in the need to collect evidence of achievement, and (b) a belief that the teacher knows his or her students. All question items were scored using a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The attitude items in this questionnaire sought to determine whether reliance on knowledge alone was adequate for reporting to parents both at parent-teacher conferences and in reports. There is no evidence that these attitude measures are opposing. It is possible that a teacher may confidently hold knowledge of their students but still experience a need to accrue evidence of student achievement.

Five questions were developed to measure respondent association with a belief that they as teachers' hold knowledge of students' standard of work, which will be referred to as *Knowing Students* attitude. Those questions were: "*Once I have marked some of the students' work I hold an idea about their standard of work in my memory*"; "*I can recall the standard of work that a student usually produces*"; "*I refer to my knowledge about students' usual standard of work when reporting to parents*"; "*I know if a student submits a task that is above or below their usual standard of work*"; "*I know if a student is improving in their work*".

Three questions were developed to measure a respondents' association with a belief that they need to keep evidence for assessment, which will be referred to as *Collecting Evidence* attitude. Those questions were: "*I use marks on tests to show evidence of learning or improvement*", "*I need to keep written records to justify my perception of students' work standards.*", "*I need to keep records to get evidence of improving standard of work*".

The validity of this tool at measuring degree of association with these beliefs was established in two ways. Firstly through using a sorting task with a group of experts to establish congruence between the statement and the belief it was measuring. Secondly, internal consistency reliability of the scales was assessed by Cronbach's coefficient alpha (α).

A sorting technique was used to determine the degree of congruence between each of the items and the characteristic it was designed to measure. Each survey questions was printed on cards and six reviewers (experienced teachers who would have been eligible to participate in the study) were asked to classify the questions into the categories. The percentage agreement between reviewers was used to determine the degree of congruence on the placement of each item in a particular category. A 100% congruence between unbiased allocation into the groups and the intention of the question supported the allocation.

Internal consistency reliability of the scales was assessed by Cronbach's coefficient alpha (α) and the item total correlation for items in the *Knowing Students* and *Collecting Evidence* categories. Cronbach's coefficient α for the *Knowing Students* scale was 0.761 ($n = 3$). All included items exceeded the minimum acceptable item-

total correlation of 0.30. The internal consistency reliability of the Collecting Evidence scale was not strongly supported by statistical evidence ($\alpha = 0.464$) and reliability consistency was not found between respondents stated behaviour of keeping informal records and the score on the collecting evidence attitude scale, although chi- square tests showed this association does exist. Correlation and covariance data for this analysis is shown in Appendix 11b.

Knowing students and collecting evidence.

The degree of agreement with individual attitude statements is shown in Table 4.8. Respondents showed agreement or strong agreement with all of the statements. The strongest agreement was shown for the statements “*I refer to my knowledge about students’ usual standard of work when reporting to parents*” and “*I know if a student’s work has improved*”. Weakest agreement was with the statement “*I need to keep written records to justify my perception of students’ work standards*”, yet there was still only 6% of the sample who did not agree with that statement.

Table 4-8 Responses to Knowing Students and Collecting Evidence Attitude Statements

	Percentage of responses					Rating Average
	Strongly disagree	Disagree	neither	Agree	Strongly agree	
Once I have marked some of the students' work I hold an idea about their standard of work in my memory.	2.1	4.1	4.1	63.9	25.8	4.07
I can recall the standard of work that a student usually produces.	3.1	1.0	6.2	72.2	17.5	4.00
I use marks on tests to show evidence of learning or improvement.	1.0	2.1	11.3	66.0	19.6	4.01
I need to keep written records to justify my perception of students' work standards.	1.0	5.2	16.5	56.7	20.6	3.91
I refer to my knowledge about students' usual standard of work when reporting to parents.	1.0	2.1	1.0	58.8	37.1	4.29
I know if a student submits a task that is above or below their usual standard of work.	0.0	1.0	5.2	64.6	29.2	4.22
I need to keep records to get evidence of improvements in their standard of work.	1.0	3.1	14.4	60.8	20.6	3.97
I know if a student's work has improved.	0.0	0.0	3.1	66.0	30.9	4.28

The scores for each of the attitude statements were combined to give total scores on a Knowing Students attitude scale and Collecting Evidence attitude scale. A number of statistical measures are summarised in Table 4.9 to describe the total scores for the Knowing Students and Collecting Evidence scales. The frequency distributions of the total scores are shown in Figure 4.5 with a normal curve for the two attitude measures.

Table 4-9 Descriptive Statistics for Combined Scores of Collecting Evidence and Knowing Students Attitudes

	n	Range	M (SD)	Skewness (SE)	Kurtosis(SE)
Total Collecting Evidence	98	8.0 – 15.0	11.87(1.58)	-.14(.24)	.06(.48)
Total Knowing Students	97	8.0 - 20.0	16.79(1.85)	-.93(.26)	4.23(.49)

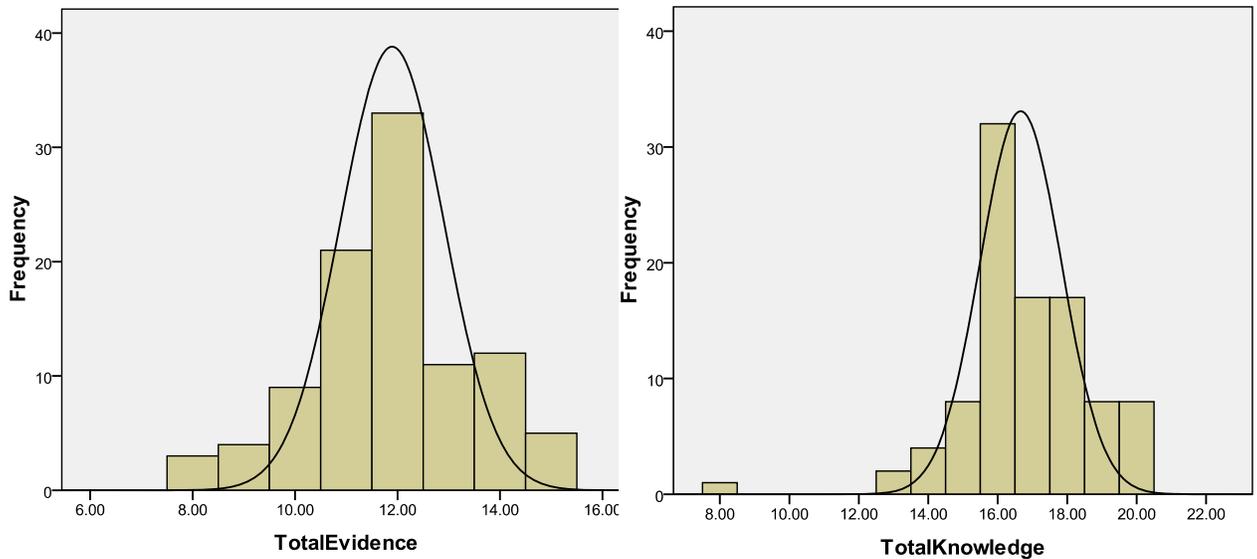


Figure 4-5 Frequency Curve and Normal Curve for Collecting Evidence and Knowing Students Attitudes

Rather than using the full distribution of scores the data were reclassified using the measures of central tendency into three categories identified as strongly associated, moderately associated and weakly associated with the two attitudes. This data fit well with the relative measure of agreement defined by the values in the Likert scale.

For the Collecting Evidence attitude scale a combined scores of 13.0 or higher was reclassified as strongly associated with the attitude (n = 28, 28.6%) and a combined scores of less than 10.0 was classified as having a weak association with the attitude (n = 7, 7.1%). Sixty-three valid respondents (64.3%) had a moderate association with a collecting evidence attitude.

For the Knowing Students attitude, scores of 18.0 or higher were classified as strongly associated with the attitude (n = 50, 51.5%) and scores of 15.0 or less were described as having a weak association with the attitude (n = 1, 1%). Forty-six valid respondents (47.4%) had a moderate association with a collecting evidence attitude.

Figure 4.6 shows a comparison between the association with a Collecting Evidence attitude and with Knowing Students attitude. As the graph indicates almost all respondents were moderately or strongly associated with Knowing Students attitude, with over half the group indicating a strong association with that attitude. A Collecting Evidence attitude was not as strongly held across the cohort with a higher proportion of respondents having little or no association with that attitude.

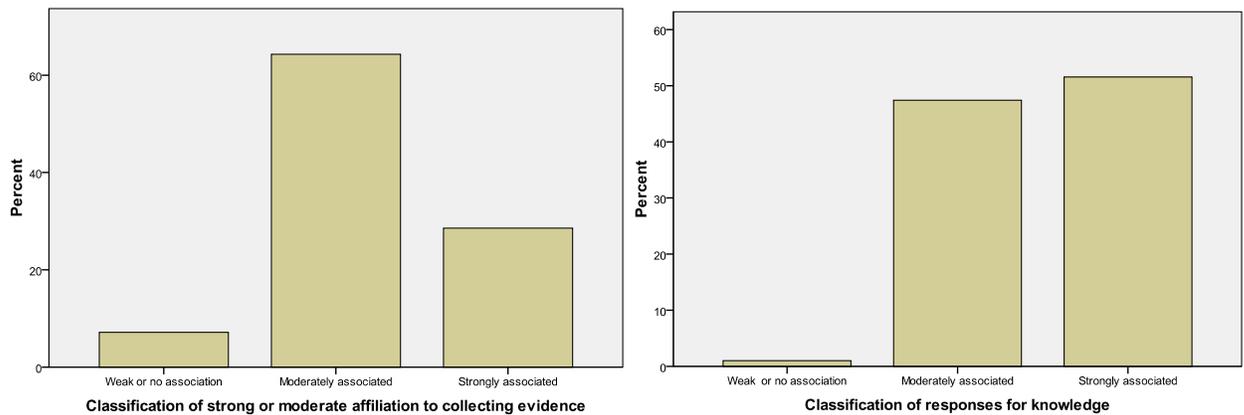


Figure 4-6 Comparison of Relative Association with Collecting Evidence and Knowing Students Attitudes

A strong positive correlation exists between a moderate or strong association with Collecting Evidence and a moderate or strong association with a Knowing Students attitude ($r_s = 0.38$, $n = 97$, $p = .00$). This refutes Sadler's characterisation (1989) of two different attitudes leading to two different approaches to reporting. The survey confirms that the two attitude scales are not opposing and a teacher who chooses to collect evidence about student learning is also likely to believe that they know their students well.

Correlations between the attitude categories and context factors were investigated to identify any association between school types, experience of the teacher, whether they are assessing in science to VELs or gender of the teacher. Only one correlation was statistically indicated, that is a correlation between teaching sector and a strong association with a Collecting Evidence attitude ($r_s = 0.27$, $n = 98$, $p = .007$). The table of correlation coefficients is recorded in Appendix 11c. A chi-square distribution was undertaken. That showed a significant association between Collecting Evidence attitude and school sector ($\chi^2[3] = 6.12$, $V = .25$, $n = 98$, $p = .047$) and between Collecting Evidence attitude and keeping records of informal evidence ($\chi^2[3] = 8.68$, $V = .21$, $n = 98$, $p = .071$) at the 0.1% level.

Figure 4.7 shows that strong association with Collecting Evidence attitude is more common in the systemic Catholic sector (37.5% within the Catholic sector) and the independent sector (40.0% of the independent school sector) than the government sector

(13.2% of the government school sector). The cross-tabulation of degree of association with Collecting Evidence attitude by teaching sector is recorded in Appendix 11d.

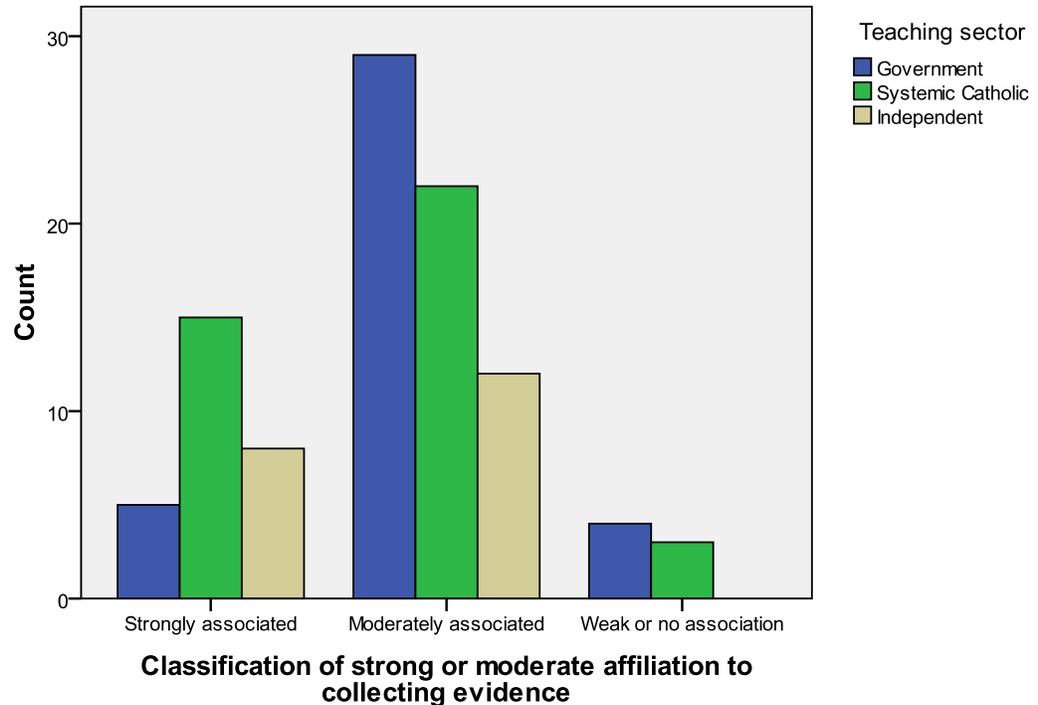


Figure 4-7 Relative Association with Collecting Evidence Attitudes by Teaching Sector

The table of correlation coefficients showed no significant relationship between the teaching sector of the respondent and the Knowing Students attitude score. No significant association was found between either Collecting Evidence or Knowing Student attitudes and the gender of the respondents. No significant relationship was found between teaching experience, or VELs experience and either of the attitude dimensions.

Of the total sample surveyed, 46.4% indicated that they always or often kept records of student feedback *and* had a high score on the Collecting Evidence attitude scale. 90.0% of the respondents that were classified as strongly associated with a Collecting Evidence attitude, always or often kept records of feedback to their students. The cross-tabulation of degree of association with Collecting Evidence attitude and keeping records of student feedback is recorded in Appendix 11e. These statistics points

to a consistency between espoused attitudes towards collecting evidence and attitudes inferred from indications of extensive evidence collecting behaviours (Bryan, 2012).

Research Question 3c: Are evidence collecting behaviours or other aspects of the teaching context associated with a Collaborative or a Confrontational attitude to parents, particularly at face to face meetings?

Parent-teacher meetings are part of the reporting cycle. Most experienced teachers will have had a range of positive and negative experiences as a result of participating in regular parent-teacher conferences. The vast majority of parent-teacher interviews are positive, friendly, informative and long-forgotten. Negative experiences are remembered and modify teachers' attitudes to parent-teacher conferences. In this study the overall approaches to parent-teacher conferences can be described as Collaborative or Confrontational. A collaborative approach can be characterised as explanatory and informing with parents and teacher bringing information to be shared. A Confrontational approach can be characterised as parents and teacher approaching the discussion with defensiveness about their opinions or judgement and an expectation of disagreement or a negative opinion of the other.

The questionnaire tool and validity.

The questionnaire included a bank of 16 statements about the parent-teacher conference experience that have confrontational, informing, justifying and collaborative characters. Respondents were asked to express their level of agreement with that statements on a five-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

The descriptive statistics for the question set regarding attitudes to parent-teacher meetings is contained in Table 4.10. It shows very consistent agreement from all respondents with the statement, "*I can give parents information about how their child gets on with and works with other students*". This is an insight that a parent cannot have access to, and one which parents would find valuable given that the adolescent years are fraught with relationship issues between peers.

Table 4-10 Descriptive Statistics for Parent-Teacher Attitude Statements

	N	Range	M (SD)	Skewness (SE)	Kurtosis (SE)
PT are confrontational	98	1 - 5	2.07 (1.01)	.780 (.24)	-.135 (.48)
I like to explain my approach	98	2 - 5	3.96 (.73)	-.421(.24)	.166 (.48)
I feel I am betraying students	98	1 - 4	1.79 (.79)	.787 (.24)	.167 (.48)
I have to justify myself	97	1 - 5	2.69 (1.06)	.068 (.25)	-.984 (.49)
I have to warn parents	98	1 - 5	3.94 (.80)	-1.011 (.24)	1.814 (.48)
Parents give me information about welfare	98	3 - 5	4.21 (.54)	.113 (.24)	-.113 (.48)
Make student accountable for effort	98	1 - 5	3.93 (.72)	-1.069 (.24)	2.835 (.48)
I can reassure parents	97	3 - 5	4.32 (.51)	.301 (.25)	-.859 (.49)
I can get insights about students	98	2 - 5	4.41 (.59)	-.715 (.24)	1.301 (.48)
I don't like getting students into trouble	98	1 - 5	2.62 (1.02)	.284 (.24)	-.326 (.48)
I can inform about how student interacts with others	98	4 - 5	4.24 (.43)	1.205 (.24)	-.560 (.48)
I can make students accountable for behaviour	98	1 - 5	3.96 (.70)	-1.220 (.24)	3.622 (.48)
I have to prepare well	98	1 - 5	3.29 (.97)	-.195(.24)	-.439 (.48)
Great to tell parents students work hard	98	3 - 5	4.53 (.56)	-.662 (.24)	-.606 (.48)
Parent give information about coping	98	3 - 5	4.32 (.53)	.148 (.24)	-.717 (.48)
Great to tell parents students do their best	97	3 - 5	4.54 (.56)	-.689 (.25)	-.565 (.49)

General agreement was noted for the statements that had means above 4.0. The statements, “*It is great to be able to tell parents that their child is doing their best*” and “*It is great to be able to tell parents that their child is working hard*” had means above 4.50. Together with the statement, “*I can reassure parents that their child is progressing well*”, these statements emphasis that teacher holds exclusive information that can be shared with parents. The statements “*I can get insights into the student’s behaviour and attitudes through meeting parents*”, “*Parents are able to give me information about episodes of bullying or pass on concern about their child’s wellbeing*” and “*Parents can pass on useful information about how the student is coping with work load*” emphasise

that the parent-teacher conference is a dialogue, where parents as stakeholders also hold exclusive access to information which is valuable to the teacher.

The survey responses were investigated for positive and negative correlations and to ensure the interval consistency reliability of the grouping of statements into two attitude scales. Teachers may hold a generally positive or negative attitude to parent-teacher evenings, based on their prior experiences, but it is also possible to hold concurrently positive and negative feelings about the process, so once again the two categories of items appear not be oppositional.

The validity of statements that were associated with a Confrontational attitude towards parent-teacher conferencing was established by assessing the internal consistency reliability of the scales with Cronbach's coefficient alpha (α). The following statements were included in the scale: *"I find them confrontational. Some parents take the opportunity to have a go at me"*, *"I feel like I am betraying the students if I give any negative feedback to their parents"*, *"I feel I have to justify myself"*, *"It gives me the chance to make the student accountable for their poor efforts"*, *"It gives me the chance to make the student accountable for their poor behaviour"*. These statements showed internal reliability validity measured with Cronbach's coefficient alpha of 0.722. Two statements were deleted from the scale with corrected total item correlations of between 0.30 and 0.35. These statements were *"I don't like getting the students into trouble with their parents"* and *"I have to prepare really well so that I have all the evidence at hand"*. The total item correlations from the internal reliability validity calculation are recorded in Appendix 11f.

The validity of statements associated with a Collaborative perspective of parent-teacher conferencing was also established by assessing the internal consistency reliability of the scales with Cronbach's coefficient alpha (α). The following statements were included in the scale: *"Parents are able to give me information about episodes of bullying or pass on concern about their child's wellbeing"*, *"I can reassure parents that their child is progressing well"*, *"I can give parents information about how their child gets on with and works with other students"*, *"It is great to be able to tell parents that their child is working hard"*, *"Parents can pass on useful information about how the student is coping with work load"*, *"It is great to be able to tell parents that their child is doing their best"*. These questions showed internal reliability validity measured with

Cronbach’s coefficient alpha of 0.767. Two statements were deleted from the scale with corrected total item correlations of less than 0.30. These statements were “*I can get insights into the student’s behaviour and attitudes through meeting parents*” and “*I appreciate the opportunity to explain my approach*”. The total item correlations from the internal reliability validity calculation are recorded in Appendix 11g.

Collaborative and confrontational attitudes to parent-teacher meetings.

The valid items were combined into two scales indicating relative association with a Confrontational or a Collaborative attitude towards parent-teacher meeting. Descriptive statistics for the total scores on the two attitude scales is shown in Table 4.11. The frequency distribution curves for both scales are shown in Figure 4. 8.

Table 4-11 Descriptive Data for Parent-Teacher Attitude Scales

	N	Range	M (SD)	Skewness (SE)	Kurtosis (SE)
Confrontational attitude	97	5 - 21	14.45 (3.00)	-.044 (.25)	.123 (.49)
Collaborative attitude	96	21 - 30	26.19 (2.14)	.288(.25)	-.72 (.49)

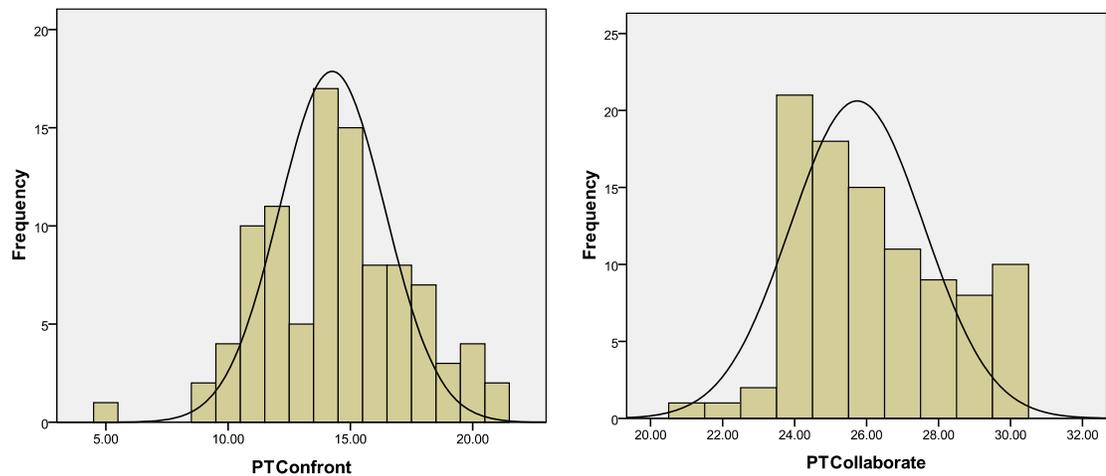


Figure 4-8 Frequency Distribution of Parent-Teacher Attitude Data for (a) Confrontational Attitude and (b) Collaborative Attitude

The summed scores were grouped into two categories at the median value. The Confrontational attitude scale was divided at a value of 14, giving a low association and high association group. The collaborative attitude scale was divided at 26, well above the mid-point of the possible values for the scale, giving a moderate association and high association group.

In order to investigate the association between high scores on the parent-teacher attitude scales and aspects of context, a correlation matrix was produced between the level of association with the Collaborative attitude to parent-teacher meetings statements and the context and attitude statements considered previously. A significant correlation was identified between Collaborative attitude and experience teaching to VELs ($r = 0.237$, $n = 96$, $p = .02$). A significant negative correlation was found between a strong association with a Collaborative attitude to parent-teacher conferences and a strong association with Knowing Students attitude ($r = -0.408$, $n = 96$, $p = .00$). A significant negative correlation was found between a strong association with a Confrontational attitude to parent-teacher conferencing and teaching experience ($r = -0.417$, $n = 97$, $p = .00$), suggesting that more experienced teachers view parent-teacher meetings in a more positive light.

Contingency tables of the parent-teacher meeting attitude scores with significant context factors were generated. Again, there was a significant relationship between a high association with a Collaborative attitude to parent-teacher conferences and experience teaching to VELs ($\chi^2 = 4.27$, $V = .24$, $n = 98$, $p = .04$). The level of association with Knowing Student attitude and a Collaborative approach to parent-teacher conferences was significant ($\chi^2 = 10.03$, $V = .35$, $n = 98$, $p = .002$). A strong association with Knowing Students was more likely to fit with a moderate association with a Collaborative approach to parent-teacher meeting. This may suggest that teachers who are very confident that they know their students standard of work well, may not feel that they need to collaborate with parents to enhance that knowledge. From the inverse perspective, it may suggest that those respondents recognise that school forms only a part of the students' lives, that the teacher cannot fully know about the student, and that the concerned adults can best support the students through collaboration.

Crosstabulation of teaching experience with Confrontational attitudes regarding parent-teacher meetings found that a greater proportion (66.0%) of early career teachers

had a stronger association with Confrontational attitudes towards parent-teacher conferencing and a greater proportion of later career teachers (75.5%) had a lower association with Confrontational attitudes towards parent-teacher conferencing. This significant association between teaching experience and parent-teacher conferencing ($\chi^2 = 15.05$, $V = .42$, $n = 98$, $p = .00$) could be explained if a less experienced teacher, who may be a younger teacher, felt less confident in parent-teacher conferencing and more vulnerable to criticism from parents.

Teachers' beliefs about what parents value in assessment.

The last question block in the survey asked teachers to identify the six most important sources of information for preparing reports about students. The respondents were also asked to rank their choices. The data set was scaled so that the choice identified by the respondent as the most important was given a ranking value of 12. The second most important had a scale value of 10, the third was eight and so on. If an option was not selected in the top six it was scaled to zero. The scaled values were summed to reflect the overall significance given to the information source by the subject group. The data gathered is included in Table 4.12.

The teachers in the study indicated that overall, the teacher's knowledge of the students' application or effort in class is very important in preparing reports about students. Marks on tests were also regarded as very important with a median score of 8 therefore a median ranking of third most important. Respondents ranked both of these information sources as "most important" more frequently than any other ranking. A third important category of information was knowledge of student ability. The median value for this response was a fourth ranking. Marks continued to be important with marks on assignment considered more important, overall, than marks for practical reports or marks for skill in practical work. All of these categories of marks were considered more important than recorded informal notes or comments describing student learning or recorded informal notes or comments describing the student's application or effort. Teachers felt that knowledge of student's special learning needs or experience learning in the English language, teacher's knowledge of family circumstances and teacher's knowledge of the cooperativeness of the child were less important in helping them to prepare semester reports about students. These findings fits with the conclusions of the studies on grading summarised in the Literature Review

(Brookhart, 1993; Cross & Frary, 1986; Fehring, 1998; McMillan, 2001; McMillan & Lawson, 2001; Whitmer, 1983).

Table 4-12 Teacher's Beliefs as to the Most Valuable Sources of Information for Report Writing

	M	Median	Mode	Sum
Knowledge of student effort	7.26	8	12	748
Marks on tests	6.76	8	12	696
Knowledge of student ability	5.88	6	0	606
Marks for assignments	4.12	4	0	424
Marks for practical reports	3.53	2	0	364
Skill in practical work	2.91	0	0	300
Knowledge of cooperativeness	2.19	0	0	226
Informal notes on learning	1.96	0	0	202
Informal notes on effort	1.84	0	0	190
Special learning needs	1.42	0	0	146
Knowledge of family circumstances	1.24	0	0	128

Although the strategies for preparing reports at mid-semester and end-of-semester are different, there are interesting comparisons between what teachers indicate that they value and the strategies that they utilise. In the questionnaire, 88.8% of respondents indicated that they use grades or marks to prepare mid-semester reports and 82.7% relied on general classroom observations. 49.0% made use of work samples and 70.4% consult with written or recorded informal notes in preparation for compiling mid-semester reports. Other respondents indicated that mid-semester reports focus on application and effort rather than achievement so those observations were more useful. One respondent described using students' self-evaluations for preparing mid-semester comments. The valued information data set indicated that teachers' value marks on tests above other marked assessment but effort is the most valued information about students' performance. While the teachers' belief data indicates that informal assessment information is not highly valued, prior evidence from the survey indicated that observation and informal notes were used by 70% of respondents.

Teachers were asked to repeat the task and indicate what they thought parents would regard as most important. This question set was posed in order to ascertain if

there was any dissonance between what teachers thought was appropriate and what they believed parents perceived as what important. Measures of central tendency for the data are included in Table 4.13.

Table 4-13 Measures of Central Tendency describing Teacher’s Beliefs about Information sources valued by Parents

	M	Median	Mode	Sum
Marks on tests	9.86	12	12	1016
Marks for assignments	6.97	10	10	718
Knowledge of student effort	4.97	4	0	512
Marks for practical reports	4.91	6	0	506
Skill in practical work	3.09	0	0	318
Knowledge of cooperativeness	2.14	0	0	220
Knowledge of student ability	1.75	0	0	180
Knowledge of family circumstances	1.69	0	0	174
Special learning needs	.99	0	0	102
Informal notes on effort	.68	0	0	70
Informal notes on learning	.60	0	0	62

The results show unambiguously that teacher believe marks on tests are regarded as most important by parents, followed by marks on assignments. All measures of central tendency show that test marks have the most important ranking.

The sample of teachers indicated that they believe that parents’ value information about students’ effort, but less than marks attained. The sample of teachers also felt that parents would value information about learning issues and family issues over any other informal data. This finding supports the assertion that informal assessment holds less value for the stakeholders in reporting.

Inferential analysis.

Despite the limited generalizability of this study inferential analysis was undertaken to look at context factors that can predict: (a) tendency to always or often make additional informal records, (b) strong associations with a Collecting Evidence attitude, and (c) high association with Confrontational and Collaborative attitudes

towards parent-teacher meetings,. Spearman's rank order correlations were computed to assess the relationships between attitudes, behaviour groups and context factors. Correlations that were greater than five percent were identified and used as dependent variables in discriminant function analysis. Inferential analysis was also used to compare the reporting behaviours of early and later career teachers.

Context factors that can predict tendency to always or often collect or make additional informal records.

A discriminant analysis was conducted to predict whether a respondent rarely or frequently made additional informal notes when assessing student work. Predictor variables were gender, teaching experience, school sector, school context, VELs experience, Knowing Student attitude score, Collecting Evidence attitude score, Collaborative or Confrontational attitude to parent-teacher meeting score and frequency of keeping copies of feedback. Significant mean differences were observed for the likelihood of keeping copies of assessment feedback only ($\Lambda = .88$, $F [1, 87] = 11.98$, $p = .001$); the mean score for keeping copies of feedback for those respondents who often or always made informal records was 1.72 (SD =.45) and the mean score for keeping copies of feedback from those respondents who never or rarely made informal records was 1.96 (SD = .19). This suggests that respondents who record informal notes about students' work are less likely to keep copies of the feedback that they give to students. This is reasonable as keeping two sets of information about work would be redundant. The log determinants were similar but Box's M was not able to be calculated as the sample group who rarely or never made records of informal observations was less than 13% of the overall sample. As the null hypothesis could not be validated the data was not examined further.

Context factors that can predict a high score for the Collecting Evidence scale.

A discriminant analysis was conducted to predict whether a respondent was likely to show a strong association with a Collecting Evidence attitude. Predictor variables were gender, teaching experience, school sector, school context, VELs experience, Knowing Student attitude score, Collaborative and Confrontational attitude scores, frequency of keeping copies of feedback and recording informal notes. Significant mean differences were observed for experience teaching to VELs ($\Lambda = .97$, $F [1, 87] = 3.12$, $p = .08$),

teaching sector ($\Lambda = .92$, $F [1, 87] = 7.56$, $p = .01$), and a strong association with a Knowing Students attitude ($\Lambda = .88$, $F [1, 87] = 11.40$, $p = .001$). The discriminate function revealed a significant association between the groups and four predictors, accounting for 25.05% of between group variability. According to the structure matrix table the strongest predictors of evidence collecting attitudes were a lower association with knowing students attitude ($\lambda = -.617$), teaching sector ($\lambda = .504$), no experience teaching to VELs ($\lambda = -.324$) a lower score on the collaborative attitude to parent-teacher meetings ($\lambda = -.307$) and female gender. The cross validated classification showed that overall 70.8% were correctly classified. This suggests that those teachers who are more likely to systematically collect evidence of student performance are more likely to be female, teaching in the upper year levels or in independent schools, with a less collaborative attitude to parent-teacher meetings. They were more moderate in indicating that they knew about their students' learning achievement.

Context factors that can predict attitude group for parent-teacher meetings.

A discriminant analysis was conducted to predict a high or low score indicating degree of association with a Confrontational or Collaborative attitude to parent-teacher meeting. The predictor variables included in the discriminant analysis were gender, teaching experience, school sector, school context, VELs experience, Knowing Student and Collecting Evidence attitude scores collaborative attitude to parent-teacher meetings score, tendency to keep copies of feedback and tendency to record informal notes.

Significant mean differences were observed between high and low scores on the Confrontational attitude to parent-teacher meetings, for teacher experience and teacher rating of marks on tests as most important for composing semester reports. The discriminate function revealed a significant association between the groups and three predictors, accounting for 31.12% of between group variability ($\Lambda = .701$, $\chi^2 = 28.62 [13]$, $p = .007$). According to the structure matrix table the strongest predictors of lower Confrontational scores are greater teacher experience ($\lambda = .654$), a lower tendency to value marks on tests as most valuable in preparing reports ($\lambda = -.331$) and a moderately

Collaborative attitude to parent-teacher meetings ($\lambda = -.292$). The cross-validated classification showed that overall 65.2% were correctly classified.

There were significant differences between the high and low association with confrontational attitude to parent-teacher meetings on the basis of teaching experience ($\Lambda = .846$, $F [1, 87] = 15.97$, $p = .00$) and the tendency to value marks on tests most highly in composing semester reports ($\Lambda = .955$, $F [1, 87] = 4.08$, $p = .05$). There were differences in the mean values for teacher experience in the group with low scores on the association with confrontational attitude ($M = 1.76$, $SD = .43$), and the group with high scores on the association with confrontational attitude ($M = 1.37$, $SD = .49$). There were also differences in the mean values for valuing test marks most highly in the group with low scores on the association with confrontation attitude ($M = 6.09$, $SD = 4.02$), and the group with high scores on the association with confrontation attitude ($M = 7.81$, $SD = 4.04$). This suggests that teachers with a less confrontational attitude towards parent-teacher meetings were likely to be more experienced teachers who viewed tests as only one indicator of student learning and achievement.

A discriminant analysis was then conducted to predict a high or a low association with a collaborative attitude to parent-teacher meeting. Significant mean differences were observed for confrontational attitude to parent-teacher meetings, experience teaching to VELs and a high score on the knowing students attitude scale. The discriminate function revealed a significant association between the groups and two predictors, accounting for 28.73% of between group variability ($\Lambda = .713$, $\chi^2 = 27.21 [13]$, $p = .01$). According to the structure matrix table the strongest predictors of higher collaborative attitudes to parent-teacher meetings are higher scores on the confidence in knowing students attitude scale ($\lambda = .581$), experience in teaching to the VELs ($\lambda = .382$), a confrontational attitude to parent-teacher meetings ($\lambda = .302$) and a higher score on the evidence collecting attitude scale ($\lambda = .283$). The cross validated classification showed that overall 66.3% were correctly classified.

There were significant differences between the high and low association with collaborative attitude to parent-teacher meetings according to strong association with knowing students attitude ($\Lambda = .881$, $F [1, 87] = 11.97$, $p = .001$) and experience teaching to VELs ($\Lambda = .945$, $F [1, 87] = 5.11$, $p = .03$). Those who indicated a high association with a collaborative attitude to parent-teacher meetings showed a higher

mean score on the Knowing students attitude scale ($M = 1.66$, $SD = .48$ as compared to $M = 1.31$, $SD = .47$) and were more likely to have experience teaching to VELs ($M = 1.93$, $SD = .26$ as compared to $M = 1.75$, $SD = .44$).

Comparison of early and later career teachers with regard to reporting behaviours.

To search for characteristics and behaviours associated with higher levels of teaching experience the cohort was also divided into two groups, early and later career teachers. Group means were compared for all reporting behaviour variables using independent t-tests and Mann-Whitney tests.

For the *t*-tests conducted there was a significant difference in the scores for association with a Confrontation attitude to parent-teacher meetings only; $t(94) = 3.266$, $p = .002$. The mean score for early career teachers was 16.23 ($SD = 2.86$) and for later career teachers was 13.96 ($SD = 2.86$). Specifically, these results suggest that there is a higher association with Confrontational attitude to parent-teacher meetings amongst less experienced teachers.

In the first battery of reporting behaviours the difference between early career and later career teachers on recording formal scores was investigated by calculating the Mann-Whitney test statistic. There was a significant difference between the group on the basis of whether they record information into a teachers diary ($U = 680.50$, $z = -2.12$, $p = .03$) or an Excel file ($U = 503.00$, $z = -3.64$, $p = .00$), with median values indicating that early career teachers are more likely to record their students' scores on an Excel file than later career teachers and later career teachers more likely to record marks into a teacher's diary than early career teachers.

In the bank of questions comparing the kinds of informal information recorded by teachers, median values indicate that later career teachers are more likely to record welfare information, work as it is submitted, late submission of work, negotiated submission of work, modification of work unfinished class work. This information is shown in Table 4.14.

These differences were significant for recording non-submission of work ($U = 577.50$, $z = -3.16$, $p = .002$), late submission of work ($U = 473.00$, $z = -3.60$, $p = .00$) and recording negotiated submission of work dates ($U = 405.00$, $z = -3.61$, $p = .00$).

There was a significant difference between early and later career teachers in those that record homework completion ($U = 549.00, z = -2.529, p = .011$) and modification of work ($U = 526.50, z = -2.75, p = .006$), with later career teachers more likely to record data in all these categories.

Table 4-14 Median Scores for Frequency of Record Keeping for Early and Later Career Teachers

		Record welfare	Record work as submitted	Record late submission	Record negotiated submission	Record modification	Record unfinished class work
Early career teachers n = 22	Median	3.00	4.00	4.00	3.00	3.50	3.00
Later career teachers n = 75	Median	4.00	5.00	5.00	5.00	5.00	4.00

No significant difference was found in the strategies used to provide feedback to students between early and later career teachers. In the attitude statement regarding knowing students and using evidence to justify reporting to parents there was no difference in median values but the Mann-Whitney test statistic indicated that there was a significant difference between early and later career teachers over the attitude statement “*I need to keep written records to justify my perception of students’ work standards*” ($U = 592.00, z = -2.24, p = .025$). To verify this finding the possible responses to the statement were cross tabulated with teacher career groupings. Later career teachers were more likely to indicate that they agree or strongly agree with that statement while early career teachers were much less likely to agree with that statement ($\chi^2 [4] = 9.183, n = 97, p = .057$).

Statistical investigation did not identify any difference in the range of strategies used for preparing for parent-teacher conferences between early and later career teachers. In the bank of questions comparing the parent-teacher conference attitudes, there were differences in the median values for several attitude statements. These are shown in Table 4.15.

Table 4-15 Median Scores for Parent-Teacher Conference Attitude Statements between Early and Later Career Teachers

		PT are confrontational	I have to justify myself	I have to prepare well	Great to tell parents students work hard	Great to tell parents students do their best
Early career n= 22	Median	2.50	3.00	3.50	4.50	4.00
Later career n=75	Median	2.00	2.00	3.00	5.00	5.00

The Mann-Whitney test statistic indicated a significant difference in the following attitude statements: “*I find them confrontational. Some parents take the opportunity to have a go at me*” ($U = 527.50, z = -2.71, p = .007$), “*I feel like I am betraying the students if I give any negative feedback to their parents*” ($U = 566.50, z = -2.41, p = .016$), with early career teachers more likely to agree or strongly agree with the two statements.

Respondents were asked to rank the kinds of information they valued in constructing reports in the last bank of questions in the survey. There was no significant difference between the areas valued most highly by early career or later career teachers at the <5% level. Differences in median scores were noted but only suggested that skill in practical work was valued more by early career teachers. Early career teachers indicated that they believed that parents valued marks on assignments more highly than later career teachers. Later career teachers had a higher median ranking for the value of their knowledge of student effort and their knowledge of student ability.

Summary

The survey data generated an indication of the behaviours and beliefs of some teachers across the reporting cycle. The findings cannot be used to make inferences about teachers outside the sample described, rather the findings fall within the range of behaviours and beliefs that exist within the wider community of teachers in Victoria during 2008. The survey was able to provide insight into two aspects of the experience of report writing: the knowledge base required for reporting and some of the internal and external contextual factors that shape the reporting experience.

In order to write reports, the minimum knowledge required is the students' level of performance on formal assessment tasks. Research Question 1a sought to discover how information about performance on formal assessment tasks is retained for future reference. Respondents indicated that they use one or more methods to record formal grades. The majority use a commercial teacher's diary (69.3%) or a computer based spreadsheet program (45.5%). Inferential analysis indicated more experienced teachers are more likely to use a diary. Also, 48.9% of the respondents used more than one method to record and retain information.

Research Question 1b sought to find what informal information about students and their learning is collected over the reporting cycle. The survey indicated that the majority of the respondents record and retain various kinds of informal information about students and their learning. 86.7% of the sample record additional notes about student learning at least some of the time and 50.0% always or often record supplementary notes along with marks or grades. Records of strengths and weakness in performance were commonly recorded by respondents. They noted areas of learning needing remediation, aspects of the task that should be improved and used the information to understand student performance and reflect on the effectiveness of their teaching and assessment programs. They noted time taken, unclear wording, absences and things to review when the assessment task was returned. Student competence with multiple choice or analysis questions, use of time, and detail given in answers, provide useful information to report back to students and to parents. In practical reports, teacher noted aspects of report structure, skill, quality of data, use of scientific terminology, diagrams, graphing and analysis of errors.

Teachers also frequently or always kept records regarding welfare issues, special learning needs, absences, concerns over submission of work and completion of work. These categories of information impact on the meaning of marks obtained and are evidence of work habits. Four respondents indicated that the categories of informal information were kept in memory but not recorded.

Research Question 1c sought to find how feedback was given to students and whether this was retained. Teachers used a variety of methods to provide feedback to students, including discussion with the class, annotating student work and using rubrics. Individual discussion and grading slips were thought to be most valuable but writing on

student work and providing rubrics are most often used, balancing informing and efficiency. Most respondents indicated that they keep copies of their feedback to students at least some of the time (85.6%) and one in five respondents always kept copies of the feedback they give to students.

Inferential analysis suggested that later career teachers are more likely to keep a range of informal notes. Teachers who don't record informal notes are more likely to record formal grades in a teachers' diary and to give rubrics to students. Teachers who didn't record informal notes are more likely to keep copies of their feedback to students. Those who do record informal notes are more likely to record information about work submission, motivation and group work performance.

There are both internal and external features of the teaching context that shape experiences in teaching including report writing. While further exploration of external factors will occur later in the study, in answering Research Question 3a it was established that most schools referred to in this sample in the state of Victoria in 2008, met or exceeded the mandates for reporting to parents across the reporting cycle. Most respondents work at schools that in 2008 had student report cards that included comments on Areas for Improvement and a slightly lower percentage that commented on Areas of Achievement. While 4% of respondents were at schools that did not provide written comments on student report cards, it is known that independent schools are not required to use the Victorian Student Report Card, only to provide "plain English" reports. More than 70% of respondents said that their student reports address behaviour, work completion, attendance and achievement against standards or Progression Points. A slightly smaller proportion also covered attitudes and grades.

Research Question 3b described the attitudes and behaviours associated with reporting student learning achievement in report cards. The attitudes investigated were: knowing about students, the need to collect evidence of learning and two general attitudes to parent-teacher meetings, that is being generally collaborative or confrontational. The survey showed that it was possible to have a moderate or strong association with all of these attitudes. Inferential statistics found some significant associations between these attitudes and behaviours, features of the teaching setting or the teacher's characteristics.

Almost twenty nine percent of respondents had a strong association with an evidence collecting attitude. They strongly agreed with statements such as, "I need to keep written records to justify my perception of student work standards" and "I need to get evidence of improving standard of work". Ninety six percent of respondents whose score indicated a strong association with an Evidence Collecting attitude, also indicated that they always or often kept copies of feedback to students. An additional 64.3% of respondents had a moderate association with a collecting evidence attitude.

A larger proportion of the sample (51.5%) had a strong association with an attitude of knowing their students. A further 47.4% indicated a moderate association; hence, very few respondents indicated that they didn't associate with an attitude that they knew their students. Knowledge of one's students could be considered to be an aspect of professional knowledge or a requirement of professional practice.

It was found that a strong positive correlation existed between both attitude scales indicating Knowing Students and Collecting Evidence were not opposing attitudes. There was a correlation between a strong association with Collecting Evidence attitude and (a) teaching sector and (b) an indication that the respondents collect and retain informal information about student learning. A stronger association with evidence collecting attitude was found in Catholic and independent schools than in Government sector schools. No other associations were found in simple correlations between attitude scores and context factors but discriminant analysis showed that teachers who frequently make additional notes were less likely to keep copies of feedback to students. A high score for Collecting Evidence was associated with a lower score for Knowing Students attitude, less experience teaching to VELs, female gender and a more moderately collaborative attitude to parent-teacher meetings.

Research Question 3c considered the association between Collecting Evidence attitude and teachers' attitude to parents, especially at parent-teacher meetings. The results indicate that a Collaborative and a Confrontational attitude to parent-teacher meetings are not opposing attitudes and that a teacher may have a strong association with both attitudes. Frequency distribution showed most teachers have a moderate association with both scales. A greater proportion of respondents held a strong association with a Confrontational attitude than held a strong association with a Collaborative attitude. Most respondents agreed with the statement "*I can give parents*

information about how their child works with others" and "It is great to give positive feedback to parents". A lower score for Confrontational attitude to parent-teacher meetings was associated with valuing test marks less highly, greater experience in teaching, and a moderate score on the Collaborative attitude scale. A more Confrontational attitude to parent-teacher meeting is associated with less teaching experience. A more Collaborative attitude was associated with higher scores for knowing students, experience teaching to VELS, higher Confrontational attitude scores, and higher Collecting Evidence attitude score.

When exploring the kinds of information that teachers most value for composing semester reports, students' effort was viewed as most important followed by marks on tests, then knowledge of student ability, and then other categories of marks. The significance of this information is it constitutes evidence that information from informal sources, specifically knowledge of effort and ability is highly valued by teachers. Across the sample the teachers indicated that they believe marks on assessment, especially tests, assignments and practical reports, are most valued by parents. The sample of teachers indicated that they believe parents value informal sources of information less than formal marks.

The respondent information clearly showed that informal information is gathered by teachers and some respondents were methodical in frequently gathering and recording informal information as evidence for reporting. There is substantial informal information available to teachers about students, some provided through administrative channels but much available directly to teachers from the class and assessment work undertaken by students. It is this information, distilled down as strengths and weaknesses, effort and attitude that substantially contribute to the teacher's knowledge of their students. The attitudes and beliefs investigated in the questionnaire were not readily simplified. Beliefs could not be placed on to a continuous scale between a teacher confidently knowing her or his students and a teacher believing that there must be evidence of student learning. Results indicated both beliefs can be held strongly and concurrently. In the same way, there isn't a continuum between holding a confrontational or a collaborative approach to parent-teacher interaction. Teachers can hold both attitudes concurrently. A variety of associations between attitudes, behaviours and characteristics of the teacher and the school setting were examined, but the sample studied was too small to make generalisations about these associations beyond the

sample group studied. The survey data generated a complex picture of the knowledge, attitudes and behaviours of teachers across the reporting cycle.

Chapter 5. Analysis of Written Report Comments in the Process Tracing Task

Overview

The purpose of the second phase of this study was to explore the decision making and reasoning that occurs during the report comment writing process. There are two research questions that are addressed in Chapter 5 and 6. Chapter 5 specifically looks at the 28 written report comments describing student performance in order to answer Research Questions 2a and 2b. Research Question 2a asks whether formal grades alone provide sufficient information for teachers to compose informative report comments. Research Question 2b asks what teacher thinking is evident in the written report comments for the hypothetical students. The comments are compared for similarity of comment ranking, composition order and any significant differences apparent in the approach by the four subjects. The transcript of the process tracing task and interview are presented in Chapters 6 and 7.

Discussion of Written Comments in the Process Tracing Task

Respondents produced written reports using a simple database that emulated common report writing software. The database included five comments for each category; these are presented in Appendix 4. Each comment was ranked from 1 (*highest* or *most positive*) to 5 (*lowest* or *least positive*). The software allowed for retrieval of each report. The reports were compared for (a) the sequence of categories used, (b) modification of comments, and (c) the degree of similarity between the rank of comment selected.

The seven students were presented with only scores (Students 1 and 4) or scores and homework completion (Student 7) or scores with detailed informal information (Students 2, 3, 5, 6). Students 1, 3 and 5 were presented with consistent scores and information while students 2, 4 and 6 showed inconsistent or borderline performances.

Student comments were tabulated and colour coded by category to allow for cross comparison. Each of these tables is included as Appendix 12. As an example, Student 1 is included in Table 5.1. No common approach to the sequence of categories addressed was evident in the small sample. It is likely that a larger sample would present many other variations in introductions, comment lengths, category sequences

and modifications. It was observed that the sequence of categories was used consistently by each respondent, although Respondent 2 elected not to include all categories, and the categories shown varied with the data set. Respondent 1 followed the category sequence used in the database, which was in alphabetical order. Respondent 1 included six comments for all reports. Respondent 2's reports included four, five or six comments. Respondent 3 began each report with an introductory comment, and selected a comment in each of the six categories. In some cases an additional comment was added and several comments were modified.

Table 5-1 Complete Set of Written Comments Composed for Student 1 by all Respondents

Table of report comments composed by respondents for Student1: Zebo Bloggs			
Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1 Zebo has been studious and interested in class activities, completing a range of tasks on time and to the highest standard. E2 Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. F1 Practical reports were accurately recorded and always written in the correct format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. P1 During practical work, Zebo demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Zebo's test results indicate an excellent understanding of the concepts taught this semester. T1</p>	<p>Zebo's test results indicate a very good understanding of the concepts taught this semester. T2 Practical reports were consistently written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment. P2 Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. F1 The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1</p>	<p>This semester Year 9 Purple have completed an number of activities. Zebo has been studious and interested in class activities, completing a range of tasks on time and to the highest standard. E2 A highlight of his semester would be the Eco systems fieldwork. Truly a great effort. Zebo was able to demonstrate that he could collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. F1mod Practical reports were accurately recorded and always written in the correct format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. P1 During practical work, Zebo always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently. S1 Zebo's test results indicate an excellent understanding of the concepts taught this semester. T1 The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1</p>	<p>Zebo's test results indicate a very good understanding of the concepts taught this semester. T2 Practical reports were accurately recorded and always written in the correct format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. P1 During practical work, Zebo demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2</p>

Written comments for students that were presented with scores or grades only.

The summarised and coded data for Student 1 is shown in Table 5.2.

Table 5-2 Coded Outline and Comparison of Composed Report Comment for Student 1: Zebo Bloggs

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
		Intro		Only provided with scores.	-	-	Intro	-
A1	T2		T2	High marks overall	A1	A1	A1	-
	P2	xtra	P1	no additional notes				-
F1	F1	comment	S2	no verbal comments	F1	F1	F1m	F2
P1	A1	F1 mod	F2		P1	P2	P1	P1
S2		P1			S2		S1	S2
T1		S1			T1	T2	T1	T2
		T1						
		A1						

It is apparent, that despite the differences in the sequence of comments and omission of some categories, that all respondents selected the first or second ranked comments, with some modification for Respondent 3. This fits with the very high scores achieved by the hypothetical student on all tasks. Respondent 2 did not comment on either effort or skills and this may be due to the absence of any comments or scores relating to effort or practical skills. Respondent 4 did not comment on the assignments or effort, in the absence of any evidence provided about either. Yet, in the absence of any information other than assessment scores, Respondents 1 and 3 were able to provide a comment on effort and skill.

The summarised data for Student 4 is shown in Table 5.3.

Table 5-3 Coded Outline and Comparison of Composed Report Comment for Student 4: Meba Meggs

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
		Intro		Only provided with scores.	-	-	Intro	-
A5	S5	S5	S5	marks range from 35-56%	A5	-	A5	-
S5	P4	F3	F5	no additional notes	S5	S5	S5	S5
F3	S5	P4	S5	no verbal comments	F3	F4	F3	F5
P4	F4	S3	P5		P4	P4	P4	P5
S4		S3	S5		S4	-	S3	S5
S4		A5	S5		S4	S5	S5	S5

For this hypothetical student, scores were much lower. While the student achieved scores between 50% and 60% for most tasks, one test and one assignment scored less than 40% and one task was not submitted. Presumably this evidence allowed Respondent 2 to feel able to comment on effort in this case. Respondent 2 still did not comment on skill, or on the assignment, possibly reflecting an inability to comment given there was no score due to non-submission. Respondent 4 again made no comment on assignments but provided a comment on effort – giving the lowest ranked comment. Respondents 1 and 3 gave the student the lowest ranked comment for the assignment. All respondents gave the second lowest or lowest comment for practical reports. Despite the fact that for two of the three topic tests the student achieved greater than 50%, Respondents 2, 3 and 4 categorised that as evidence of poor knowledge, while Respondent 1 identified it as satisfactory. In the absence of any notes about practical skills, Respondents 1 and 3 ranked the skills comment at the middle and lower level, perhaps reflecting the practical report scores of 11 and seven out of 20. Respondent 4 gave the lowest comment to practical work. Respondent 1 and 3 gave the field work, which achieved a score of 56%, a middle level comment, but Respondent 2 gave it a lower ranked comment and Respondent 4 gave it the lowest ranked comment.

Written comments for student presented with scores and printed informal notes.

The summarised data for Student 7 is shown in Table 5.4.

Table 5-4 Coded Outline and Comparison of Composed Report Comment for Student 7: Gar Whozit

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
		Intro		Scores range from 54 – 75%	-	-	Intro	-
A3	T3	S1	A4	Attentive, some work not done	A3	A3	A2	A4
S1	S2	F2	S2	No verbal comments	S1	S1	S1	S1
F2	P3	P3	F4		F2	F3	F2	F4
P3	F3	S2	P4		P3	P3	P3	P4
S3	A3	T3	S2		S3	S2	S2	S2
T3	S1	A2	T4		T3	T3	T3	T4

For this student, Respondents 1, 2 and 3 gave the topic test category a rating of level three reflecting scores of 54%, 58% and 70%. Respondent 4 appeared to view those scores less favourably giving a lower ranked comment. In the written comments the statements “attentive in class”, “work is fine” and some homework not done, present an inconsistent picture of effort. Respondent 3 gave the student the highest rating for effort, while Respondents 1 and 2 gave it only a middle ranked comment. Respondent 4 gave a very low score for effort; it may be that incomplete work had an impact on that decision. The second lowest ranked comments were given by Respondent 4 in all categories excluding skill. All other comments fell into the second or middle rank reflecting the scores of 65% to 75% on all non-test assessment. The additional notes appear to have provided sufficient evidence for Respondents 2 and 3 to provide comments in all categories for this student.

Written comments for student presented with scores and informal notes providing a case for compensation.

The summarised data for Student 2 is listed in Table 5.5.

Table 5-5 Coded Outline and Comparison of Composed Report Comment for Student 2: Bop Smith

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
		Intro		<p>Scores range from 49 to 95%. Performs better on tasks other than tests.</p> <p>Written notes positive about quality of work and behaviour, but identifies some content errors</p> <p>Verbal notes point out student's father has serious illness which impact on student's time and work.</p>	-	-	Intro	-
A1	F4	F3	F3		A1	A2	A1	A1
F1	P3	F2	F2		F1	F1	F2	F3
F2	S2	P3	S1		F2	F2	F2	F3
P2	F1	S1	P3		P2	P3	P3	P3
S1	F1	F4	F3		S1	S2	S1	S1
F4	A2	A1	A1	F4	F4	F4	F4	

For this student all respondents provided comments in each category. Respondents 1, 2 and 3 rated effort very highly, possibly in response to the printed comment describing written work as meticulous. On the basis of the comment “well behaved in the lab, asks great questions”, Respondents 1, 3 and 4 allocated the top ranked statement for skill which included the phrases “always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently”. Respondents 1, 2 and 4 allocated the fourth ranked “satisfactory” comment for tests, while Respondent 3 allocated that set of results a “good” rank. Despite a printed informal note that described the assignment as “fantastic” and a score of 19 out of 20, Respondent 2 gave that category a second ranked comment while the other respondents allocated the highest ranked comment. The score of 86% on field work allowed Respondent 2 to allocate the highest comment, while Respondents 1 and 3 gave the second ranked comment and Respondent 4 gave that the middle ranked comment. The set of rankings may indicate that the informal comments, suggesting the need for

compensation, have led to a supportive commendation of effort by Respondents 1, 2 and 3, but the other comments reflect the scores obtained for the task.

Written comments for student presented with scores and informal notes providing a case where achievement in low, student is disruptive and lack of parental support is highlighted.

The summarised data for Student 5 is listed in Table 5.6. This report showed the greatest amount of consistency between respondents, with all respondents giving the lowest rank for tests, practical reports and skills. The scores provided in the data set indicate that topic test scores were all less than 38% and while one practical report achieved a score of 8 out of 20 the other was not submitted, hence the data strongly supported a low ranking for tests and practical reports. The skill ranking would have been influenced by a printed note that referred to a warning about exclusion from practical reports and the lowest ranked comment included the phrase “needed to be reminded about the importance of safety in the laboratory” which was an appropriate report of the safety issues. While the notes indicated that the field work was copied from another student, respondents one and three chose to allocate a middle rank, perhaps indicating a wish to include less negative feedback in the report, or choosing not to follow up on copying, as it can be difficult in practice to differentiate between collaboration and copying as well as proving who copied what.

Table 5-6 Coded Outline and Comparison of Composed Report Comment for Student 5: Wod Johnson

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
		Intro		Most marks are below 40% Prac not submitted field work was >50% Notes refer to unsafe prac behaviour, copying work Verbal notes specify poor classroom behaviour and lack of parental involvement.	-	-	Intro	-
A5	F5	E5 mod	S5		A5	A4	A3mod	-
F4	D5	F3/4	F5		F4	F5	F5mod	F5
F3	S5	mod	D5		F3	F4	F3/4 mod	F5
P5	P5	P5	S5		P5	P5	P5	P5
S5	F4	S5	P5		S5	S5	S5	S5
F5	A4	F5		F5	F5	F5	F5	
		A3 mod						

While Respondent 3 consistently led with a comment on effort, Respondents 2 and 4 also chose to begin this report with a very low comment on effort reflecting the informal comments provided. Whilst the assignment was graded as 11 out of 20 the respondents ranked that score on level three, four and five. Respondent 4 did not provide a comment on assignments. The informal notes indicated that the task was submitted unfinished and this may have influenced the choice of comment rank – given that level three specified that the task contained the required information with a “good standard of presentation” while ranked comment five specified that the assignment contained some relevant information and “little effort was evident in presentation”.

Written comments for student presented with scores and informal notes providing a case of consistent high achievement with one uncharacteristic score.

The summarised data for Student 3 is listed in Table 5.7.

Table 5-7 Coded Outline and Comparison of Composed Report Comment for Student 3: Yort Jones

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
		Intro		Scores show test and tasks >80%, except field work	-	-	Intro	-
A2	T1	F2	F1		A2	A2	A2	A3
F3	P3	F5 mod	F2		F3	F3 mod	F2	F1
F4	F3	P2	F5		F4	F3	F5 mod	F5
P2	A4	S3	A3	Notes specify more work needed in presentation	P2	P3	P2	P3
S2	F3 mod	F1	S3		S2	-	S3	S3
T2		A2	P3		T2	T1	T1	T2
				Verbal notes say student doesn't like group work and had a fight during the field exercise.				

Whilst the data set for this student was intended to portray a strong academic performance across all tasks except the field work, the provision of verbal informal information describing a fight and an inability to work with a small group, appears to have had an effect on the report beyond the category describing field work. Printed notes only indicated that more effort was necessary in the presentation of work, which could imply something as minor as drawing margins or writing neatly. Presentation could influence the mark for assignment, field work or effort, but it is common for teachers to allocate a portion of marks to presentation, hence evidence of poor

presentation may be observed in those comments. However, Respondent 4 did not follow this approach. The transcript of the task indicated that Respondent 4 did not find the comment about more effort meaningful given the high scores obtained by the student; hence, the student was given a very highly ranked comment for effort. Marks for topic tests were 84%, 85% and 93% and Respondents 2 and 3 allocated the top ranking for tests while Respondents 1 and 4 allocated a “very good” rank rather than “excellent”. This may indicate that the percentage value attributed to excellence varies with the school contexts. While practical reports scored 80% and 85% the respondents allocated the second and third ranking for practical reports and in the absence of any information about skill, Respondent 2 included no skill comment but Respondent 1 allocated the second rank and Respondents 3 and 4 allocated the middle rank. It may be that the comment about not liking group work influenced the decision of the respondents about those categories.

Written comments for student presented with scores and informal notes providing a case of high effort and moderate academic achievement.

The summarised data for Student 6 is listed in Table 5.8.

Table 5-8 Coded Outline and Comparison of Composed Report Comment for Student 6: Fon

Ranked comment in order as written				Information categories provided to respondents	Comparability of rating			
1	2	3	4		1	2	3	4
A2	T4	Intro	A1	Scores range from 48 – 90% performs better in assignments. Notes: seeks a lot of clarification and data can be confused Verbal comments: student tries hard and seeks a lot of support	-	-	Intro	-
S4	S4	extra comment	S4		A2	A2	A1	A1
F2	P3	F1 mod	F2		F2	F2	F1mod	F2
P3	F2	P2	P3		P3	P3	P2	P3
S2	A2	S2	S4		S2	S4	S2	S4
T4	S4	T4	T4		T4	T4	T4	T4
		A1						

For this student the most consistent rating was for effort with all respondents allocating the middle rank. This is likely to reflect the printed comment that the student seeks a lot of clarification and the spoken comment that the student tries hard. It may be difficult to determine whether the student who seeks a lot of clarification is proactive or passive. The comment that the student “tries hard” may weigh the response away

from the student being passive. Those behaviours may also be perceived as irritating and the response in this case may tap into the respondent's experiences of similar students. Respondents 2 and 4 gave the student a low ranking for skill, perhaps influenced by indication that the student asks a lot of questions yet respondents one and three gave the student second rankings. Both the field work and the assignment tasks received scores of 90%, yet Respondents 1 and 2 both gave the second ranked comment and Respondents 3 and 4 gave the student the highest ranked comment. Respondent 3 gave a higher ranked comment in all categories for this student than did Respondents 1, 2 and 4.

Analysis of written comments in the process tracing task

Research Question 2a: Do formal grades alone provide sufficient information for teachers to compose valid report comments?

As report comments were written for all hypothetical students by the four respondents it can be stated that formal grades alone do provide sufficient information for teachers to compose report comments. However, determination of the validity of the comments requires deeper investigation and there is a proviso that the teacher must be supplied with an appropriate comment data base.

The ordinal rankings describing the comments were entered into SPSS to look for evidence of the impact of informal information on the comparability of the comments. Descriptive statistical analysis focused on variance, not specifically as a measure of validity, but to point to the reproducibility of ranking decisions from the kinds of evidence provided. Transcripts of the Process Tracing task presented in Chapter 6 will shed more light on the ranking decisions made by the respondents than statistical analysis of the ranks. As previously noted the written comments are evidence only of final judgements, not of the interim thinking used to write the comments (Lesh et al, 2000).

Variance in rankings between respondents and comment categories.

The total number of rankings for each hypothetical student over four respondents and six categories was up to 28 ranking decisions. Figure 5.1 shows the frequency of

each comment ranking. Taller bars indicate that the rank was allocated more frequently by respondents and fewer bars indicate that there is less variation in ranking.

The greatest frequency of highest ranked comments was associated with Students 1 and 2. Students 4 and 5 were more often given lowest ranked comments. Student 3 had the greatest diversity in comment ranks, while students 5 and 1 were the most uniform. Student 1's marks were consistently high and Student 5's marks were consistently poor.

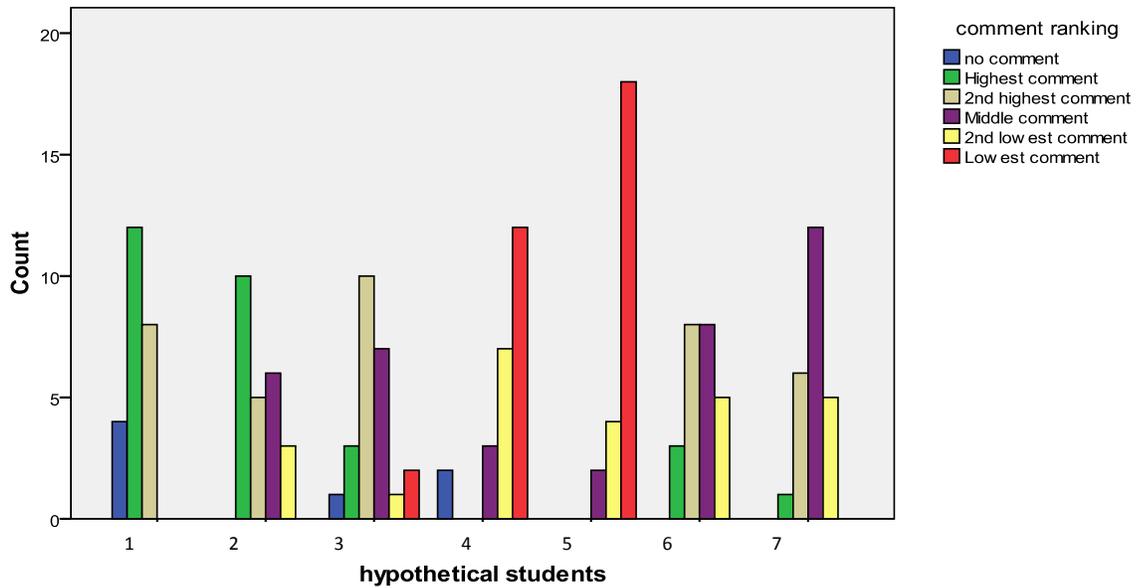


Figure 5-1 Range of Rankings Combined Across All Comment Areas for Each Student

Comparison of the variance within result groups for students and within category types are listed in Table 5.9. Student 1 and Student 4 were presented with only marks and no informal comments. For Student 1 there is low variance in the categories where marks were provided and marks were high. As no evidence was supplied for effort or skill these could only be inferred or omitted. Student 4's marks were just above 50% and included some marks well below 50% as well as non-submitted assignment work. The greatest variance for Student four was noted in the categories for skill and assignment work.

Student 7's evidence included very limited informal comments pointing out concept errors, a general effort statement (“always attentive, work is fine”) and a note of homework not being completed. Results from the questionnaire described in Chapter 4 indicated that many teachers retain notes of concept errors in tests and assignments to

support follow-up or remediation. The survey also noted that many teachers keep homework completion evidence. The greatest variance was noted in the category of effort, suggesting that respondents took into account the homework information. Some variance in the comment for fieldwork could be associated with the task being marked at 72%, and the opinion of the respondents as to whether 72% is a good, very good or satisfactory score.

Student 2 was presented with evidence indicating low to satisfactory marks, strong positive comments regarding effort and additional informal information indicating family circumstances that would warrant special consideration or compensation. There was very low variance in most categories for Student 2. The only category that respondents gave comments ranked below three was for tests.

Students 2 and 6 had very similar marks across all tasks to look for evidence that teachers valued effort and allowed special consideration. Student 2 had higher mean scores in assignment work, effort and skill comments, however, test and practical report category means were identical indicating that respondents did not misrepresent marks but would choose more favourable comments in other categories.

Student 3 was presented with evidence that included very high marks across all areas except for field work and one very general comment about presentation of work. Informal evidence supplied verbally to the respondents was that the student would not participate in group work and had a physical fight with another student during field work. For Student 3 there was low variance for categories where high marks were shown (assignment, prac reports and tests). The greatest variance was seen in skill, field work and effort, indicating some variation in the way that respondents dealt with the informal information. It was possible that a teacher may respond to an aberrant behaviour or result with Strategic Leniency.

Student 5 was presented with evidence indicating poor grades and poor classroom behaviour. There was no variance in ranking for prac reports skill and tests, little variance for effort. Variation in assignment and field work comments may reflect the importance of the comment about the unfinished task and copied work to the respondents.

Table 5-9 Comparison of Variance in Ranked Comments by Student, According to Assessment Category

Student		Minimum	Maximum	M (SD)	S
Student 1	Assignment	0	1	.75 (.50)	.250
	Effort	0	2	1.00 (1.16)	1.333*
	Field Work	1	2	1.25 (.50)	.250
	Prac report	1	2	1.25 (.50)	.250
	Skill	0	2	1.25 (.96)	.917
	Tests	1	2	1.50 (.58)	.333
Student 2	Assignment	1	2	1.25 (.50)	.250
	Effort	1	3	1.50 (1.00)	1.000*
	Field work	1	3	2.00 (.82)	.667
	Prac Report	2	3	2.75 (.50)	.250
	Skill	1	2	1.25 (.50)	.250
	Tests	3	4	3.75 (.50)	.250
Student 3	Assignment	2	3	2.25 (.50)	.250
	Effort	1	3	2.00 (.82)	.667
	Field work	3	5	4.25 (.96)	.917
	Prac report	2	3	2.50(.58)	.333
	Skill	0	3	2.00 (1.41)	2.000*
	Tests	1	2	1.50 (.58)	.333
Student 4	Assignments	0	5	2.50 (.50)	8.333*
	Effort	4	5	2.00 (.82)	.250
	Field work	3	5	3.75 (.96)	.917
	Prac report	4	5	4.25 (.50)	.250
	Skill	0	5	3.00 (2.16)	4.667*
	Tests	4	5	4.75 (.50)	.250
Student 5	Assignment	0	5	3.00 (2.16)	4.667*
	Effort	4	5	4.75 (.50)	.250
	Field work	3	5	3.75 (.96)	.917
	Prac report	5	5	5.00 (.00)	.000
	Skill	5	5	5.00 (.00)	.000
	Tests	5	5	5.00 (.00)	.000
Student 6	Assignment	1	2	1.50 (.58)	.333
	Effort	3	3	3.00 (.00)	.000
	Field work	1	2	1.75 (.50)	.250
	Prac report	2	3	2.75 (.50)	.250
	Skill	2	4	3.00 (1.16)	1.333*
	Tests	3	4	3.75 (.50)	.250
Student 7	Assignment	2	4	3.00 (.82)	.667
	Effort	1	4	2.75 (1.2)	1.583*
	Field work	2	4	2.75 (.96)	.917

Student	Minimum	Maximum	M (SD)	S
Prac report	3	4	3.25 (.50)	.250
Skill	2	3	2.25 (.50)	.250
Tests	3	4	3.25 (.50)	.250

* Variance of 1.00 or greater

The categories effort, skill and assignments show higher levels of variance than the other categories, with least variance associated with tests and practical reports. In the dataset provided to respondents, both of these categories were provided as raw scores. In terms of effort – Student 1 was provided with no additional information and it was noted in transcripts that some respondents chose not to address effort given the absence of specific information. There is substantial variation in rankings for effort for Student 7. This suggests some teachers view homework not being done as more serious than others.

The greatest evidence of variance is with Student 4 in assignment work. In this case one assignment task was not submitted and respondents may have elected to view that poorly or to feel unable to account for its non-submission. Variation in assignment work for Student 5 may be associated with the comment indicating that work was submitted unfinished. Greater variance in skill for Student 4 was noted, as no information was provided about skill performance and some respondents elected to omit it. Variation in skill comments with Student 6 may be linked to the informal comment indicating that the student seeks a lot of assistance during practical work and again this may have been viewed as a positive or negative trait.

A one way between subjects ANOVA was conducted to compare comment rankings for the hypothetical students between respondents. There was a significant difference between respondents at the $p < .05$ level [$F(3, 164) = 4.26, p = .006$]. Post hoc comparisons using the Tukey HSD test indicated that the means between Respondent 3 ($M = 3.43, SD = 1.39, 95\% CI [3.00, 3.81]$) and Respondent 4 ($M = 2.43, SD = 1.48, 95\% CI [1.97, 2.89]$) were significantly different.

Further univariate ANOVA was undertaken to identify the influence of provision of informal information and the different categories of comments in the written reports as covariates. No significant between factor interaction was noted. The differences between respondents was significant at the $<.05\%$ level, but the categories and informal

verses formal information factors were not significant nor were the interactions between factors.

Table 5-10 Tests of Between-Subjects Effects

Source	SS	df	MS	F	p
Corrected Model	94.615 ^a	47	2.013	.888	.673
Intercept	1104.193	1	1104.193	487.054	.000
Category	8.891	5	1.778	.784	.563
Respondent	31.912	3	10.637	4.692	.004
Informal	5.038	1	5.038	2.222	.139
Category * Respondent	21.168	15	1.411	.622	.852
Category * Informal	23.117	5	4.623	2.039	.078
Respondent * Informal	6.686	3	2.229	.983	.403
Category * Respondent * Informal	10.609	15	.707	.312	.993
Error	272.050	120	2.267		
Total	1798.750	168			
Corrected Total	366.665	167			

a. R Squared = .258 (Adjusted R Squared = -.033)

The contrast results matrix, Table 5.11, shows a significant difference between both Respondent 1 and Respondent 3 who taught in government schools with Respondent 4 who taught in an independent school.

Table 5-11 Contrast Results - K Matrix

Respondent in task	Contrast estimate (SE)	CI [LL, UL]	p
1 vs. 4	.92 (.36)	[.20, 1.64]	.013
2 vs. 4	.18 (.36)	[-.54, .90]	.625
3 vs. 4	1.15 (.36)	[.43, 1.87]	.002

The association between respondents and categories of data included in written reports is demonstrated more clearly in Figure 5.2. Even allowing for the fact that Respondent 2 did not comment on effort and skill in some cases, lowering the mean, there is a clear indication from the graph that Respondents 1 and 3 ranked the students more favourably. Respondent 3 was able to give higher ranked comments for skill consistently, perhaps using that category to reward or encourage students. There was least variation in comment rank provided for field work between Respondents 1, 2 and

3; however, Respondent 4 gave a markedly lower comment ranking for field work. Greatest variation in mean ranks was noted for skill and effort. This reflects the variation in how the respondents approached the category given the absence of marks or grades to provide insights into how to categorise the students and the decision of Respondents 2 and 4 to omit a comment in these categories in some cases.

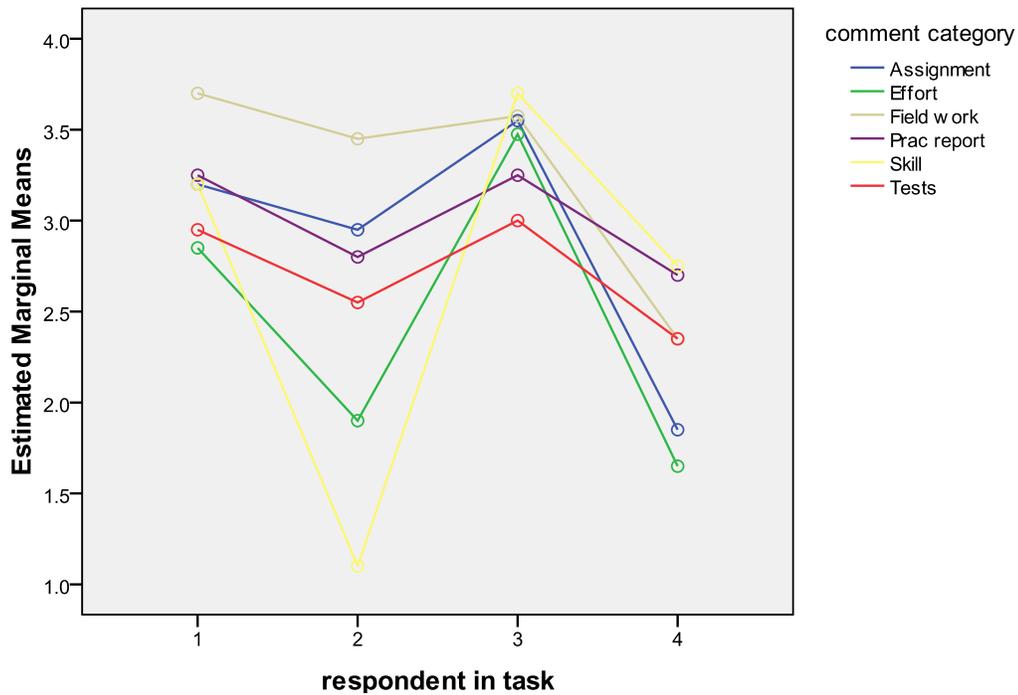


Figure 5-2 Estimated Marginal Means for Each Comment Category Shown According to Respondent

Comparing the line shape in Figure 5.3, shows a clearer association between estimated marginal means for comment ranking between cases where informal information was provided and where it was not provided, according to different respondents. The comment ranking for Respondents 2 and 4 indicated a substantial difference between comments provided with and without additional informal information and for respondents one and three there appeared very little difference. For Respondent 3 there is no difference between the means for informal information provided or absent and the mean comment ranks were highest. Content analysis of the process tracing task transcript indicated that Respondent 3 invested cognitively and emotionally in constructing knowledge of these hypothetical students and this may have removed the impact of lack of informal information. Transcripts indicated that both

Respondents 2 and 4 were more inclined to avoid making comments that could not be substantiated hence omitted comments, lowering the mean comment rank in this graph.

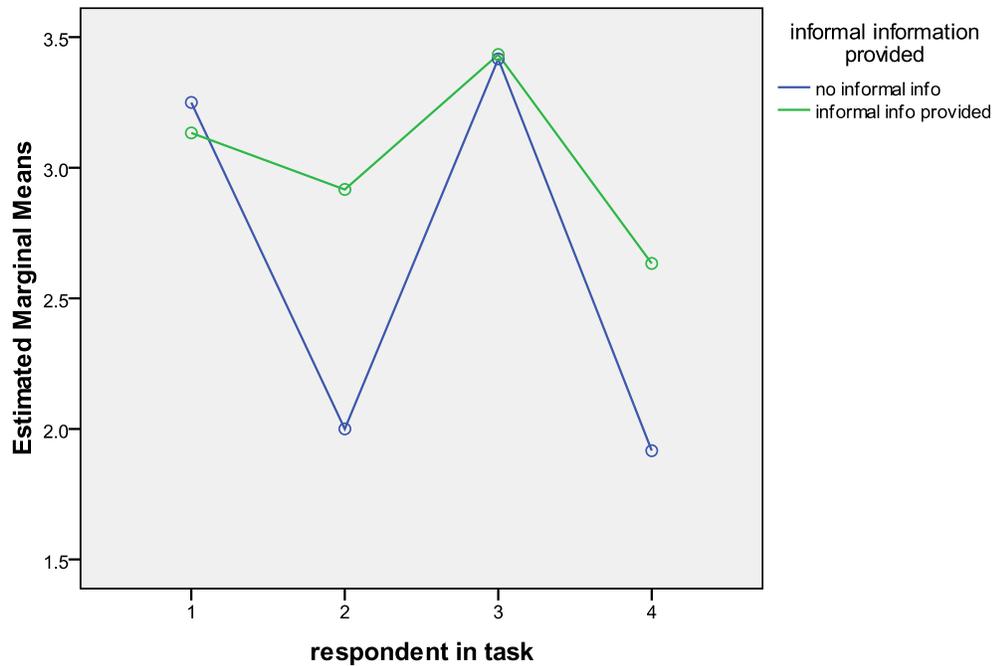


Figure 5-3 Estimated Marginal Means for the Provision of Informal Information or No Informal Information, According to Comment Categories

Figure 5.4 shows the association between estimated marginal means for comment ranking between cases where informal information was provided and where it was not provided, according to different categories of comment areas. It is clear that in the absence of informal information respondents gave the categories that were provided as grades with higher ranked comments than those where informal information was provided. This was not the case for assignments. The categories for effort and skill had lower means when no informal information was provided but also higher means than graded categories indicating the teacher had been prepared to use these categories to provide reports with more encouraging aspects to compensate for lower grades.

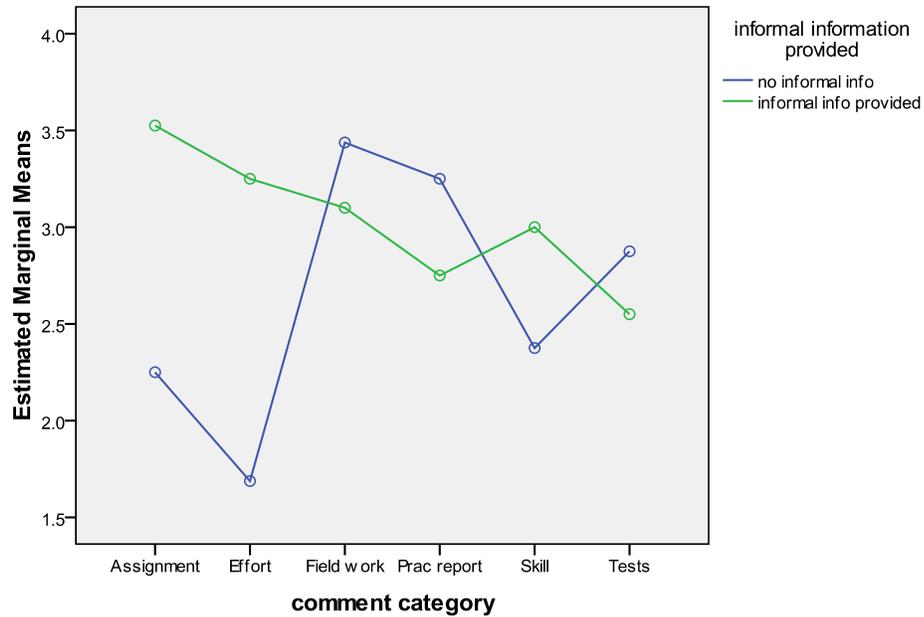
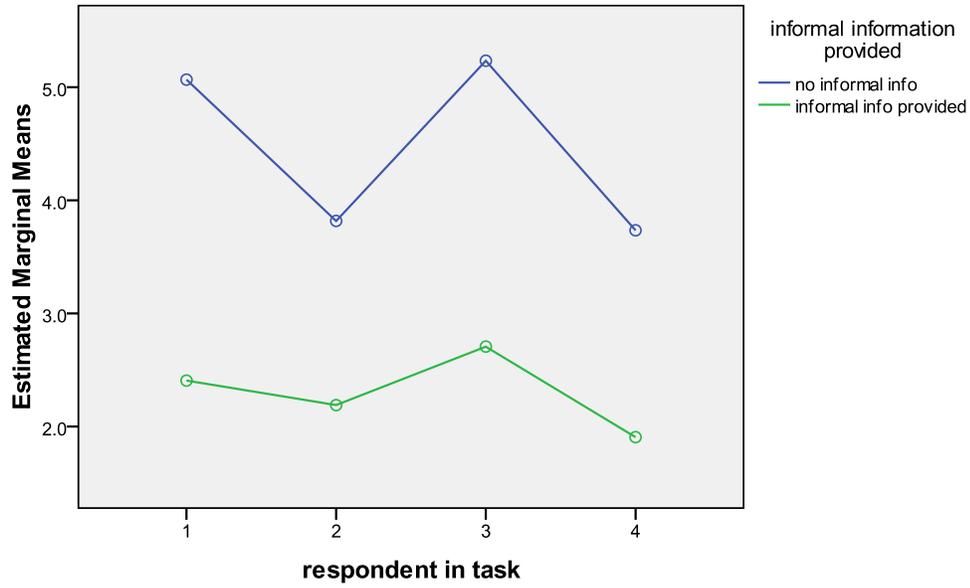


Figure 5-4 Estimated Marginal Means for the Provision of Informal Information or No Informal Information, According to Comment Categories

Univariate ANOVA was conducted, using averaged percentage scores for each of the graded categories as covariates in the exploration of the relationship between the provision of informal information and the mean comment rank given by respondents. When no informal information was provided means were higher ($M = 4.46$, $SE = .91$, $95\% CI [2.67, 6.26]$) than when informal information was provided ($M = 2.30$, $SE = .37$, $5\% CI [1.57, 3.04]$). Comparison of means for the provision and absence of additional informal information, given marks as covariates, and according to the different respondents is shown in Figure 5.5. The differences in means are readily apparent. This may suggest that informal comments with a negative character of any degree had an impact on the ranking of the comment chosen.



Covariates appearing in the model are evaluated at the following values: Testmarks = 59.71, Percentage mark = 64.71, percentage score for fieldwork = 71.14, percentage for assignment = 69.71

Figure 5-5 Estimated Marginal Means for the Provision of Informal Information or No Informal Information, According to Respondents, Given Percentage Results as Covariates

Research question 2a, asked: “Do formal grades alone provide sufficient information for teachers to compose valid report comments?” This exercise shows that it is possible for a science teacher to compose a written report for a hypothetical student, given an available comment database with comments relating to relevant formal assessment tasks, and the marks achieved on assessment tasks. The respondents to this task, as experienced science teachers, would be able to make inferences from the data provided and may have been able to associate the notes and grades with prior knowledge of actual students and tasks. Without the repertoire of knowledge and skills gained through personal experience, it may not have been possible for respondents to produce even a facsimile of a valid report. The validity of the comments for the student cannot be ascertained without more detailed knowledge of the student and their performance on the tasks.

Research Question 2b: What teacher thinking is evident in the written report comments for a small number of hypothetical students?

Written report comments do not provide explicit evidence of teacher thinking during the reporting process but analysis of comments can point to the kinds of judgements made. To investigate how respondents associated formal scores with the

comment rankings, data was cross tabulated and a scatter plot of averaged percentage scores for tests, practical reports, field work and assignments against the rankings given by the four respondents was given.

The association between comment ranking and the averaged scores is shown in Figure 5.6. There is a significant association between percentage scores and comment rankings as rank is determined from scores. Obviously the graph indicates a trend for an increasing comment rank as scores get higher.

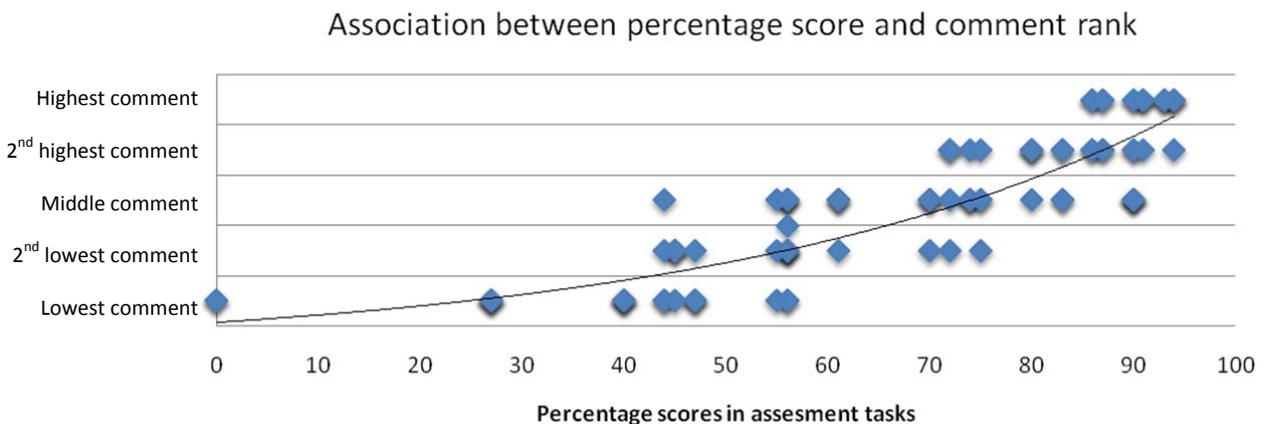


Figure 5-6 Association between Increasing Averaged Scores and Relative Comment Rank

The scatter plot shows the highest comment rank agreement between respondents for marks below 40%. Almost all scores under 50% were given lowest or second lowest ranked comments. Highest rank comments were given to scores over 85% by some but not all respondents. For scores that fall between 45% and 90% there is considerable rank variation, pointing to varying interpretation of the meaning of achievement descriptors.

Cross tabulation of categories of scores and the comment ranking provided by respondents are provided in Appendix 13. There was greater agreement in rank allocation for topic tests than for field work or assignments, particularly for marks that were at a passing grade and above, that is between 45% and 80%. The greatest consistency in mark allocation in each type of assessment was seen with very low and very high marks.

Whitmer’s Utility framework for marking judgements (1983), shown as Figure 2.4, is a decision making model that explains the difference in cognitive approach between clear-cut results and more borderline or subjective cases. The model indicates that marking judgements are shaped by how well marks fit within grading categories and by the effort and cooperation shown by the student, hence marking and grading decisions are grounded in the activities that occur in the classroom. When marks clearly fit a grading category the grading decision was a *Procedural level* decision. When the grades were not consistent or were moderate results, the grading decision was a more complex *Contingency level* decision, taking into consideration the effort and the behaviour of the student.

In the Process Tracing task, the judgements made by the respondents were comment ranking rather than grading. Student scores and informal evidence of effort and behaviour are still likely to influence comment ranking. Table 5.12 categorises student information according to the characteristics used in the modified decision tree based on Whitmer’s (1983) Utility framework for marking judgements.

Table 5-12 The Profile of Hypothetical Students according to Decision Tree Characteristics

	Formal information provided only	Formal and informal information provided		
		Positive effort & behaviour	Negative effort or behaviour	Neutral statements
Consistent or extreme scores – <i>Procedural level decisions</i>	Student 1		Student 5	
Inconsistent or moderate scores – <i>Contingency level decisions</i>	Student 4	Student 2* Student 6	Student 3	Student 7

Student 2* is presented as a case for the Principal of Compensation (Marland, 1977)

The degree of variation in comment rank allocation may be evidence of the respondent following Procedural level decisions or Contingency level decisions. Less variance in comment ranks is noted for the hypothetical students with consistently high or low scores, that is Students 1 and 5. Least variance was seen for Student 5 with all respondents allocating the same comment rank. The additional negative informal information about behaviour and effort may have assisted with these judgements. Greatest variance was seen for Student 3 who had very high scores and negative informal information about behaviour.

Student 4 had inconsistent and low marks but this student was provided without additional information regarding effort and behaviour, so comment ranking decisions could only be procedural unless inferences could be made about effort from scores. In fact, Student 4 recorded the greatest number of no-comment responses, due to lack of evidence.

Variance found in the task cannot be isolated from the characteristics of the respondents, especially given one way between-subjects ANOVA indicated comment rankings by Respondent 4 varied significantly from Respondents 1 and 3. However, statistical analysis of the data indicates that decisions on ranking comments were more consistent when marks were extreme – either very high or very low. When marks were moderate, there was less consistency indicating more complex judgements were occurring. This effect was most pronounced in allocating comments from test scores, rather than formal scores from practical work and assignments. Further insight into ranking decisions for the Contingency level decisions may be available from the transcript data presented in Chapter 6.

Research Question 2b asked: What teacher thinking is evident in the written report comments for a small number of hypothetical students? While the thinking that allowed teachers to allocate comment ranking could not be determined from the worded report comments, the presence and absence of comments in particular categories can be associated with the presence of salient information. When only scores for assessment tasks were provided some respondents did not provide comments on effort and practical skills and some were able to allocate a comment. There was evidence that comment ranking relied on achievement descriptors that held different meanings for the teachers in different contexts. Greatest consistency in comment ranking was seen for the hypothetical students that presented with consistent scores and pointed or specific supplementary information.

Summary

The comparison of reports composed by the four respondents showed substantial variation in the approach to the task. The variation in approach was seen in the time taken to complete the Process tracing task, the need to modify the comments provided, the sequence of comments followed and whether this was identical with each student or

varied according to the provision of informal information. The following dot points list specific observations:

- The sequence of categories was likely to be replicated in subsequent reports for Respondents 1 and 3.
- Respondent 2 selected categories for comment on the basis of information supplied hence did not comment on all categories in all reports.
- The allocation of ranking of comments for topic tests appears to depend on an individual belief about what the descriptors (*excellent, very good, good, satisfactory and poor*) mean and what range of percentages they equate to. This may depend on teaching context. There was less difference between the rankings when marks fell below 40%.
- In all cases there was only one or two rankings difference between the rankings selected by the four respondents. Both printed and spoken comments describing informal observations influenced the rankings selected in one or more categories. When the informal observation described a negative behaviour the respondents were most likely to select the same rank.
- Statistical analysis found that there was a significant association between the ranked comment given in the report and the individual who completed the report. It is not possible to generalise the findings from these four individuals to the teaching sector they come from, but it supports the theoretical assertion that teaching context will influence the way a teacher composes reports.
- Statistical analysis supports the assertion that the provision of informal information has an influence on the level and kind of ranked comments that were given. Two possible factors highlighted here are the reticence of two respondents to provide comments in categories when evidence was not provided and when controlling for actual percentage marks a difference in comment rank was evident, between those where informal information was provided and those where it was not.

In response to Research Question 2a, it is possible to produce a report comment that is informative if only supplied with formal grades, provided there is access to a useful comment database. The ability of the respondents to compose reports is also

likely to be enabled by the professional knowledge and experiences of the respondents. When making sense of the information provided and reinterpreting it as comment ranks the respondents would have drawn on previous experience of report writing, assessment, student management, contact with the parents of previous students, structures and guidelines for report writing in the current and previous workplaces, and their personal experiences of receiving report cards. This may be better explained in the interview responses to the task and in the transcript of the Process tracing task.

The provision of informal information has an impact on rank allocation and it is likely to improve the validity of comments made. In response to Research Question 2b, there is evidence of both procedural and Contingency level judgements being made about the allocation of comment ranks to particular grades, depending on how clearly scores fit within ranks. The characteristics of these judgements should be presented in the verbalised thinking which is presented and analysed in Chapter 6.

Chapter 6. Analysis of Verbalised Thoughts about Comment Writing

Overview

The purpose of the second phase of this study is to explore the decision making and reasoning that occurs during the report comment writing process. Research Question 2b is the focus of this chapter. Research Question 2b asks what teacher thinking is evident in the verbalised commentary of the report writing process for the hypothetical students. Chapter 5 gave evidence that the information available influences the way reports are written. In Chapter 6, the reasoning followed in composing reports will be explored. Research Question 2a will be revisited at the conclusion of this chapter following the investigation of validity in report comments.

The four participants in the process tracing task were recorded on an analogue voice recorder while completing the comment writing task. After the recordings of the process tracing task were transcribed, the data was analysed following Hycners (1985) guidelines for phenomenological analysis of interview data, as described in Chapter 3. The four transcripts and the respondent's written statements were used as primary documents in the thematic analysis using the qualitative analysis software ATLAS.ti. (2009). In an unconventional approach to analysis, a summary of the themes identified from the transcripts of Process Tracing task and interview comments are presented at the start of this chapter. Only the themes relating to the thinking and judgement processes will be used in the discussion in this chapter.

Discussion will begin with an outline and comparison of the approach to the task followed by the participants. This will be followed with student-by-student comparison of the comments to fully explore the evidence of cognitive strategies identified in the transcript. A discussion of the initial themes and the resulting consolidated themes, including a thematic network model of themes will be presented. Concentrating on the themes relevant to Research Question 2b, findings will be compared against Brookhart's Continuum of validity in grading (1993) and Whitmer's Utility framework for marking judgements (1983).

Themes in the Transcripts

Coding of data in this study was inductive consequently the data was fully coded twice. Preliminary identification of themes led to a range of units of meaning with imprecise or overlapping meanings; the first coding process was very valuable in clarifying the meaning of terms used as codes.

Themes identified included: (a) issues with the process tracing task including the recall of informal information, (b) the wish to modify or individualise reports to reflect the respondent's preferred approach, (c) choosing the level of comment from scores, grades or percentages, (d) choosing the level of comment from informal information such as notes or comments, (e) choosing the level of comment from inferences made about the assessment task or scores or comments, (f) inferring characteristics of the student or aspects of their performance from scores, grades or percentages, (g) inferring characteristics of the student or aspects of their performance from informal information, (h) reviewing or surveying information provided about a student to simulate knowing a student, including looking for consistency, contradictory information or reasons for aspects of performance, (i) checking the logic, validity or consistency of comments written, (j) checking the appropriateness of comments written and considering the parents as the report recipients, (k) personal response to students, or checking on the intention for the comment or about the judgement, and (l) individualising or modifying comments to best reflect the information about the student.

Comments made by the respondent prior to beginning the task and the transcript of the follow up interview were also explored for themes, although the content of the interview comments will be considered in Chapter 7. Thirteen themes emerged, including nine of the themes identified in the process tracing task and four additional themes, relating to the principals of Compensation and Strategic Leniency (Marland, 1977), the significance of teacher knowledge, the significance of knowledge held in the faculty and the value of informal printed notes.

The second coding of data using AtlasTI identified additional codes: The survey of data that preceded composition, the recognition of consistency or inconsistency in marks and information and looking for highlight or reward or encouragement comments. Preliminary themes were reclassified, according to the Table 6.1. It was appropriate to group inferences and categorisation from verbal information and printed

notes together. Each reference to parents followed from a consideration of the appropriateness of the comment so it was determined that they were grouped together appropriately.

Table 6-1 Themes that Emerged from Transcript Data

Preliminary themes	Combined themes
<i>Ranking of comments from score, Ranking from scores, Performance in tests, Performance from scores Rating by score, Meaning of scores for test, Meaning of poor, Meaning of OK, Meaning of good, referring to grades/marks, meaning of scores</i>	Categorising from formal results (marks/scores/grades)
<i>Ranking from informal comments, Ranking from comment, Selecting comment using evidence, Categorising from informal, categorising student from notes and inferences, ranking comments categorising student from notes and inferences</i>	Categorising from informal comments (either written notes or verbal comments) Categorising from inferences
<i>Inferences from mark, Inference from scores, inferring characteristics of the student's performance from score, inference about effort from scores</i>	Inferring from formal results (marks/scores/grades)
<i>Inference from comment, Inference from informal comment, inferring personal characteristics of the student from notes, inference about student from verbal information</i>	Inferring from informal comments (either written notes or verbal comments)
<i>Meaning of scores, Review scores, checking scores, Review informal notes, Checking on scores, checking on informal comments, Performance in test, Noting informal comments, Review of information, Reading sections of data, Seeking evidence, Seeking evidence from informal data, interpretation of the assessment information</i>	Surveying the information to get an understanding of the student
<i>Lack of information, Aspect of process tracing task Aspect of comment writing, Inadequate informal information Inferring assessment content</i>	Lack of information [Analysing] Teacher Professional knowledge
<i>Evidence of balancing scores against informal comment</i>	Considering impact of informal information on marks [Analysing]
<i>Checking on comment's accuracy, Checking on comments, Accurate comment for reports, checking on the logic of the comment given, checking on logic of decision, checking on consistency of decision</i>	Checking the accuracy or validity of comment
<i>Checking on the appropriateness of the comment given, personal response to student or checking on personal motivation for decision or judgement about decision, what can be commented on</i>	Checking the appropriateness of the comment
<i>Individualising comment, modifying comment personalising the report, Reflecting on Effort, modifying report</i>	Modifying or Individualising comment
<i>Interpreting the results for the report</i>	Encouraging or highlight comment [individualising comment]
<i>Consistency of information Consistency, consistency of good scores Ease of writing report – consistent comments</i>	Consistency and contradiction [Analysing]

<i>Reference to parents</i>	Parents [Appropriateness of the comment]
<i>Teacher expectation, emotional character to comments, personal response to student or checking on personal motivation for decision or judgement about decision, personal statement</i>	Personal response
<i>Style of comment, Aspect of process tracing task Issues with the process tracing task, Structuring the report, trying to recall informal information, comment on the difficulty of the process tracing task, personal response to the reporting, aspects of writing the comment</i>	Process of report writing
<i>Effort, focus on effort</i>	-
<i>Issues with the process tracing task – not knowing the students</i>	Knowledge of students

Re-reading the transcript indicated that the interpretation of *effort* as a separate theme was invalid as most of the references to effort related to the category called effort in the Access database and it was no more valid as a theme than field work. Other references to effort were grouped with inferences from data. All transcript data from the Process Tracing task was then reclassified using these eighteen clusters of meaning.

Relationships amongst these clusters of meaning were established by grouping the themes within organising themes, using the approach described by Attride-Stirling (2001) in order to produce a preliminary thematic network diagram. Initial categorisation produced four organising themes: (a) features of the interaction between the respondent and the task, (b) categorising: choosing the ordinal ranking of comment from data provided, (c) inferring characteristics of the student or aspects of their performance from data provided, and (d) respondent as teacher, holding professional knowledge, responding to the student and auditing the comment set. In analysing these groupings it became apparent that cognitive strategies featured in three of these categories and aspects of professional knowledge, such as knowledge of students, personal response to students and experiences relating to the respondents interaction with the Process Tracing task, could be separated from the cognitive strategies during the investigation of Research Question 2b.

Figure 6.1 shows a preliminary thematic network diagram, detailing the cognitive strategies node and themes. The themes relating to professional knowledge and the respondents response to the task are grouped on the left and will be analysed further in

Chapter 7. The grouped cognitive strategies will be the basis of analysis of the transcript of the four respondents' verbalised thoughts.

The organising themes of *surveying*, *classifying*, *analysing*, *individualising* and *checking* are displayed clockwise around the node for cognitive strategies. Surveying the information precedes the other cognitive strategies. Checking comments are subsequent to other strategies. Deeper analysis will explore the sequence of strategies and interactions. Whitmer's marking judgements framework (1983) and Brookhart's Continuum of validity in grading (1993) will also be used to understand the cognitive strategies used during report writing.

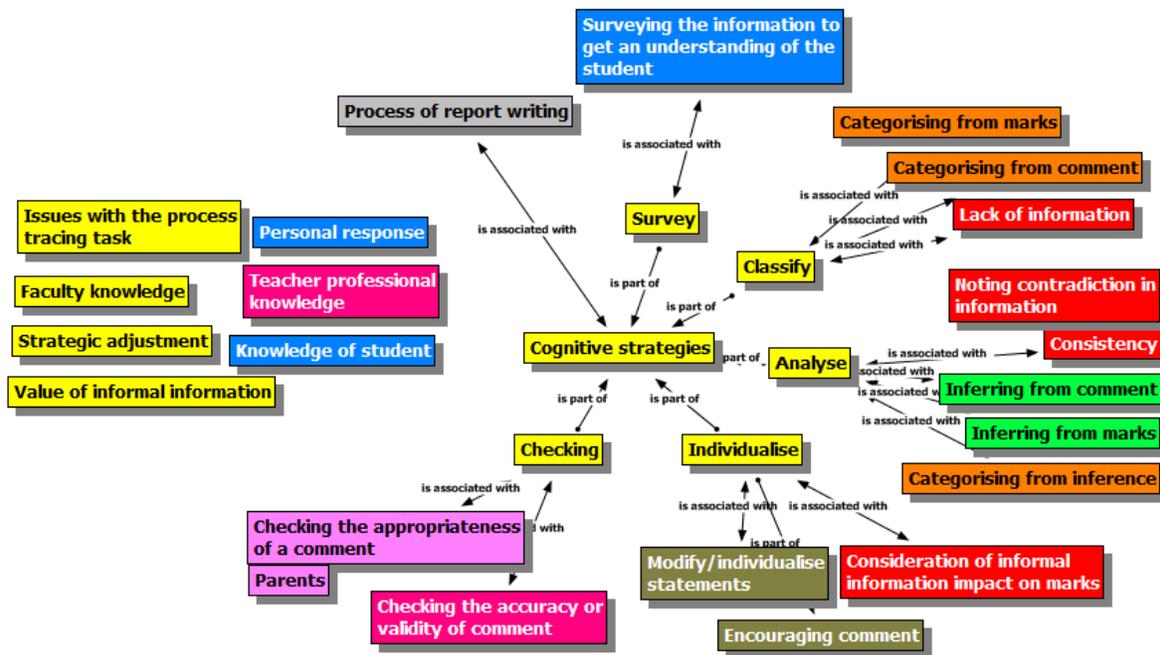


Figure 6-1 Preliminary Thematic Network Diagram elucidating Cognitive Strategies

The Process Tracing Task

Discussion of the Process Tracing task begins with a description of the pace and process followed by each of the respondents. This highlights the differences in approach to the task by the four respondents. Transcripts are included as Appendix 14. Analysis of the verbalised thoughts will follow.

Conduct of the process tracing task.

The time taken to complete the Process Tracing task and the verbosity of the respondents is contrasted in Table 6.2, which collates the time and number of words used to address each hypothetical student. Times are presented rounded to whole minutes. The count was taken from the first clear word referring to the new subject. Linking phrases between students were not included. This information is useful as it gives an indication of the ease with which each report was addressed and it points to differences between each respondent.

Table 6-2 Recording Details for each Respondent showing approximate Time in minutes and (*Word Count*) per report

	Student 1	Student 2	Student 3	Student 4	Student 5	Student 6	Student 7
Respondent 1	4 (122)	1 (195)	2 (150)	2 (232)	2 (320)	3 (320)	1 (182)
Respondent 2	4 (180)	3 (292)	2 (282)	4 (324)	3 (199)	2 (262)	2 (183)
Respondent 3	8 (457)	5 (676)	6 (498)	4 (452)	3 (222)	3 (372)	2 (205)
Respondent 4	3 (97)	3 (79)	4 (31)	3 (59)	2 (21)	5 (15)	1 (23)

Respondent 1 elected to complete the task in the order of the assembled information cards, which was sequential from Student 1 to Student 7. After familiarising the respondent with the comment database and the way that it was structured, the respondent indicated that task was understood and went on to complete it in the shortest amount of time. Respondent 1 spent a longer amount of time on the first report than all of the others. One reason that the task was completed very quickly was that all of the comments were written by selecting the ranked comment from the database without any additional comments or any modification of those comments.

Respondent two also elected to complete the task in the order of the assembled information cards, which was sequential from Student 1 to Student 7. Respondents 1, 2 and 4 spent similar amounts of time on the first completed report, however Respondent 2 verbalised thoughts in more detail hence has a higher word count. The higher word count was noted across all of the hypothetical students, although Student 4 provoked the longest commentary.

This data set for Respondent 3 was the first transcript to be analysed. This respondent elected to complete the task out of sequence, hence selected Student 1, then Student 5, Student 2, Student 3, Student 4, Student 6 and Student 7. There were quotes in the transcript indicating that the respondent chose the order on the basis of how well the informal data was recalled and how “easy” to compose the report was perceived to be. The respondent also indicated a tendency to invest substantial time in the first few reports, deciding on an outline, composing an introductory comment and coming to terms with the kind of information available and how it was to be conveyed.

Respondent 3 invested the most time, although spoke less over the first student – this would suggest that the respondent was reading and thinking about the information on the cards and the database, hence vocalised less. In comparison, the report for Student 7 was produced with less than half the words in a quarter of the time. The second report for Student 5 was produced over a similar time to Student 2, the third report; however the transcript included almost 36% more words. The fourth to the seventh reports were all composed in less than half the time taken for the first report.

Respondent 4 speaks English as an additional language. The commentary was much briefer than the others and the audio record included long pauses. This indicates that the respondent was not comfortable with voicing thoughts and also indicated some discomfort in being recorded. This task was recorded over the homeroom period of fifteen minutes and extended into recess and the significantly louder background noise obscured the recorded words. The commentary on the first report was the longest as the respondent came to terms with the task. Commentary fell away, particularly after Student 3 and a very long pause in commentary was noted towards the end of the recording, coinciding with movement of students outside the room. The overall time of the recording reflected the time taken to compose the report but much of the opportunity for commentary was lost.

Analysis of Verbalised Thoughts from the Process Tracing Task

Verbalised thoughts for Student 1.

Respondent 1 noted that for the first student “*all the marks appear good, so it is straightforward*” to write the report. The student’s test marks ranged from 81% to 90%, practical marks averaged at 91%, field work at 94% and the assignment was 92.5%. In

constructing the report, Respondent 1 utilised two strategies: categorising from marks (four instances) and inferring from marks (one instance). Some of the categorising statements include: *“They were high marks for the field work”*, *“the mark is high ... so the first category for that”*, *“test marks indicate the highest comment”*. The inference made was that high marks indicated that the student had behaviours associated with a positive statement on effort. The respondent said, *“Because the marks are high it would be reasonable to say they’d be studious and interested”*. Respondent 1 noted consistency in the report and also noted the absence of additional information to assist with the decisions: *“In this case, there isn’t a lot of information on the card so ...”*

Respondent 2 used three strategies in the report writing process: categorising from marks (five instances), inferring from marks (one instance) and categorising from inference (one instance). The inference Respondent 2 made related to the practical report tasks *“I guess, if you were going to lose a mark or two marks it is going to be errors in graphs or maybe lack of detail”* and this inference led to the choice of a second ranked comment. The second respondent also noted the absence of information with which to comment on effort, *“I don’t know anything about the way they behave in class ... so ... I might just leave that one out”*. This quote also shows a cognitive process of assessing the accuracy or validity of the decisions made in composing the report.

In composing the report comment for the first student, Respondent 3 made a number of comments about the overall process used to write reports making this task fit with a preferred style of report writing (three instances). Respondent 3 also particularly noted difficulties with aspects of the Process Tracing task (three instances). The commentary included many statements which were read from the comment database implying the cognitive processes being followed but without specific verbalising of the actual thoughts. There were three instances of categorising from marks and one instance of inferring student performance from marks. An example of a categorising statement was: *“topic tests ... indicate excellent understanding.”* This respondent checked the validity of the chosen comment in two instances and modified comments to his preference. Respondent 3 was notable in composing a highlight or praising comment for this student.

Respondent 4 prefaced the Process Tracing task by stating that it isn't possible to write comments if you don't know the students, that the report to parents could really only include the grades; the comment was "*Again, something you know if you have to write the comments for students to never taught and you have only the grades, I don't think you can make a statement. I think you can only give the grades by themselves. You can't have any input, I mean, because you have these you know comments which don't tell me anything.*" In approaching the report, Respondent 4 also used two strategies categorising from marks (four instances) and inferring from marks (one instance). The inference made was that high test marks indicate a good level of effort from the student. The respondent's discussion of the first report again notes the limitation on what can be said with no information about the student: "*Alright we are settled with this because I haven't any other things to comment on, you know.*"

Verbalised thoughts for Student 2.

Student 2's test marks ranged from 49% to 61%, practical marks averaged at 70%, field work at 86% and the assignment was 95%. The information card included a note that the students work was presented meticulously, included a note that the assignment was beautiful work, that the student was well behaved, seems attentive and asked great questions. There was also a note of some conceptual flaws noted in tests. Respondents were also told that the hypothetical student's father was seriously ill and that the student had little time for homework while visiting the hospital in the evenings, hence was often seen working in the library at lunch time. This information was provided verbally, as it is the kind of pastoral information noted, but not recorded by teachers. The student displays a high level of responsibility by working through lunch time and the combination of information was designed to elicit demonstration of compensation towards the student in the report.

The additional informal information clearly allowed for a more diverse range of cognitive strategies, and reflection on the significance of the information provided. Respondent 1 began the writing process by surveying the information to highlight what was relevant including a summary descriptor of marks over all: "*Presentation of work is meticulous. Marks are very middling ... She is attentive, gets it confused, asks very good questions.*" Respondent 1 categorised comments from marks (five instances) and also categorised comments from informal information or comments (four instances).

Some examples of categorising statements include: *“the work is meticulous, so I’ll give her a very good comment”*, *“she is attentive and a good kid so, ‘enthusiastic member of the class’, ‘asks key questions is a good one”*, *“but she didn’t get a really high mark, so the second comment is more appropriate”*, *“A good understanding’? ...Yes I think it’s fair to say good understanding at about C / B standard”*. The provision of additional information clearly contributes to the decision making in composing reports. In considering whether to use a particular phrase in a comment, Respondent 1 decided, *“Always followed instructions meticulously? ...Yes, It says she is attentive, asks great questions, beautiful work”* implying that there was sufficient evidence in the behaviours described on the information card to infer that she followed instructions meticulously.

Respondent 2, twice surveyed through the information provided for the student to get an understanding of the student and twice checked the validity of the ranking decision or the appropriateness of a comment. The respondent categorised using marks (three instances) and comments (four instances) and in one instance made an inference from a comment: *“beautiful work, so she’s obviously hard working”*. That respondent noted the pastoral information provided but elected not to adjust the comment to account for that: *“that would have an impact on ... maybe the test mark but I think satisfactory is still right for that”*. For this student, the respondent used the information provided to include a positive comment as a reward: *“Effort? It says she asks great questions so maybe I’ll give her a really good response there”*.

Respondent 3 also began the task for this student by surveying through the information to get an understanding of the student. This respondent categorised from marks (five instances) and made inferences from information provided as marks and comments *“I believe this student is an enthusiastic member of class”*. Informal information was used to help categorise the most appropriate comment for *“Practical work ... Good, no issues with that. Good kid”*. The informal information about the student’s pastoral situation featured heavily in this respondents approach to the report. The respondent felt it was necessary to acknowledge the impact of the situation on marks and initially noted this in the comment *“when talking about the light test. I might state a great effort (emphasis indicated in speech), in light of current circumstances.”* And *“these results*

are not necessarily an accurate representation. He could have done better had he been or she been there all the time like 100% attendance because obviously spent time away to visit or attend hospitals.” The respondent reconsidered the appropriateness of that comment and subsequently removed it. The explanation given was: *“I think the way I’d give feedback there is, isn’t the report. I’d take that student aside, assuming I knew them well enough, good enough for the report and I’d state now those results, yes, you demonstrated a good understanding but I know you can do better ... um ... so that’s me providing feedback and at a parent-teacher interview I would probably make that more personable as well, so I don’t think it is appropriate to write that comment in the report because it is too formal and it is also a little bit um ... what would you call it ... ah, not arrogant looking down upon ... condescending, so I don’t think ... that’s not appropriate.”*

Respondent 4 made only a brief verbal statement while composing this report, although the written comment was completed over a time frame of about two minutes.

Respondent 4 began the process with a survey of the information provided, in exactly the same way as the other three respondents. The brief statement was: *“The marks there... it is there good. Test is OK, Makes a lot of mistakes.”* This statement alone indicated categorising from marks but also the statement *“makes a lot of mistakes”* is an inference from the written information card comment highlighting areas of concern in understanding concepts as well as from perusal of the raw scores.

Verbalised thoughts for Student 3.

Student 3’s test marks ranged from 84% to 93%, practical marks averaged at 83%, field work at 44% and the assignment was 80%. The information card included a note that more effort was required in the presentation of work. This was included as an indicator of the reason for the slightly lower marks in practical reports and assignment but it could not account for the very low mark for field work. Respondents were also told that the student hates group work and during the field work task the student had a physical fight with another group member. The implication is that this incident led to a poor quality of work in the task. Phase one of this study indicated that only 13.3% of the teachers who participated in the survey would always make a note of this kind of

incident in their informal record, but the information would be relevant and would be part of the teacher's knowledge of students.

Respondent 1 surveyed the available information about the student before beginning the composition of worded comments. Respondent 1 relied strongly on the cognitive strategy of categorising from the mark information provided (five instances) as well as categorising from a comment (one instance). The comment about more effort in presentation influenced the respondents allocation of a comment in the Effort category: *"6/20 marks are excellent therefore the student must make a fairly good effort but the notes say more effort in presentation so I'm going to select the third comment with 'positive approach'."* All respondents for this student recorded more dominant use of marks information to decide how to comment. Two reasons for this may be the very high marks obtained – particularly for tests and also because the informal note was very brief. The respondent referred back to the marks when checking the appropriateness of a selected comment: *"Very good understanding makes sense because the marks are certainly well above an A."*

Respondent 2 began the report writing process by surveying the information about the student to build an understanding of them. Respondent 1 made use of four cognitive strategies during the report writing process: categorising from marks (six instances), making inferences from marks (two instances), categorising from comments (three instances) and checking the accuracy and validity of comments used. The respondent modified the comments (two instances) and noted a lack of information, *"I can't say 'they've failed to submit some tasks on time' because I don't know that"* and *"I can't say anything about persistent and dedicated"*. The respondent came back to Student 3 after finishing Student 4 to reassess the comment for the effort category; Respondent 2 said, *"actually I might just change this second one because 90% is studious so Yort has been 'studious'"* but then modified the statement to note the informal comment provided with the information card: *"but 'should make more effort in the presentation of assessed work'."*

Rather than surveying the information provided in the information card Respondent 3 was following a sequence of categories to fit with a preferred style of report writing. The respondent sought the evidence to assist in selecting a most appropriate

introductory comment then realised there were contradictions evident in the students' results (two instances), which were noted by all of the other respondents. The respondent used four cognitive strategies in composing the report. The most frequently used was to categorise using marks (eight instances) and comments (three instances). This respondent also made inferences from marks and comments, including: *"Both the poster or the field work is probably the presentation let down"*, *"very intelligent"*, *"methodical nature"* and *"student is studious"*. The respondent reconsidered the following comment on field work: *"Yort did not work collaboratively during field work and so [typing] ... could ...not ... follow ... the guidelines of ... for the task ... so this resulted in ... resulted in few observations from field work being recorded and the transect graph was not completed ... this is unfortunate considering his wonderful effort in the tests."* Removing the final phrase, Respondent 3 noted, *"ah ... that is probably not appropriate."*

Respondent 4 spoke very little while writing the report for this student, but through the process of surveying the information about the student out loud, noted that the test marks were high (categorising from marks) and noted a contradiction between a score of 80% for assignments and the comment that more effort in presentation was required. Respondent 4 also noted that despite the comment that the student didn't like group work and the impact this had on the field work mark, that *"this was the student who wouldn't do the group work yet his practical reports are quite good."*

Verbalised thoughts for Student 4.

Student 4's test marks ranged from 39% to 52%, practical marks averaged at 45%, field work at 56% and the assignment was not submitted. This piece of formal information is key because the information card included no additional notes. Respondent 4 noted this: *"This one there is no notes but the marks are all very low"*. In the absence of any additional information the respondent gave the lowest ranked comment in all categories except for assignments. As this was not submitted, Respondent 4 did not address this area at all. Respondents 1, 2 and 3 began by surveying the available information. In the absence of other data they relied on categorising from marks and inferring from marks to complete the report comment. The all noted the consistency of the marks at a low standard. Respondent 4 noted, *"That one's easier"*.

Respondent 1's transcript included evidence of categorising from marks (five instances) and inferring from marks (four instances). The kinds of inferences included: "*There isn't a lot of effort if you are going to end up with low marks*", "*A low mark in a prac report generally comes when the data is recorded but there isn't much or any analysis ...*", He "*didn't show an understanding of the task - because he didn't pass*" and "*inattentive at times ... he must have been inattentive at times if he wasn't passing the chemistry prac report.*" The respondent also noted the absence of other information while inferring aspects of performance. "*I don't know anything about the field work but he must have done it if there is a mark recorded.*"

Respondent 2's transcript included evidence of categorising from marks (three instances) and used the non-submission of work to infer level of effort: "*effort - worked inconsistently, failing to submit some tasks*". Respondent 2 noted in three instances the lack of information to be able to write the report: "*I don't know if they were incomplete ... um ... I'll put the second last one because I can't confidently say what's very bad*", "*I can't say anything about prac work*" and "*Well I don't know anything about it so better leave them out.*"

Respondent 3's transcript again began with a review of the information provided, with a view to establishing an idea about the student's effort, so as to best compose the introductory comment. The respondent concludes, "*Alright, so I would suggest that perhaps Meba could spend more time attending to work*". The transcript included evidence of categorising from marks (three instances) and inferring from marks (four instances). The kinds of inferences included: "*Meba's field work indicates he can work as part of a team*", "*results were well present however the discussion and conclusion portions were not completed in detail*" and "*Usually demonstrates safe and reliable behaviour.*" The respondent checked the validity of the comments made twice, by going back to the evidence, for example the statement: "*topic tests ... who ... satisfactory? No it's not good enough*" and "*I think that's right... field work - at 20 out of 25, I think that's middle of the range.*" Respondent 4 modified comments for two of the six categories to ensure the comments were appropriate and also showed personal engagement with the student through the following comment: "*prac reports... that's very disappointing.*"

Verbalised thoughts for Student 5.

Student 5's test marks ranged from 24% to 38%, practical marks averaged at 20%, field work at 56% and the assignment was 55%. The information card included several notes: the student had tried to start a fire, was placed on a warning of exclusion from all practical work, the assignment was submitted unfinished and the field work was copied. Respondents were also told that the student is disruptive, distracted and aggressive in class, that work is always incomplete or poorly done and that parents did not attend parent-teacher meetings. As indicated in Chapter 2, disinterested parents are regarded poorly by teachers (Lasky, 2000). The full complement of information presents a poorly behaved, low-achieving student. This set of information was provided to look for evidence that respondents may provide a more punitive report.

Respondent 1 began with a survey of the information provided and then used two cognitive approaches to compose the report. The respondent categorised from marks (eight instances), from comments (four instances) and some inferences from the marks. Some examples of pertinent comments are: *"because the test marks were very bad ... I'd have to say 'the level of understanding was poor", "in terms of effort, the mark is abysmal", "prac work ... because of dangerous behaviour... so 'often needed to be reminded about the importance of safety' would be a key comment that I would pick that quote for" , "So the field work ... well he must have worked effectively with the group or he wouldn't have been able to use their work."* An interesting quote where the respondent reflects on what is appropriate in a report is, *"the field work was copied. So ... You can't really comment on whether it was copied in the report and on the basis of the mark you would have to say it was a satisfactory mark."* As was noted for Student 2, the public nature of the report documents encourages teachers to be judicious in what is included. This conflict for the teachers continues to impact the decision about what is the most appropriate comment for the field work category: *"Didn't really do the work in the field work ... then you can't talk about understanding, but if it was a pass though ... and that can't really feature on a report... it is something you would deal with one on one with the student."*

Respondent 2 began with a survey of information provided and then used only two cognitive strategies: categorising from marks (five instances) and from comments (four

instances). The additional information and marks were unambiguous; hence the need to make inferences was reduced. A good example of allocating the comment from the marks was: “*Topic tests are just way [vocal emphasis] down the bottom*”. Field work was also a more difficult allocation for Respondent 2. The respondent said: “*field work ... um ... field work was copied from another student. You can't say he didn't work collaboratively because he must have collaborated otherwise he wouldn't have the results, so ... the second last one for that.*” The concern about copied work is less significant than the opportunity to reward evidence of the positive learning behaviour collaboration.

Respondent 3 again begins the report with an introductory comment focussing of effort and infers that effort is poor on the basis of the information provided. At a later point, Respondent 3 goes back to the information sheet and notes “*quite a few issues*”. For this student, Respondent 3 utilised a wider range of cognitive strategies, looking further than the report and considering the parents as recipients of this report. The respondent categorised the comments from marks (five instances) and from comments (five instances) but also infers student characteristics from comments and marks (five instances). Some of the categorising statements include: “*I think they'd have to be bottom of the list if not next to bottom of the list*”, “*puts satisfactory effort into the... no ... I think he fits into the bottom of the rank*”, “*Practical work Evidently can't be trusted and is not doing safe practice*”. In four instances Respondent 3 checks back to determine the appropriateness of the comments in terms of consistency within the report and whether the statements are fair and valid. Those statements include: “*I have to be consistent with my initial statement*”, “*So that's the key word for me*”, “*Ah, tests ... result in good understanding ... no satisfactory understanding. I don't think so ... poor understanding*”, “*That makes sense*”.

The field work category highlights how this respondent sought to emphasise the personal strengths and successful aspects of learning shown by the student. Respondent 3 states, “*field work, OK that's not too bad ... um ... worked with a small group ... the tricky thing is that a kid that is misbehaving, then performs well in practical activities when they get to the outdoor probably tells me that they are an outdoorsy sort of kid so they're not stupid. They pick up on information but they prefer to be outside doing*

it.” The respondent then reconsidered how that interpretation fits with the information provided and previous decisions: *“but I have to be consistent with my initial statement.”* Conflict between the best belief about student performance and the contradictory information is worked through: *“I would like to think that I would choose the third from the top which is worked effectively with a small group gathering field data observations of field work were described with some diagrams and simple transect graphs ... now truth of the matter is that they may have been able to achieve that but the likelihood would have been that it didn’t work ... um ... was not able to work effectively with a small group.”* Respondent 3 seeks a compromise comment, modifying down the more positive comment: *“I’m going to choose the second last from the bottom ... so the work was ... I might modify... I’ll have a blend of them both ... I’ll state the third from the top but I’m going to take out ‘worked effectively’.”* Respondent 3 acknowledged that a positive or highlight for the report was being sought, *“Because to be honest that was one of his best performances in the ecosystem field work.”*

Respondent 3 humanised hypothetical Student 3 creating a picture of his or her potential strengths. This is evident in statements like: *“11 out of 20 wasn’t that bad of an effort”*, *“obviously can’t be trusted”*, *“now the issue I’ve got is, that this is very wordy and if Wod is, as he is in science as he is in English, LOTE and whatever other subjects he might take his literacy may be quite low”*. Respondent 3 provides evidence of a personal response to the student: *“Topic tests ... disappointing at best”*, *“now the issue I’ve got is”*, *“I would like to think that I would choose the third from the top.”*

Respondent three also builds a picture of the parents of the student and considers them in the comments made: *“If you understand... the parents, their literacy might be quite low also, so a big flowery report is going to be wasted energy, in my opinion... um ... just because the parents can’t read it. If the parents don’t respect it, they’re not going to actually give you anything ... it’s unlikely you’re going to get useful feedback or useful response from that student.”*

When Respondent 4 surveyed the information provided to gain an overview of the student’s performance. Respondent 4 noted: *“Now for this one I can see based on the results presented it is lower. Hmm. It’s a very naughty boy.”* Respondent 4 noted the consistency of the results and comments saying, *“All is quite bad.”* In the brief

comments made, Respondent 4 shows categorising from marks and from comments. Respondent 4 also highlights the field work category, noting “*Alright with this he’s the one he’s copied from someone else. This one is not authentic, so I give him ... um ... because it mentions that... I am going to punish him, so it is not high comments for this*”. In the written comment, Respondent 4 does not make any specific reference to the copied work, presumably for the same reason noted by the others, but does not ignore this aspect of the student’s performance, allocating the lowest mark punitively.

Verbalised thoughts for Student 6.

Student 6’s test marks ranged from 48% to 66%, practical marks averaged at 74%, field work at 90% and the assignment was 90%. The information card included a note that the student seeks a lot of clarification in practical work and for assessment tasks, and that answers provided are confused and details are mixed up. Respondents were also told that the student tries really hard, asks the teacher to check work that is handed in, but the student is a “nice kid who lacks confidence”. The printed evidence provides an explanation for the range of marks observed across the tasks. The verbally provided information supplied evidence that would allow the respondents to soften their perception of the student or feel greater sympathy.

Respondent 1 surveyed the information provided making summary notes about the grades achieved by the student: “*just above a pass, so not great, satisfactory*”, “*prac work is pretty good*”, “*fieldwork mark is really high and the poster mark is really high.*” The survey of information also led Respondent 1 to highlight an aspect of comments to check on: “*so understanding will be something you would have to be careful with in the report.*” Respondent 1 used the cognitive strategies of categorising from marks (six instances) and comments (three instances). Examples of categorising from marks included: “*mark for the assignment work is really high, so I would pick the first comment*” and “*Because she hasn’t passed Chemistry I don’t think I can say good. I’d have to say satisfactory*”. Examples of categorising from comments included: “*Well, I suppose asking questions is responsible and methodical*” and “*couldn’t say asks key questions because she is clarifying the steps. I have to pick the third comment which still sounds positive.*” Respondent 1 made note of the absence of information in two instances: “*you can penalise them for specific things like graphing but I don’t have any*

information on that so I don't know if I can" and "If you were going to say 'accurate and detailed'...I'd need to check the actual task to say that". In selecting the best comment to reflect the information available, Respondent 1 noted that words that are more subjective can help in the absence of specific information: "The word neat is ... a more subjective word so it is easy to pick the comment with the word neat rather than accurate and detailed."

Respondent 2 primarily composed the report for hypothetical Student 6 by categorising from marks. Examples of this include: *"prac reports are OK ... and the middle sort of one seems fine for that", "so topic tests ... ah ... on the borderline but again I can't say a good understanding because she's not passing", "Field work was good and the poster was good, so, um ... well I'll give her the second top for field work and 'informative and attention to detail' ... yeah I'd give her the second top one again for that."* Respondent 2 made use of the informal information as well: *"there is no suggestion that she's inattentive because she's a nice kid", "she's a nice kid so actually, I'll select that one and take out 'was inattentive'."* There were three instances where Respondent 3 modified comments to suit the information provided. There was additional evidence in the statement, *"We'll see if there is something in effort"*, that Respondent 2 was seeking an encouraging or rewarding comment for the student who 'tries really hard' and is 'a really nice kid'. Respondent 2 did not choose inappropriately positive comments however, checking the validity of what was chosen in three cases, including this statement: *"I'd take out 'consistently produces work of a good standard' because I can't say that."*

In surveying the information provided, Respondent 3 concluded *"alright so that's Fon ... is a nice kid who works very hard."* Respondent 3 placed the informal information including evidence that the student lacks confidence into the inference that the student has *"low self-esteem"* and this is subsequently influences the selection and modification of comments. Respondent 3 categorises from marks in three instances: *"Field work 45 out of 50 that's brilliant!", "prac reports... Ah three-quarters of the way through I think", "18 out of 20 - that's good."* There is evidence that Respondent 3 has engaged personally with hypothetical Student 6 in the very positive response to the field work mark, with the inclusion of the comment *"Well Done!"* in the written

report, and in the inference that the student is *“Persistent and dedicated” ... I’ll agree with that.* Respondent 3 sought to include positive comments, such as *“highlight has been the field work activity”*, explaining why in the transcript: *“My reason for including that information is the student has low self-esteem. They really need to have the positive behaviours that they have demonstrated reinforced and I would have made an effort to state that as I was giving back the ... assessment ... and observations ... during the ecosystems field work activity.”* Respondent three began an additional positive comment *“Alright I’m going to add something ... where is it ... Fom [typing] attempting to the best of her ability ... not for any particular good reason ...”* but reconsidered including the additional comment. The verbalising of this thought sequence is quoted as follow: *“the issues and I’ve got ... I think it may not be appropriate to put that in a report but it is definitely something I would include in a parent-teacher interview ...um ... and I would try and reinforce the positive behaviour as far as being a little bit more autonomous. Being more autonomous in the class in And at parent-teacher interview I think I could convey that more personably so I think that it just sounds a little ... again it sounds condescending to put it in a report, in a written report.”* Respondent 3 has considered the appropriateness of the comment in the format of a report, not that the information should not be provided to parents, nor that positive feedback and positive reinforcement would not be valuable for the student.

Respondent 4 in surveying the overall information categorised performance from scores: *“Tests might be a little bit weak and low,”* and *“What he presents ... what he presents for everything else is fine.”* Respondent 4 also noted the informal comment about the student asking a lot of questions.

Verbalised thoughts for Student 7.

Student 7’s test marks ranged from 54% to 70%, practical marks averaged at 70%, field work at 72% and the assignment was 75%. The information card included three notes: details of a concept error noted, the student was always attentive, that homework was not done on three occasions. No other information was provided. The non-completion of homework was the only negative element of the report, with all marks and effort comments being positive.

Respondent 1 began the process by surveying the information provided, describing the marks as *“average prac marks, fairly good field work ... consistent marks.”* The report was composed using marks (four instances) and comments (three instances) to categorise the selected comments. The lack of detailed evidence continued to make the selection of comments more difficult, with marks providing valuable evidence; Respondent 1 notes *“I can’t say anything more than a middle comment because I don’t have any evidence of that and 36 is about a B.”* Examples of categorising statements include: *“36 is still a fairly good mark”, “Test mark is fine. I wouldn’t say satisfactory at 70% I’d say good”, “Well if he’s attentive in class and his work is fine, I can say ‘safe and reliable’ behaviour”, “In terms of effort is says that class work is fine and is always attentive so ... I could say.... I couldn’t say ‘high standard of work’ but I could say good, so the third comment” and “as homework’s not done ... I couldn’t pick the highest comment in effort either.”* This comment specifically notes the impact of the one negative piece of informal information on the rank of comment selected for Effort.

Respondent 2, surveyed the information provided, describing the marks as *“Middle of the road marks, Yep, middle of the road marks”* and noting that the student was attentive, work was fine and that there was a negative informal comment: *“homework not done, How often? ... OK”*. The report was composed using marks (five instances) and comments (two instances) to categorise the selected statements. Examples of statements showing categorising from marks include: *“test, well they’re passing so I can’t give him good”, “prac work ... actually, that’s just middle of the road ... it doesn’t allow ... work is fine. Let’s just say the second top one” and “I’d give him the middle one for that because 15 and 16 aren’t great.”* Respondent 2 appears to regard the non-completion of homework as important information to impart to parents and sought a way to include it in the report. Respondent 2 said, *“Should be something about homework ... ‘Consistently produces work of a good standard’. ‘Failing to submit work’. Well it doesn’t say anything about failing to submit work so we could ... always attentive in class ... so... we’ll pick ‘persistent and dedicated’ again um ... but I’ll add ‘should ensure all homework is completed when set’. OK.”* In the transcript, the respondent had tried to fit the information into the effort statement but needed to

weigh it up against the positive effort and attitude information that was also noted in the information card.

Respondent 3 surveying the information provided, describing the marks as “*upper middle range*”. The report was composed using marks (four instances) to categorise the selected statements. Examples of statements showing categorising from marks include: “*field work is just a little bit more than just satisfactory work*” and “*test, 58, 96, 70 %, 54%, um ... light test indicates excellent understanding of the concepts taught this semester. Um ... excellent understanding of the concepts taught ... Oh no. Middle - good understanding.*” Respondent three also made inferences from the marks: “*field work is just a little bit more than just satisfactory work so obviously could work collaboratively.*” Respondent 3 considered the fact that the hypothetical student had not completed homework tasks, but did not elect to feature this in the report. He did ignore this in the effort statement focussing on classroom effort: “*homework is not done on three occasions... um alright so, effort in class is great.*” He considered it a second time but again didn’t choose to emphasise the unfinished homework over the marks obtained: “*What did it say? Homework not done on three occasions. OK, that’s not practical work though. Unless it was the write up but then again it would have shown.*” In two of the comments already listed, Respondent 3 used the cognitive strategy of checking the accuracy or validity of the comments used.

Respondent 4 surveyed the information provided and described the marks as “*not so good. There is one that is quite good.*” Respondent 4 also noted that the homework was not done. The report that Respondent 4 provided was made up with comments in the second bottom rank in all categories except for the skill comment, suggesting that the incomplete homework has had a bigger impact on the choice than the student’s attentiveness and adequate work.

Quantitising and Analysis of Transcript Themes

Research Question 2b: What teacher thinking is evident in the verbalised commentary of the report writing process for the hypothetical students?

As indicated in Figure 6.1, amongst the themes identified in the transcripts, a cluster of themes described cognitive strategies. The ten cognitive strategies that dominated the reasoning presented during report writing were: surveying information, categorising from marks and comments, analysing information, making inferences from marks or comments, categorising from inferences, modifying or individualising comments, and checking the accuracy or validity and the appropriateness of the comments.

In order to address Research Question 2b, the themes that emerged from the transcripts of the process tracing task were analysed statistically and then analysed for the patterns of their use. Categorisation using marks or scores was the most frequently used cognitive strategy in this task. Statistical analysis of counts shows there are clear patterns in the distribution of cognitive strategies by respondent and by the hypothetical student and therefore the range of information provided about each student. Summary statistics will be presented and then a cognitive strategy sequence will be represented graphically for each student. The categories of cognitive strategies coded in the data will be classified according to Brookhart's (1993) Continuum of validity in grading, to clarify the significance of the cognitive strategies present and absent for each hypothetical student and their information set.

Comparison of cognitive strategies by respondent.

A summary of the cognitive strategies identified in the analysis of the recorded transcripts for the Process Tracing task is presented in Table 6.3. The fourteen themes relating to cognitive strategies were reduced to ten by grouping Analysing strategies and Individualising strategies in order to remove very small groups and improve the statistical analysis. The respondents most frequently indicated that they were selecting the relative rank of comments for the written report on the basis of the mark or score information provided on cards at the start of the task. This is highlighted in the graph shown as Figure 6.2, which allows comparison of the strategies used by each of the respondents and the estimated marginal means of the cognitive strategies. Other

differences in the cognitive strategies utilised by the respondents is evident in the frequency information and subsequent statistical analysis.

Table 6-3 Matrix Ranking of Cognitive Strategies by Respondent

	Respondent				n	M % (SD)	S
	1	2	3	4			
Categorising from marks	38 (44.19%)	31 (34.44%)	31 (26.72%)	10 (37.04%)	110	35.60 (7.21)	51.97
Categorising from comments	13(15.12%)	14 (15.56%)	10 (8.62%)	3 (11.11%)	40	12.60 (3.32)	11.04
Analysing information	12 (13.95%)	14 (15.56%)	11 (9.48%)	4(14.81%)	41	13.45 (2.73)	7.43
Surveying information	7 (8.14%)	8 (8.89%)	8 (6.90%)	5 (18.52%)	28	10.61 (5.34)	28.47
Checking accuracy or validity	6 (6.98%)	9(10.0%)	14 (12.07%)	1 (3.70%)	30	8.19 (3.65)	13.31
Inferring from Marks	6(6.98%)	4 (4.44%)	11 (9.48%)	2 (7.41%)	23	7.08 (2.07)	4.28
Individualising comments	0 (0%)	7 (7.78%)	16 (13.79%)	0 (0.00%)	23	5.37 (6.69)	44.81
Inferring from comments	2 (2.35%)	2 (2.22%)	8 (6.90%)	2 (7.41%)	14	4.71 (2.82)	8.00
Checking appropriateness of comment	2 (2.32%)	0 (1.11%)	6 (5.17%)	0 (0.00%)	8	1.87 (2.45)	6.04
Categorising from inference	0 (0%)	1 (1.11%)	1 (0.87%)	0 (0.00%)	2	.50 (.58)	.34
	85	90	113	27	315		

Comparison of the strategies used by respondents indicated that Respondent 1 referred to marks in selecting comments most frequently and Respondents 1 and 2 categorised using the informal information comments more frequently than Respondent 3. Respondent 3 modified comments or sought highlight comments much more frequently than other respondents. Respondent 3 more frequently checked the appropriateness and the accuracy or validity of the comments selected. It appears that Respondent 4 surveyed the information more dominantly than the other respondents however this statistic reflects the way that Respondent 4 vocalised thoughts in the initial moments of composing the report.

A one-way between subjects ANOVA was conducted between the counts of cognitive strategy themes and respondents, in order to confirm the apparent associations between respondents and cognitive strategies used. Between groups Analysis of Variance showed a significant difference between respondents ($F [3,276] = 8.44, p =$

.00). The table of Multiple Comparisons indicated a significant difference in the means between Respondent 4 ($M = .39$, $SD = .73$) and Respondent 1 ($M = 1.23$, $SD = 1.81$), Respondent 2 ($M = 1.29$, $SD = 1.61$) and Respondent 3 ($M = 1.64$, $SD = 1.74$) but this is due to the brevity of commentary provided by Respondent 4.

One way between subjects ANOVA was repeated, with the data set filtered for each cognitive category. This analysis is presented as Appendix 15. There was a significant difference between respondents in *Categorising by Marks*, in *Checking for Accuracy or Validity* of the comment, in *Checking the Appropriateness* of the comment and in *Individualising* by modifying or composing highlight comments. In the cognitive category *Categorising by Marks* the difference between Respondent 4 and the other three respondents was significant ($F [3, 24] = 9.188$, $p = .000$). There was a significant difference between Respondent 3 ($M = 2.00$, $SD = 1.53$) and Respondent 4 ($M = .14$, $SD = .38$) for the category *Checking the Accuracy of comments* ($F [3, 24] = 4.39$, $p = .01$). Respondent 3 considered the *Appropriateness of comments* more frequently than Respondent 2 and Respondent 4 ($F (3, 24) = 3.31$, $p = .04$) and Respondent 3 was significantly more likely to consider *Individualising reports* than Respondent 1 or Respondent 4 ($F [3, 24] = 5.573$, $p = .005$). The mean difference between Respondent 3 and Respondents 1 and 4 was $-.29$ ($p = .01$).

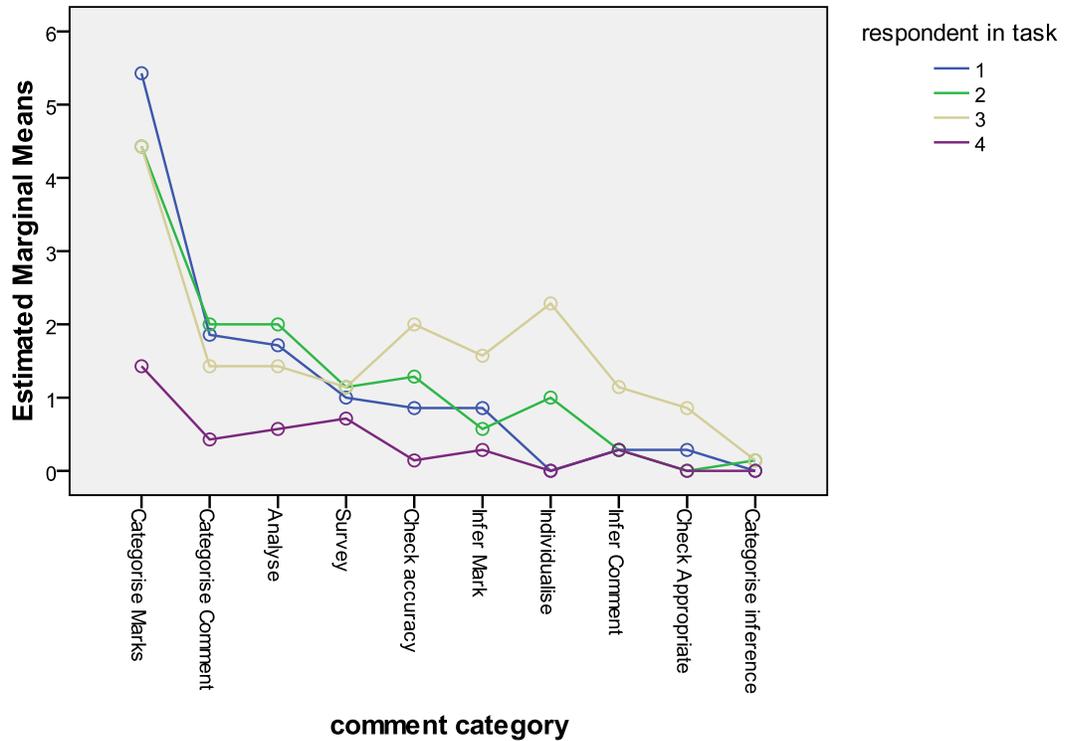


Figure 6-2 Estimated Marginal Means of Code Count, showing Categories of Cognitive Strategies used by each Respondent

To account for the difference between the limited verbalisation for Respondent 4 in this statistical analysis, counts were converted to percentages of the total counts made by that respondent and the analysis was repeated. These are the percentage values shown in Table 6.3. In the repeated analysis the only significant difference in a cognitive category was found in the *Individualisation* category, with Respondent 3 significantly more likely to use this strategy than Respondents 1 or 4 ($F [3, 24] = 4.794$, $p = .01$). The mean difference between Respondent 3 and Respondents 1 and 4 was 1.99 ($p = .02$).

Comparison of cognitive strategies by hypothetical student.

To better identify the relationship between the hypothetical students, the kinds of formal and informal information provided for each and the cognitive strategies used in the process tracing task, data was reformatted into Table 6.4 to show the frequencies of each strategy used with each hypothetical student.

A simple comparison of methods between the hypothetical students shows a reduced range of strategies used by the respondents for Students 1, 4 and 7 – those

students with no additional informal information or very little valuable informal information. The smallest range of strategies were used by respondents addressing hypothetical Student 1, with ranking decisions based on marks making up half of the vocalised records of cognitive processes. Student 4's information card indicated that work was not submitted and this data set would suggest that this information led to inference about what the non-submitted work meant in terms of the student's effort and behaviour. The only salient information for Student 7 was a record of incomplete homework on three occasions but this additional informal information was evidently used to assist in categorising the selected report comments.

Table 6-4 Matrix Ranking of Cognitive Strategies by Student

Cognitive strategy	Student [n, (%)]							N
	1	2	3	4	5	6	7	
Categorising from marks	16 (50)	14 (28)	20 (38.46)	10 (27.78)	18 (31.03)	17 (32.69)	15 (38.46)	110
Categorising from comments	0	9 (18)	7 (13.46)	0	13 (22.41)	4 (7.69)	7 (17.95)	40
Analysing information	5 (15.62)	8 (16)	8 (15.38)	7 (19.44)	1 (1.72)	5 (9.61)	7 (17.95)	41
Surveying information	0	6 (12)	5 (9.61)	4 (11.11)	5 (8.62)	5 (9.61)	3 (7.69)	28
Checking validity & accuracy	3 (9.38)	4 (8)	2 (3.85)	4 (11.11)	5 (8.62)	7 (13.46)	5 (12.82)	30
Inferring from Marks	5 (15.62)	1 (2)	5 (9.61)	9 (25)	1 (1.72)	1 (1.92)	1 (2.56)	23
Individualising comments	2 (6.25)	2 (4)	2 (3.85)	2 (5.56)	5 (8.62)	9 (17.30)	1 (2.56)	23
Inferring from comments	0	4 (8)	2 (3.85)	0	6 (10.34)	2 (3.85)	0	14
Checking appropriateness of comment	0	2 (4)	1 (1.95)	0	3 (5.17)	2 (3.85)	0	8
Categorising from inference	1 (3.12)	0	0	0	1 (1.72)	0	0	2
Total	32	50	52	36	58	52	39	

The written report for Student 5, the student whose report was consistently poor according to both marks and comments appears to have been a less complicated report with proportionally higher numbers of references to the informal comments provided in

order to compose the report. There was also more frequent indication of inferences being made about the student and more frequent indications of checking the appropriateness of comments made. These comparisons between hypothetical students are made clear in Figure 6.3.

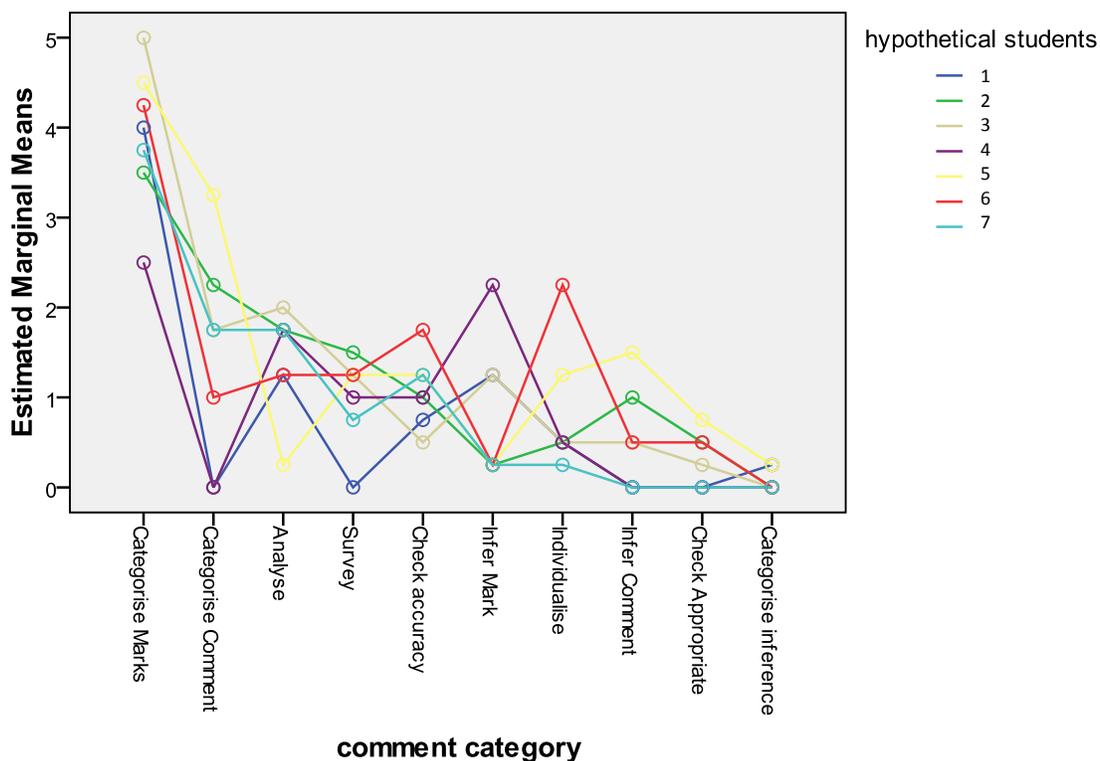


Figure 6-3 Estimated Marginal Means of Code Count for Cognitive Strategies for Students

The peaks in the line for Student 6, indicate more use of individualising comments, and more checking. Student 6, demonstrated positive behaviour and effort and the additional use of these cognitive strategies ties with the expectation that teacher may make a Contingency level decision favouring the student with good effort and behaviour.

The graph for Student 4 shows a marked peak for *Inferences made from Marks*; Student 4 was presented without additional informal information. Student 5, with poor grades and evidence of negative behaviour, shows the most frequent use of *Categorising from Comment* and also shows the lowest count for *Analysis*, perhaps because the marks were consistent and indicated clearly that the report would fit in the lowest ranks, suggesting these ranking decisions were Procedural level.

A one way between subjects ANOVA was conducted between the relative proportion of cognitive strategy themes and the hypothetical student categories. There were two significant difference in a cognitive category used with the hypothetical students; they were *Inferring from Comments* ($F [6, 21] = 3.45, p=.02$) and *Categorising from Comments* ($F [6, 21] = 4.654, p = .004$). In the *Inferring from Comments* category, respondents were significantly more likely to use this strategy for Student 5 ($M = 2.09, SD = 1.80$) than for the students with no or limited informal information, that is Students 1, 4 and 7 (all $M = .00, SD = .00$). The mean difference between Student 5 and those provided with limited informal information was $-2.086 (p = .006)$. In the *Categorising from comments* category, respondents were significantly more likely to use this strategy for Student 5 ($M = 4.00, SD = .47$) than for the students with no informal information, that is Students 1 and 4 (both $M = .00, SD = .00$). The mean difference between Student 5 and those provided with no informal information was $-3.996 (p = .006)$. Student 7 was not grouped with Students 1 and 4 in this category as the brief comment that homework was not done three times impacted on the use of this cognitive strategy ($M = 2.57, SD = 1.31$).

Univariate ANOVA was undertaken to investigate the proportional use by each of the respondents of cognitive strategies for each different hypothetical student. A significant difference between respondents was noted ($F [3, 24] = 8.24, p = .00$). Significant difference was noted between Respondent 4 and the other respondents due to the substantially smaller commentary. Aside from this difference, Figure 6.4 gives an indication of how the respondents engaged with each of the hypothetical students.

Respondent 3 has particularly engaged with Student 3 and Student 5. Both of these hypothetical students were presented as displaying poor behaviour and the respondent has used additional cognitive strategies to make sense of the informal information provided. Respondent 4 used fewer comments during the process tracing task but the peaks and troughs in comments pointing to cognitive strategies being used can be related to the provision of additional informal information. For Students 1, the other three respondents described a lower number of cognitive strategies. The same effect was noted with Student 4 for Respondents 2, 3 and 4. Respondent 1 used fewer cognitive strategies with Student 3 than Student 4. Students 2, 3 and 6, who were provided with additional informal information, show a greater proportion of comments used by all respondents. Student 5 who had a consistently poor report, in both scores

and comments, produced the greatest number of comments for Respondents 3 and 4 but a peak was not noted on the graph for Respondents 1 and 2. The ease of writing that report may have led to less explanation of choices in the Process Tracing task by these respondents.

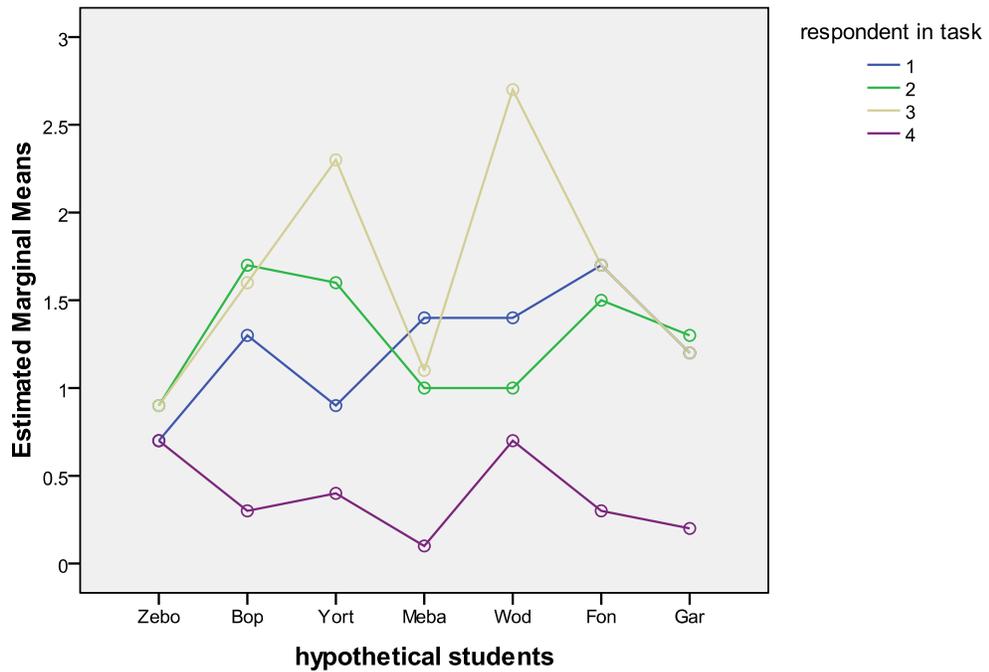


Figure 6-4 Estimated Marginal Means of the Number of Strategies used per Student

To explore the association between the hypothetical students, the informal information they were provided with and the use of various cognitive strategies, Factorial ANOVA was conducted. A significant difference between categories was noted ($F [9, 279] = 21.92, p = .00$). There was a significant difference ($p = .03$) between Student 5 ($M = 1.92, SE = .24$) and Student 7.

Figure 6.5 allows a better analysis of the relationships between strategies and the student information sets. The most frequent cognitive strategy is *Categorising with marks* and yet the graph falls for Student 4 whose information set only included scores. The strategies of *Categorising by Comments* and *Inferring from Comments* were strongly associated with Students 2 and 5. These students were provided to elicit evidence of compensation, Strategic Leniency or a punitive response and the additional evidence of reference to the informal comments ties in well with that expectation. The

strategy of *Checking the Appropriateness or Validity* of comments were also associated most strongly with these students suggesting that the teacher exercised caution in applying the Principles of Compensation and Strategic Leniency or a strongly negative report.

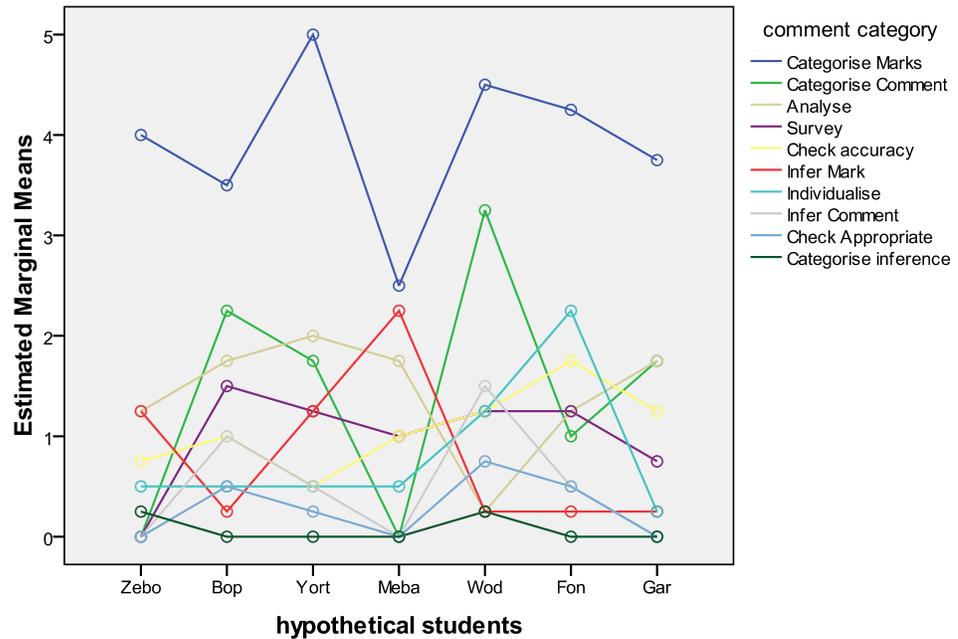


Figure 6-5 Estimated Marginal Means of Code Count showing the relationship between Students and the Range of Comment Categories

With the category *Infer from Marks*, peaks were noted for Students 1 and 4, the students who were presented with no informal information. This indicates evidence that the respondents were probing the information they had available to them to better understand the student's performance. Lower means for the other students in this category would indicate that the additional information provided gave better opportunities for finding appropriate comments.

The graph for *Individualising comments* points to this strategy being associated with Student 6, who was the student who sought additional clarification from the teacher to deal with a lack of confidence. The information would appear to be judged as important to convey to parents and the lack of database comments addressing this characteristic compelled the respondents to write or modify the available comments.

Summary of discussion.

The most consistent student information sets were for Student 1 (*of a very high standard*) and Student 5 (*of a very low standard*). Students 1 and 5 were associated with less frequent use of analysis strategies, implying these were Procedural level judgements as described by Whitmer's Utility framework for marking judgements (1983), because the marks fit clearly within a grading category. Students 2, 3, 4 and 6 did not fit clearly into a grading category, as listed in Table 5.12; hence ranking decisions would be more complex Contingency level judgements.

The themes identified in the transcript data point explicitly to a range of cognitive strategies being used by the four respondents, although the sequence of use and the circumstances of their use varied. To better clarify the sequence of use a number of approaches were trialled to ascertain the sequence of strategies used; most involved listing the strategies in the order described in the transcripts. It was apparent that the cognitive strategies could be clustered into five groups: survey, classify, analyse, individualise and checking. These clusters are shown in Figure 6.6.

Research Question 2b asked: What teacher thinking is evident in the verbalised commentary of the report writing process for the hypothetical students? In composing the written report comments all respondents most frequently commenced by surveying information provided and noting consistency in the results. When information beyond the marks or scores was provided, the respondents considered what the information meant, drawing on their professional knowledge to make meaning and inferences. In some cases the marks or scores were sufficient information to allow a comment rank to be selected. There was significant evidence in the transcript commentary that additional informal information increased the range of cognitive strategies used in order to compose the report comment.

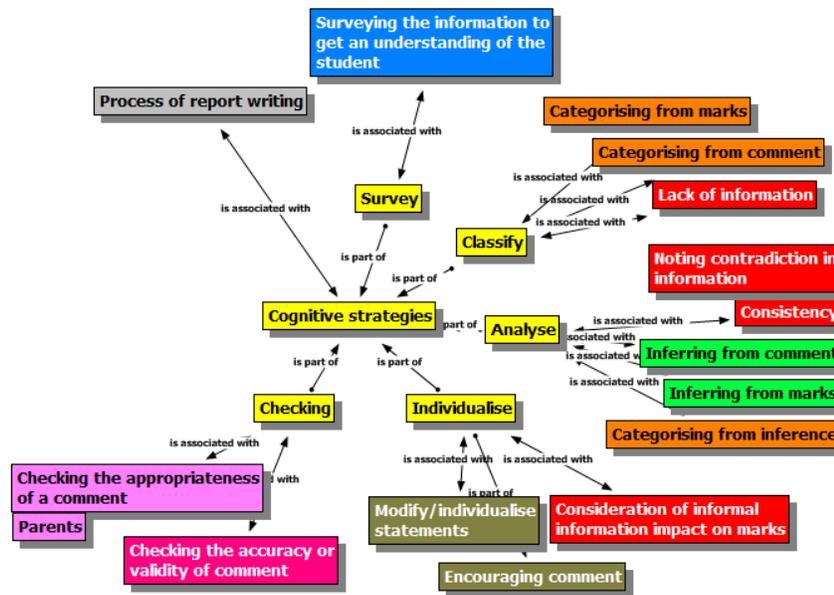


Figure 6-6 Cluster of Themes showing Cognitive Strategies

Structuring Meaning using Brookhart’s Continuum of Validity

Shavelson and Stern (1981) proposed that there were three stages of cognitive information processing involved in teacher judgements; they are: (a) gathering information about students, (b) interpreting information about students and making inferences, and then (c) making judgements. The Survey, Classify and Analyse steps shown in Figure 6.6 agree with the first two steps, although judgements are intrinsic in each of these clusters, in that selecting information, making an inference or categorising is a judgement. Analysis to this point has considered the kinds of cognitive processes utilised in report writing, frequency of use and association with categories of information about student achievement. The sequence of use is also relevant in that it can be effectively linked to enhancing the validity of the reporting comment.

A cognitive strategy sequence plot was devised to record the thinking for every student by every respondent. The sequence is plotted against the themes that emerged from the transcripts; however, the themes have been ranked according to Brookhart’s Continuum of validity in grading (1993). The grouped categories of Analyse, Individualise and Checking have been expanded to better fit the stages within the validity model. The Continuum of Validity begins with *Construct Validity* (CV),

continues through *Relevance and Utility* (RU), then *Values Implication* (VI) and *Social Consequence* (SC). The association between the levels of the Continuum of validity and the cognitive categories is summarised in Table 6.5

Table 6-5 Cognitive Strategies grouped with stages of the Continuum of Validity in Grading

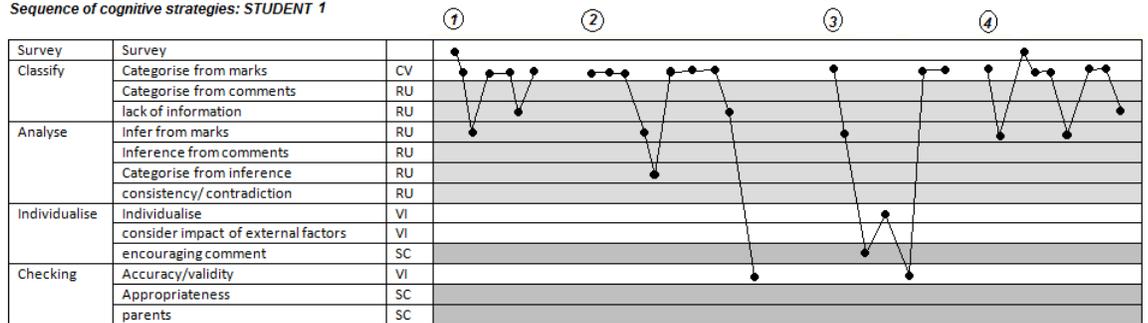
Construct Validity	Relevance & Utility	Values Implication	Social Consequence
<i>Understanding of what defines a grade</i>	<i>Seeking evidence to associate a student to a grade</i>	<i>Considering what the grade means for the particular student</i>	<i>Considering the consequences of giving the grade</i>
<ul style="list-style-type: none"> • Categorisation from marks 	<ul style="list-style-type: none"> • Categorisation from comment • Inferring from marks • Inferring from comment • Looking for consistency or contradiction • Identifying a lack of information 	<ul style="list-style-type: none"> • Checking for accuracy or validity • Consider the impact of additional or external factors • Individualising or modifying 	<ul style="list-style-type: none"> • Encouraging comments • Checking for appropriateness • Considering parents

The sequence of cognitive categories for most of the 28 reports begins with *survey*, as the respondents look over the information provided about each hypothetical student, in order to begin the task. *Survey* leads to the other cognitive strategies. Since Construct Validity is an understanding of what defines a grade; the *Categorisation from Marks* strategy fits within Construct Validity. *Identifying a lack of information* may also fit within Construct Validity, but it fits better with Relevance and Utility, given that it is an analytical strategy. Relevance and Utility is the level of the validity continuum where the teacher looks for evidence to associate a student with a grade, hence a number of classify and analyse strategies fit within this level. *Categorising from Comment*, *Inferring from Marks* and *Inferring from Comments* fit in Relevance and Utility along with the analysis strategy of *Looking for Consistency or contradiction*.

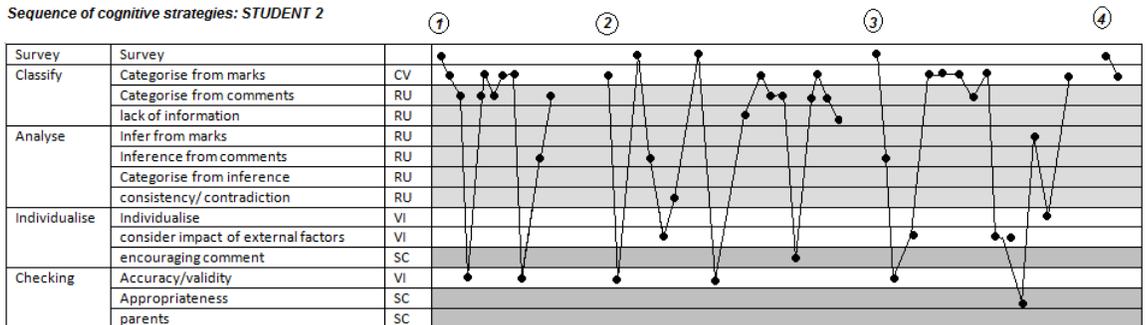
The third level, *Values Implication* considers what the grade means for the particular student and whether the grade is fair. The cognitive strategies that fit in this level are the individualising strategies and *Checking for Accuracy or Validity*. *Encouraging comments*, are individualising strategies but they also fit well into the fourth level of the continuum, *Social Consequence*. The other checking strategies *Checking for Appropriateness* and *Considering Parents* also fit in Social Consequence as they relate to the consideration of what will happen if the grade is given.

The completed sequence of cognitive strategies plots are shown in Figure 6.7. The shaded bands are used to differentiate between the four stages of the continuum. The dots are joined purely to indicate the sequence of strategies and not to imply a relationship between the points beyond just the sequence. The order of cognitive strategies is grouped by the clusters of themes shown in Figure 6.6. The *Encouraging Comment* and *Checking for Accuracy and Validity* strategies do not fit in the order described by both categories, but the shading clarifies this. The sequence used by each respondent is designated by the starting number at the beginning of each sequence.

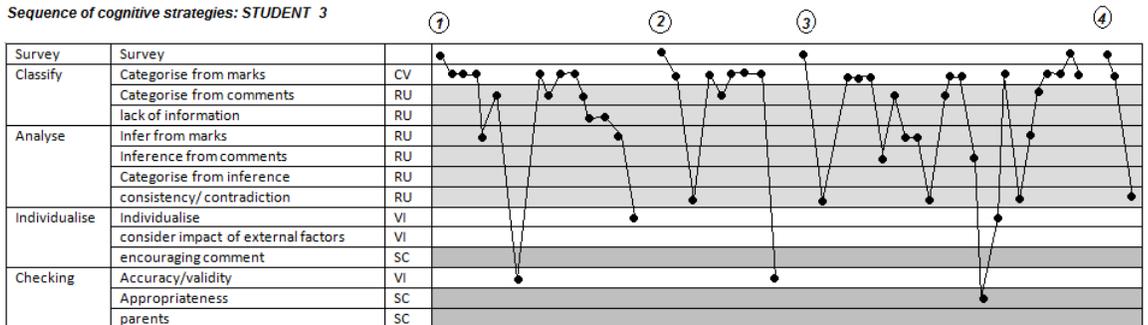
Sequence of cognitive strategies: STUDENT 1



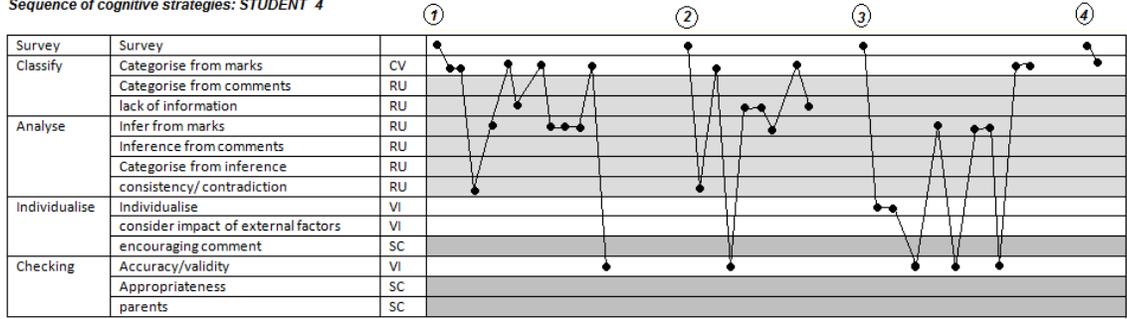
Sequence of cognitive strategies: STUDENT 2



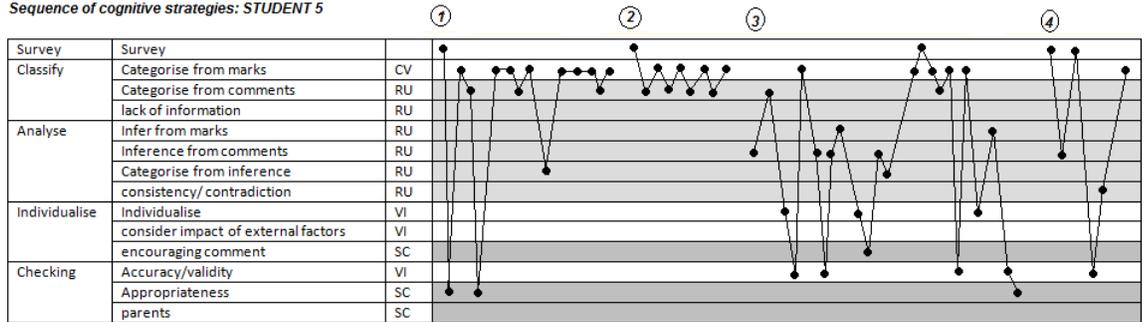
Sequence of cognitive strategies: STUDENT 3



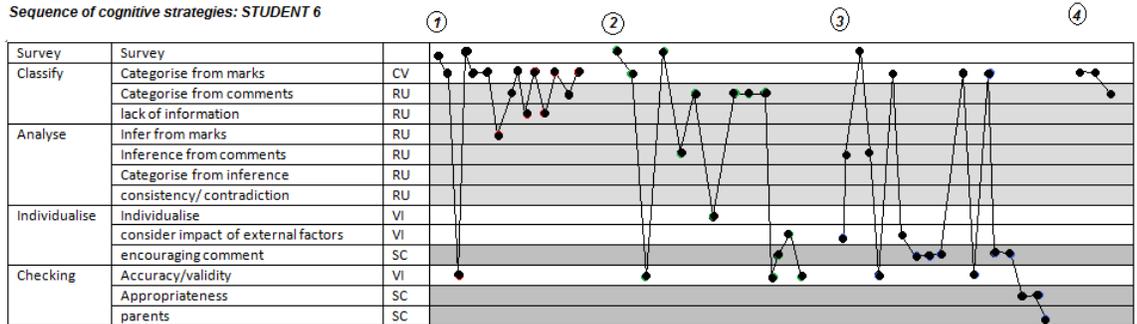
Sequence of cognitive strategies: STUDENT 4



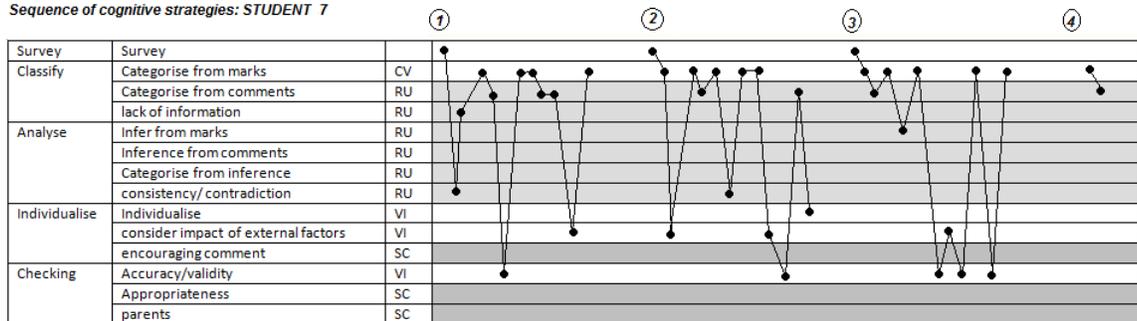
Sequence of cognitive strategies: STUDENT 5



Sequence of cognitive strategies: STUDENT 6



Sequence of cognitive strategies: STUDENT 7



Note the strategies are marked with dots and the linking lines are used only to clearly show the sequence of strategies.

Figure 6-7 Sequence of Cognitive Strategies for each Student and Respondent

The sequence plots in Figure 6.7 show that most reports begin with a survey of information. Most sequences include cognitive strategies from two or more levels of the continuum. While writing a report the respondents may move through the levels of the continuum a number of times. Most reports included a checking strategy, most often *checking the accuracy or validity* of the rating choice or modification made. For Student 1, Respondents 1 and 4 only used strategies from the first two levels of the continuum and for Student 5, Respondent 2 only used the first two levels of the continuum. This is further evidence that students who have consistent results that fit clearly into grading categories are less complicated to report on. Student 4 was presented with only information on marks; the sequence shows dominance in the use of *Categorising from marks* and analysis strategies, especially *Inference from marks*.

Student 3 required a Contingency level decision as some marks were impacted by informal evidence of poor behaviour. The sequence of strategies was dominated by *Categorising from Marks*. Analysis strategies of inference and recognising inconsistency in marks feature in the sequence but transcripts indicated that the high marks drove rankings in the report.

Students 2 and 6 included Contingency level judgements both indicating positive effort and behaviour. The sequence of cognitive strategies for both students shows multiple checking steps for Respondents 1, 2 and 3. Respondents 2 and 3 identified the impact of external factors from informal comments on student performance. Respondent 2 provided encouraging comments for Student 6.

The Social Consequence level of validity was not included for most reports; no respondents addressed Social Consequence for Students 4 and 7, who were presented with scores but no additional informal information about effort or behaviour. Respondent 3 considered the appropriateness of comments for Student 5. Respondent 3 considered Social Consequence for Students 1, 2, 3, 5 and 6. Transcript evidence indicated that Respondent 3 constructed identities for the hypothetical students and engaged more deeply with the task, describing personal responses such as disappointment and empathy. This suggests that knowledge of the students, not just their grades is necessary in order to consider Social Consequence of grading decisions. The sequences also indicate that when more information is available about student

learning, more ways of engaging with the second and third levels of the Continuum of validity in grading are possible, therefore improving the validity and quality of the student report.

Research Question 2a: Do formal grades alone provide sufficient information for teachers to compose valid report comments?

Chapter 5 established that as each respondent was able to complete a report for Students 1 and 4, it can be concluded that it is possible to write a report with only marks or grades, given a database of relevant comments. One of the reasons for this is that at least some of the respondents were able to make inferences about effort and other aspects of performance from the marks. Some respondents opted not to comment on characteristics of student performance in the absence of evidence. Also, the report for Student 1 appeared simpler to compose as the marks indicated a consistent performance at a high standard.

The provision of informal information allows for the use of additional cognitive strategies in composing the report comments. It allowed respondents to highlight information, to provide encouragement and individualise comments. It also increases the use of validating strategies at level II (*Relevance and Utility*) and III (*Values Implication*) of Brookhart's Continuum of validity in grading (1993). The findings of the task also indicated that information alone does not produce reports that can consider Social Consequence, the highest level of Brookhart's Continuum of validity in grading. As Respondent 3 made a greater attempt to personify the data, he was able to manufacture a stronger association with the hypothetical students, eliciting more personal response and accessing the highest level of the validity continuum through the process of composing reports. Hence, it appears that relationship with the students is one of the other factors that influence decision making during the report comment writing process.

Research Question 2a asked: Do formal grades alone provide sufficient information for teachers to compose valid report comments? It is possible to produce a written report statement describing student performance only on the basis of formal grades. The report comments will be accurate for the information provided in line with the validating strategies that are possible for the information set. If more information is made available, more cognitive strategies can be accessed and the validity of the report

will be increased. In order to access the greatest measure of validity, the teacher needs to know the students or to have some measure of relationship with the student. In a normal classroom situation, the ongoing interaction between the teacher and students will allow for optimum validity in report writing.

Evaluation of the Quality of the Process Tracing Task

It is likely that not all cognition is captured by the Process Tracing task for all respondents and that was certainly the case for Respondent 4 who did not extensively comment on the last three hypothetical students. Failing to properly capture the thinking processes degraded the quality of the analysis for Respondent 4. The substantial variation in approaches between respondents makes it clear that having additional respondents complete the task would have improved the quality of the analysis.

Semantic validity was ensured through the iterative process of coding. The reliability of coding was higher as there was frequent repetition of terms; however, it was apparent that the meanings of terms such as 'good' which are achievement indicators have an impact of on the categorising choices of the respondents.

In an attempt to indicate construct validity through triangulation, the transcript statements relating to test results were paralleled with the selected or composed written comments as reported in Chapter five. Table 6.6 lists the ranked statement from the written report for each respondent and matches it with phrases from the transcript, indicating thinking while ranking or composing the report statement. The comparison could be carried out for other sections of the written comment; however, the test category information was provided for all of the hypothetical students and comments coded as *Categorising using Marks* was available for all students.

Table 6-6 Evidence of Comparability between Written Comments in the Student Report and Verbal Commentary as part of the Process Tracing Task

Student	Selected comment:	Respondent	Transcript evidence
1	Zebo's test results indicate an excellent understanding of the concepts taught this semester. Zebo's test results indicate a very good understanding ...	1	<i>"test marks indicate the highest comment."</i>
		3	<i>"topic tests ... indicate excellent understanding of concepts"</i>
		2	<i>"80s, 90s ... so the tests look pretty good, so if I select tests ... I guess ... they're 'A's but not really 'A+' 's, so I'll give that the second level."</i>
		4	<i>"This student does particularly well in the [pause] tests"</i>
2	Bop's test results indicate a good understanding ... Bop's test results indicate a satisfactory understanding ...	3	<i>Alright, topic tests ... um ... there .. that's it a good understanding of topics taught</i>
		1	<i>A good understanding'? ...Yes I think it's fair to say good understanding at about C / B standard *</i>
		2	<i>good understanding ... hmmm ... I wouldn't say good. I'd say satisfactory,</i>
		4	<i>Test is OK</i>
3	Yort's test results indicate an excellent understanding ...	2	<i>Really excellent marks in tests</i>
		3	<i>84 and 85% is pretty good though ... wonderful effort in the tests</i>
	Yort's test results indicate a very good understanding ...	1	<i>Very good understanding makes sense because the marks are certainly well above an A.</i>
		4	<i>this one it is strong with the test</i>
4	Meba's test results indicate a satisfactory understanding ... Meba's test results indicate a poor understanding ...	1	<i>Indicate a satisfactory understanding' ... you could even say poor, but two of them were passing, so I'd pick the fourth comment.</i>
		2	<i>low marks for test ... tests were satisfactory. Um... Yeah... there was only one that was really low, so we'll put ... ah, poor? ... it was only 50% ... 'poor understanding'.</i>
		3	<i>topic tests ... whoo ... satisfactory? No, it's not good enough</i>
		4	<i>the marks are all very low</i>
5	Wod's test results indicate a poor understanding ...	1	<i>because the test marks were very bad ... I'd have to say 'the level of understanding was poor.</i>
		2	<i>Topic tests are just way down the bottom</i>
		3	<i>Ah, tests ... result in good understanding ... no satisfactory understanding. I don't think so ... poor understanding</i>
		4	<i>Now for this one I can see based on the results presented it is lower</i>
6	Fon's test results indicate a good understanding ...	3	<i>topic tests ... good understanding</i>

Fon's test results indicate a satisfactory understanding ...	1	<i>Has test marks ranging from 66 to 48, so just above a pass, so not great, satisfactory ... Because she hasn't passed Chemistry I don't think I can say good. I'd have to say satisfactory</i>
	2	<i>so topic tests ... ah ... on the borderline but again I can't say a good understanding because she's not passing.</i>
	4	<i>Tests might be a little bit weak and low</i>
7 Gar's test results indicate a good understanding ...	1	<i>Test mark is fine. I wouldn't say satisfactory at 70% I'd say good.</i>
	2	<i>test, well they 're passing so I can't give him good</i>
	3	<i>topic tests, ah the test, 58, 96 70 % 54% um ... light test indicates excellent understanding of the concepts taught this semester. Um ... excellent understanding of the concepts taught ... Oh no. Middle - good understanding</i>
Gar's test results indicate a satisfactory understanding ...	4	<i>These marks are not so good. There is one that is quite good.</i>

* Comment does not match the rank allocated.

Comparison of the category comment and the transcript text shows a high degree of agreement and similarity between the key words. While respondents did not all select the same ranked comment for each hypothetical student, the transcript statements consistently indicated the ranking choice fit with the adjectives describing the standard of the marks.

There is one exception, which is Respondent 1 for Student 2 where the transcript comment does not match the written comment, suggesting either erroneous selection of the comment or that the respondent changed their mind regarding the selected comment category. This also supports the assertion that the Process Tracing task method does not capture all of the cognition occurring during this process.

Summary

The Process Tracing task was completed by four practising teachers and it generated a significant amount of information that was able to be analysed. The actual reports prepared for the seven hypothetical students and the transcripts of the thinking aloud done by the four respondents were enumerated and analysed statistically as well as undergoing content analysis to detect themes. The association between transcript data and comments were noted and the reliability and validity of the tasks were considered at the conclusion of the chapter.

Thorough examination of the transcripts of commentary provided by respondents in the Process Tracing task found a number of observations relating to (a) the use of a variety of cognitive strategies in report writing, (b) differences between the respondents approach to the task, (c) the impact of the provision of informal information on the number of cognitive strategies utilised and the ability to make inferences and individualise reports, (d) the association between consistency of marks and marks that are clearly high or low and the complexity of the ranking decisions in composing the report, (e) the association between knowing the student and improving the validity of reporting decisions.

In composing the written report comments all respondents most frequently commenced by surveying though the information provided to obtain a 'picture' of the student, noting consistency, contradictions, highlights, weak points and an overview of grades. All respondents considered salient pieces of information and made decisions about whether and how to include the information in the report. Marks or scores provided allowed respondents to select comments in some areas of the report. Respondents were also able to categorise from informal comments. The formal and informal information was able to be analysed, inferences made and decisions could be taken to individualise reports in a number of ways. In most reports, respondents checked back to the information to ensure the comments made were most appropriate, accurate or valid and to look for consistency in the information provided.

The most frequently used cognitive strategies observed through the Process Tracing task transcripts were Categorising from Marks, followed by Categorising from Comments. The category Analysing Information included Checking for Consistency, Lack of Information and the impact of informal information. Checking information and surveying information were also common strategies observed for many students by all respondents.

Statistical analysis found significant differences in the ranking decisions between respondents. The respondents all came from different teaching contexts including a rural government school, a metropolitan government school, an independent school and a Catholic systemic school. It may be inferred that teaching context and teachers professional knowledge, which is individual, does impact on the report comments that are written. Respondent 4 made few verbalisations for several students. Respondents 2

and 3 were more inclined to modify comments provided. Respondent 3 indicated more frustration with the nature of the Process Tracing task. He went to more lengths to shape the written text into a structure that he preferred. Respondent 3 was more inclined to express personal engagement with the hypothetical students and was able to project the scenario beyond the task and consider how the report would be received by parents.

The provision of informal information increases the number of cognitive strategies used by the respondents. In cases where there was no supporting informal information respondents used the strategies of Categorising from Marks and Inferring from Marks as well as Checking the Accuracy or Validity of comments made. When informal information was provided, respondents were able to refer to comments for selecting the most appropriate rank of comment. The more information was provided, the more it contributed to the decisions made, through categorising and inferring from comments.

The analysis of written comments found that the greatest consistency in report comment ranking was found for the student with a low standard of achievement and supporting information indicating poor behaviour and effort. When marks were very high or were very low the ranking decisions were Procedural level decisions. When marks were inconsistent or were 'borderline', a more complex Contingency level decision was evident, through the use of more cognitive strategies including inference and checking.

As more information is made available to the respondent the validity of the report can be improved by providing more input to determining Relevance and Utility and Values Implication. In reports where Respondent 3 expressed more engagement with the hypothetical students, the cognitive strategies were part of the highest level of Brookhart's Continuum of validity in grading, hence there appears to be an association between being engaged with the student and considering Social Consequence of reporting decisions.

Chapter 7. Teachers' Description of Aspects of Report Writing

Overview

Chapter 7 presents teachers' experiences of report writing; these are described and then analysed, giving three parts to the chapter. Firstly, transcripts of the semi-structured interview comments made by respondents to the Process Tracing task are discussed. Secondly, a narrative account of the report writing experience is presented and supplemented with artefacts of the report writing process. Thirdly, using qualitative methods, additional themes were drawn out and three of the research questions are addressed.

The respondents to the process tracing task addressed a number of concepts including the structure of the process tracing task, the process of report writing, school context and achievement descriptors, knowledge of students, and the personal response of teachers as part of the student-teacher relationship. Comments addressing the appropriateness of comments, the concepts of strategic adjustment and the value of informal information are summarised. Content analysis was conducted using ATLAS.ti and the coding lists described in Chapter 6. The analysis was initiated in Chapter 6 and it is completed in Chapter 7 following the discussion of the remaining artefacts.

The narrative account of report writing and artefacts of reporting are important to this study. The practice of report writing in Victoria between 2008 and 2012, within the framework of The Student Report Card and addressing the VELS curriculum produces a very specific and undoubtedly unique context for reporting. The narrative account was written using a process described by Black and Halliwell (2000). An informal interview in the manner of a conversation was audio taped. The discussion covered the four overarching questions of the study. The interview was transcribed and rewritten as a narrative account. This was returned to the interviewee for amendment and modification. The original transcript is provided in Appendix 14. The narrative account is presented in the text and is analysed using specific quotes.

Thematic network analysis of clusters of emerging themes leads to identification of global themes according to the method described by Attride-Stirling (2001). Insights described in this chapter complete the investigation for: Research Question 3a - What other organisational factors shape reporting?; Question 4a -What other factors influence

the reporting process?; and Question 4b - How does informal knowledge of students and their learning contribute to the report writing process?

Respondents' discussion of the Process Tracing Task and Experiences of Reporting

Discussions with the respondents both before and after undertaking the Process Tracing task, and comments made during the task, provided important perspectives on the conduct of the Process Tracing task and the real experiences of report writing. The meaning of achievement descriptors was raised with respondents in order to clarify what terms such as good, excellent and poor mean. The school context, parent experiences, relationships with students and the usefulness of informal notes were discussed. When the hypothetical data was composed, scenarios were created to elicit the Principles of Compensation or Strategic Leniency in the respondents, and interviews explored whether this response occurred. Respondent 4 also discussed a broader phenomenon which will be called 'strategic adjustment'.

Process Tracing task.

Respondents 3 and 4 raised the artificiality of the process tracing task as a way of capturing the process of report writing. The two concerns specified were, (a) the fact that the teacher would have knowledge of the student prior to writing reports, and (b) that the marks and comments were not presented in the way that the respondent preferred or contained the information that they prefer. Respondent 3 also noted: "*it was a bit more time consuming than what I realised initially.*"

This task was designed to model a scenario where a teacher has responsibility for writing reports for a small group of students they haven't taught, with only marks and minimal information. Respondent 4 contended that this would not occur; "*if you have to write the comments for students you never taught and you have only the grades, I don't think you can make a statement. I think you can only give the grades by themselves.*" This scenario proposed would be rare, but I have known it to occur. In one situation a staff member went on immediate leave close to the end-of-semester as a result of a serious illness. The reports were compiled by the Head of Science and were checked by a year level coordinator, who knew the students, for any anomalies. Respondent 3 noted that there is knowledge of students by other faculty members which

can be drawn upon: *“Knowledge is held within faculties or year level teams. We would still talk about these students.”* The idea that a teacher would be expected to write reports with virtually no knowledge of the student, *“that is completely alien to the reality of me teaching those students”*, according to Respondent 3. Respondent 2 noted: *“Yeah it’s not easy to do this when you don’t know the students and, although reports can be difficult anyway.”*

A number of concerns were raised about the way that information was supplied on the information cards for each hypothetical student. Respondents 2, 3 and 4 made reference to the way that the scores were provided on the information sheet; All indicated that they preferred to have percentages to best compare the results across tasks, and that the scores would be converted to percentages for that purpose. Respondent 4 noted: *“I converted them all into percentages and I talked to that. I said it is difficult to compare because usually I would work them out so that they could be equated to one another.”* Respondent 3 commented: *“And in this case she has a little bit less having 80% for all of these. 80% would be more accurate you know because 18.5 out of 25 is about 80%. You know not everybody can quickly find percentages Um and that would give me a little bit more.”* Respondent 2 also described the same strategy: *“It doesn’t really make any difference if there is percentages or marks. You just mentally put it into percentages anyway and they fit with a grading, a mental grading.”*

The other concern was that the informal comments and the report comments included in the database were either not composed by the respondent and therefore were hard to use or were not closely linked to the information provided. Respondent 2 noted: *“I think the comments don’t have a lot of character”* and *“I found that [comment] subsidiary”*. Respondent 3 commented during the transcript: *“that’s a strange sentence”* and *“[laughs] that’s [that sentence is] quite amusing.”* In discussing the use of common databases within faculties and schools, Respondent 3 said, *“I’d hate that. It takes away the personality of the teacher.”* Respondent 4 said: *“I have my comments. We make our own comments go on, because sometimes I might not be able to use these.”* Respondent 4 referred specifically to Student 3, whose information set included a comment that more effort was necessary in presentation. Respondent four indicated that the comment was hard to fit with other information *“because ‘working on the presentation’ is what part of the document or something. You know?”* Respondent 4 also commented on the need to modify comments, which was a strategy employed extensively by Respondent 3

and less so by Respondent 2: *“I found with these comments I couldn’t use the comments unless you can change them slightly like this.”*

Respondent 3 was displeased with the provision of verbal information. Respondent 3 argued that there would be access to all information about students through colleagues and through knowing their work and seeing them at work. Respondent 3 felt unhappy about only relying on her memory of salient information, and in the task expressed frustration at forgetting which piece of information went with which hypothetical student. In fact the formal marks fit with the student information and *“that jogged my memory ... um ... so yes in that sense I was able to connect the evidence with what I was told.”*

Process of report writing.

During the Process Tracing task respondents generated evidence of several cognitive processes that contribute to the judgements and decisions intrinsic in producing the report. One of the strongest cues in selecting comments is the consistency of the information about the students that is made available. Respondents also revealed information about habits and preferences followed during the process.

The process of report writing as seen in the analysis generally begins with a survey of information that is available about the student and by comparing percentage scores across the tasks. Respondent 2 explained that the percentage score led to an overall classification of students’ performance; *“You just mentally put it into percentages anyway and they fit with a grading a mental grading.”* This overview allowed Respondent 3 to produce an introductory statement for the report, although this was problematic initially; *“I think it needs an introduction ... but I obviously don’t know the kid well enough to do that.”* After creating a general introductory statement, Respondent 3 used it as a standard for all subsequent reports; *“the bits that I modified at the beginning as an introduction I’m going to marry into the next student so that is “this semester year nine purple complete a number of activities ... um and then from there I’ll ...uh ... I can’t comment Um.. then I might find and insert what’s appropriate I’ll probably try and choose a format that is similar to what I have.”* Respondent 3 further elaborated on this process during the interview comments: *“When I write my own report, I do write my own automatic comments and I adapt and modify them*

accordingly. The first few, so this many here, does take the most time and then after that, as you are more familiar with your words and how they fit together, using those automatic ones much more. And know where to modify and it just becomes much more quick over time so I'd just say some of my colleagues do spend ages writing every report individually whereas I think I can convey efficient information if I spend a lot of time on the first few and then once I understand the in and out of it, I can modify appropriately. It's very quick once I get going."

When students are known to the teacher selecting the correct phrase can be difficult but in this process tracing task the respondents avoided comments that included specific information that could not be vouched for as true for the student. According to Respondent 2, *"You also can't select comments that give too much information because it may or may not be correct and you don't have any evidence of that"* and according to Respondent 4 *"Some of the comments don't match the description so to be safe you then decide not to write anything about that bit, or if you write half of the comment you leave the other half out"*. Some terms are preferable because they are open to interpretation; according to Respondent 1, *"The word neat is ... a more subjective word so it is easy to pick the comment with the word neat rather than accurate and detailed."*

Respondent 1 noted the value of consistency in the information about students *"first student all the marks appear good so it is a straightforward."* Respondent 2 noted: *"Where it was consistent percentages it was pretty easy."* When contradictory evidence was observed, it appears to have increased the difficulty of the report writing task: Respondent 2 said, *"If the marks are all over the place, well then I think it makes it a little bit more difficult"* and Respondent 4 describes a specific example of this *"when you see that, like this one that more effort on presentation in necessary but then he got 80% on the poster. It says that he hates group work but he does quite well on the practical reports, and the field work is generally woeful because he failed pretty dismally, and so I think it was hard to give him comments for that one."* Respondent 2 summarised the significance of consistency in the marks with this statement, *"the hardest ones are the one that were not consistent marks really ... um ... and the easy ones are probably ones that are consistent and had comments."*

When considering consistency a teacher will also need to ensure that comments are consistent between students to ensure that the reports are fair and there is no bias.

Respondent 2 was seen to go back and check what comment was used and the thinking behind it, with a different hypothetical student *“actually I’m going to go back and look that second student ... and just see if I did write something on ... oh, yes, yes, I’ve got an attitude one for that.”*

School context and achievement descriptors.

It became apparent after Respondent 1 had completed this task that it would be necessary to check what the achievement descriptors excellent, good, satisfactory and poor, mean to the respondents in order to make sense of the selection of comments. It is likely that the perception of standards is linked to the teaching context of the respondent as well as their personal professional beliefs about standards in student work.

Respondent 3, in most cases, gave a higher ranked comment for tests than Respondent 4. When asked what the descriptor ‘good’ meant, Respondent 4 said, *“It is hard to give it a specific value. I have written “good” for 15 out of 20 or for higher, you know. For some students it was halfway through.”* Respondent 3 said, *“Good would be somewhere above 50% between 50 and 60%.”* Respondent 2 indicated that good would be above 60% but satisfactory may range from 45% to over 60%, depending on the student. Respondent 4 agreed; *“Satisfactory would be depending on what evidence I’d got from a student - anywhere between 40 and 50%, that might be satisfactory depending on how they can demonstrate their competency.”* Respondent 3 said excellent was *“The top 5%... Minimal mistakes. It’s close to perfect”* and Respondent 2 indicated that above 90% was excellent. Comment ranking in the task indicated there was greatest agreement when marks were very low. Respondent 4 said ‘poor’ was *“generally less than 40%. I think less than 40% demonstrates that they either cannot settle in to class, they choose not to concentrate, they choose to be disruptive or they chose to do no work and if that’s the case then I’ve less, no sympathy for them.”*

Respondent 4 spoke more extensively to the theme of school context, grading and the pastoral concern over giving low grades and comments during the interview, although these themes did not appear in the transcript for the Process Tracing task. She said, *“Here we have very high, high, medium and low and the percentages are set and agreed on. You have to give the one or the other but pastorally you feel ... you feel you*

have to acknowledge the students pastorally. So if you gave a student for low, you feel “is it very negative pastorally?”

Respondent 4 highlights the boundary between the Values Implication and Social Consequence levels of Brookhart’s Continuum of validity in grading (1993), in determining the validity of a student report. On the one hand the grading or ranking is valid and accurate but is it appropriate to the greater aim of improving student learning; *“I think it is fifty-fifty you know. I have to agree that it can be true and fair but also it may be negative.”* Respondent 4 notes that there are clearly defined criteria for grades used within the school to assist in comparing students across a year level, *“My student who is A+ to this class but I don’t know the other classes. There are criterion at that year level that will allow me to say she is A+ student because she has the concepts specified for that year level.”* The grading ranking or reporting not only has to be fair and valid for the individual but it needs to be fair across other students within the cohort, therefore there has to be guidelines in place to shape the grading and reporting actions of a number of staff within the school. The wider social implications of differing meanings of grading was highlighted in Chapter 1 in the discussion of the Federal Government reporting initiative of 2004, to improve the clarity of indicators of achievement by requiring core subjects to be graded on an A to E continuum or equivalent scale.

Knowledge of students and the personal response of teachers due to the relationship.

The questionnaire phase of this study investigated teachers’ association with the idea of knowing their students and found, overall, a strong association with that belief, regardless of teaching experience, gender or other aspects of teaching context. The following extensive quote from Respondent 4 provides insight into her relationship with one student:

“One of my very good students, she got low marks on her test and I know she is much brighter than that. She does better than that. She just had a bad day and I can’t really apply it in this way but I was a little bit more, you know, because I felt that she was an A+ student in my class. I’ve taught her in Year 7. I’ve taught her in Year 9. I know. Based on my knowledge of her. And you know something else to consider is what the class is like”.

Respondent 4 is adamant that she knows the student; she knows the usual standard of her work, describing the student as “very good”, bright and an “A+ student”. She emphasises the longevity of the relationship, and her place in the interaction with phrases including: “in *my* class”, “*my* knowledge”, “one of *my* very good students”. Respondent 4 knows that her result is uncharacteristic and she attributes the performance to a ‘bad day’ rather than taking the empirical evidence of her performance on the task.

All data accrued in this study indicates that the relationship between the teacher and student over an extended period of time allows for the preparation of meaningful comments in school report. Respondent 2 said, “*It’s not easy to do this when you don’t know the students.*” The character of the teacher-student relationship includes knowledge of the student’s performance but also knowledge of the student’s learning experience and how this fits with their individual learning goals. The assessment tasks provide more information than just scores, as indicated in the discussion of the questionnaire in Chapter 4, and the teacher engages with the student, expressing a personal response to their achievement.

In general, many teachers do not value high-stakes assessment of students because results may not indicate the effort and successes observed over an extended period. Respondent 4 noted, that “*You use what you know. You can practically observe the students and you know what they can do*”. When reporting on student achievement it may challenge a teacher to report a mark that doesn’t indicate what competencies were demonstrated in other ways. Respondent 4 said, “*If you know the student is an A+ I couldn’t accept giving a C+. It isn’t fair on the student. She did the test but she did so many other examples since then. She moved, on she learned. You use that practically.*”

The teacher can anticipate the possibility of results in examinations or specific tasks being unrepresentative of student achievement and can take steps to counter that bias over the semester. Respondent 4 said, “*If you know the weighting of assessment in advance you can plan and gauge how the students are going. You can tweak weightings or scale tests so that it reflects the student’s real achievement.*” This planning for reports indicates that the teacher is personally engaged with the reporting process well in advance of writing the reports. Another indicator of this anticipation of

report writing was noted by Respondent 4: *“If I know they have problems with writing in the practical reports I will make sure to include that when writing comments.”*

The quote from Respondent 4 earlier in this section conveyed the respondent’s confidence in her knowledge of the student through repetition of the assertion that she “knew” the student. Respondent 1 also indicated that confidence was a feeling that was part of the reporting process. Respondent 1 said that having the required evidence, *“it made you more confident.”* The questionnaire found that fewer teachers had a strong association with evidence collecting behaviours, but it may be that the benefit of evidence collecting may be in confidence about their knowledge of students or confidence in their report writing assertions.

Respondent 3 made a number of statements in the transcript indicating personal responses such as pride, pleasure, empathy and sympathy. Comments ranged from *“a great effort”* and *“well done!”* to *“the transect graph was not completed ... this is unfortunate considering his wonderful effort in the tests”*, *“you demonstrated a good understanding but I know you can do better”*, *“Topic tests ... disappointing at best”* and *“a kid that is misbehaving, then performs well in practical activities when they get to the outdoor probably tells me that they are an outdoorsy sort of kid so they’re not stupid. The pick up on information but they prefer to be outside doing it”*. Respondent 2 also described personal response to the task: *“that allowed me to feel OK ... I would be comfortable giving him a mark or a comment that had words like poor and failed and unsatisfactory in it”*. Another example is Respondent 3’s description of how he would pass on information about learning achievement directly to parents; *“I would either communicate directly with the individual and say that’s a fantastic effort in light of the present circumstances. In a parent-teacher interview I would describe that information. It is a more personal. I’ve got a face and ... yeah ...my body language and facial expressions can convey more sympathy more empathy than the words on a page.”* Although the other respondents did not show evidence of these personal responses, it is certain that they would be part of the reporting experience when the students were known by the teacher.

Appropriateness of comments when considering parents and other readers.

In writing reports, Respondent 4’s approach was *“I’m thinking about this as a parent and what I would like to see as a parent.”* Teachers’ assessment of what is

appropriate is an aspect of professional knowledge. Knowing the students, the progress of their learning over time, their personal circumstances and an awareness of the report as a document that is seen beyond the school and the parents, teachers must moderate the tone of the report. It is a balance between being fair and accurate and encouraging; Respondent 4 said, *“even when you know the students, you have to be very careful about what you say about it, so I would still like to say about somebody that they waste their time talking too much, but you have to be careful with the report because it is a little bit aggressive, you know on the one side and I think of the others as well. You need to practically, you know, say what you can.”*

It was important to Respondent 3 that parents and the students did not perceive the report comments to be arrogant or condescending. Respondent 3 said *“I wanted to write something in the report which I chose to take out, because I felt that if it was in a formal report it sounded condescending”* and goes on to indicate that it is better discussed face to face. Within the process-tracing task transcript, with respect to Student 6, Respondent 3 notes, *“but it is definitely something I would include in a parent-teacher interview ...um ... and I would try and reinforce the positive behaviour as far as being a little bit more autonomous. Being more autonomous in the class in And at parent-teacher interview I think I could convey that more personally so I think that it just sounds a little ... again it sounds condescending to put it in a report, in a written report.”* And for Student 2, *“I think the way I’d give feedback there is, isn’t the report. I’d take that student aside, assuming I knew them well enough, good enough for the report and I’d state now those results, yes, you demonstrated a good understanding but I know you can do better” ... “so I don’t think it is appropriate to write that comment in the report because it is too formal and it is also a little bit um ... what would you call it ... ah, not arrogant looking down upon ... condescending.”* Respondent 2 makes the same point *“that can’t really feature on a report... it is something you would deal with one on one with the student.”*

If report comments are bland, overblown, flowery or not specific to the individual they begin to be less useful. According to Respondent 2, *“The thing is, you know, if I have to tell you about a kid then it has to say something.”* Respondent 3, in a similar theme says *“If the parents don’t respect it. They’re not going to actually give you anything ... it’s unlikely you’re going to get useful feedback or useful response from that student. I suppose useful isn’t quite the right word.”* This comment emphasises that parents are not just recipients, but stakeholders in the students’ achievement.

Strategic adjustments.

The transcript analysis indicated that the respondents carefully considered the informal information that would lend itself to ‘special consideration’ for the student when composing reports. It also showed that teachers in this task did not select more favourable comments than was warranted by the marks achieved but they modified report comments to include encouraging statements and to select favourable comments for Effort from comments provided. Respondent 2 said, *“If you know they’re attentive then you are inclined to maybe make it reflect better ... what the marks say”* and with specific reference to Student 2, *“But the girl whose father was sick, well, then you have to actually and fairly have to allow leniency and it wouldn’t be appropriate to be too heavy handed with that information.”*

Where the informal information describing effort and behaviour was not positive, the transcripts indicated that respondents felt more comfortable in selecting less favourable comments. Respondent 2 also addressed this in referring to Students 5 and 3: *“I think the boy, you know, who sets fire to things yes that allowed me to feel OK ... I would be comfortable giving him a mark or a comment that had words like poor and failed and unsatisfactory in it”* and *“In the case of the kid who had a fight I think that made a difference and ... because you know ... although the tricky bit was his percentages were very high, so I think I sort of traded that off.”* Respondent 3, as previously noted said, *“they choose not to concentrate, they choose to be disruptive or they chose to do no work and if that’s the case then I’ve less, no sympathy for them.”*

In general, Respondent 3 felt that students have better understanding of the work covered than is demonstrated in assessments and that formal assessments in science don’t favour students with weaker general literacy. This may shed some light on the respondent’s personal philosophies about the meaning of achievement indicators and the purpose of assessment. Respondent 3 said, *“I think that more often than not, students understand what is going on but they mix up their words. You know, especially if they’ve been doing something practical. Um ... and it’s a matter of their literacy, their explanations. They’re less well versed than their actual comprehension.”* It may also be that strategic adjustments are more favoured in some school contexts. Respondent 4 commented: *“You know recently I think particularly in this school it is easier to do better in mathematics than in other subjects. It is the culture of the school. I think also in science that they are encouraged by good marks but you have to be*

careful because of their understanding. Sometimes you need to go back in this way." The comments from both Respondents 3 and 4 suggest that in those school contexts encouraging students is valued highly.

Value of informal information.

An aspect of this study is to discern how important informal information is for the preparation of reports. The respondents address this question directly and indirectly. Where the results were consistent, either generally high or generally poor, the reports were easy to compose. Where results were inconsistent comments were helpful if they directly provided information to assist in selecting the most appropriate comment or if they provided information to justify inferences made about performance.

Where only formal marks were available Respondent 2 said, "*The students that had only formal scores were ... well it was fine*" and Respondent 4 said, "*The ones that don't have anything you just copy the comment for the grade.*" Respondent 3 found that Student 4, one of the hypothetical students provided with no additional informal information was easier to compose, saying during the Process Tracing task, "*that one's easier.*"

When information provided was consistent the report was easier to compose. According to Respondent 2, "*the hardest ones are the one that were not consistent marks really ... um ... and the easy ones are probably ones that are consistent and had comments.*" Respondent 2 also reflected on the usefulness of the comments; "*Where it was consistent percentages it was pretty easy ... If the marks are all over the place, well then I think it makes it a little bit more difficult.*" Respondent 1 indicated that much of the informal information provided wasn't directly useful; "*It helped me remember the personalities but as far as the information relating to 'needs to memorise chemical symbols', I didn't use any of that.*"

Respondent 1 noted the value of the informal information in the report composition "*the ones where there were additional notes made all the difference; you could tie the comments to the written words*". Respondent 3 said, "*It gave me insights especially related to ... yes... the trying to set fire to thing.*" Respondent 2 said, "*It made a difference to have the informal comments down because you could use more informing kinds of comments. Things that talked about attentiveness ... um ... is better than sort*

of just having a set of marks.” Respondent 2 also indicated that the presence of informal information led to the use of analysing strategies to consider the impact of the information, leading to a more complicated judgement about the achievement: *I think that made a difference and ... because you know ... although the tricky bit was his percentages were very high, so I think I sort of traded that off.*”

The informal information is most beneficial when the observations or notes are made by the author of the report. Respondent 3 indicated that he held knowledge about the students in his mind *“it is usually something that I’ve got in my head”* so explicitly or implicitly, the knowledge of incidents, family issues or evidence of behaviour, attitudes or skill that impact on performance will influence the judgements made in report writing. As indicated in the questionnaire, teachers take more information from formative and summative assessment than just marks, which would also, implicitly or explicitly shape the ranking judgements that were made in report writing. Respondent 4 said, *“You know, I would feel like I would want to see the tests themselves because you can see that you know how they really understood. Yes, you know?”* The informal comments provided in the process tracing task were written in order to support the ranking aspect of the task. As previously noted, some schools use very strictly controlled comment databases and some schools allow teachers to compose comments that are limited in other ways, such as tone, format or simply word limits. Comments shaped by the teacher to match the assessment tasks and the emphases on content or skill would be more meaningful, and informal records of personal observations of effort, tasks or incidents kept by the teacher would be informative and significant.

Summary.

In interview or discussion surrounding the Process Tracing task, respondents reflected on the inherent flaws in the process tracing task and the strategies used in the report writing process. The aspects of the task that were not authentic to real report writing, were not knowing the students and not using personally generated informal notes and comments. Within the constraints of the task, respondents generally indicated that they held similar but not identical beliefs about the meaning of achievement indicators, that the reports based on consistent results were easiest to complete, that informal information had an impact on the ranking of comments and informal information was most helpful when it could be specifically linked to the report

comments available. Teachers' professional knowledge, knowledge of students and empathy for parents contributed to decisions about what was appropriate to include in reports. These findings will be collated with the findings of the descriptive narrative to address the relevant research questions.

The Experience of Report Writing – a Descriptive Narrative

The themes and insights generated in the theoretical and research elements of this task only consider discrete parts of the reporting process according to anonymous respondents to the questionnaire and participants in the Process Tracing task. In order to find the fully integrated perspective offered by Teaching as a way of being, access to the lived professional experience and its emotions within a real institutional context is required.

An experienced teacher who will be referred to with the pseudonym "Juliet" participated in an audio-taped informal interview. The discussion was directed using general descriptive questions that related to the levels of the Teaching as a way of being framework. The transcript of the discussion is presented in Appendix 14. A summary narrative describing Juliet's insights into the process of report writing follows. To improve the validity of this account it was provided to Juliet and she edited so that it was a true reflection of her experiences and opinions.

Juliet works at a small inner city systemic Catholic school for girls. The cohort of students is of mixed ability, and is drawn from mixed socioeconomic and ethnic backgrounds.

Juliet presents the role of the teacher as an enthusiastic, passionate master of the subject area. She also highlights the relationship between student and the teacher noting that the student must have confidence in the teacher and trust them. Juliet sees the semester report as a description of the deficit – the difference between a definitive performance on a task and the students' ability to approximate that. She describes the semester report as an account to parents of how the student failed to achieve the maximum possible score. She also acknowledges that in some cases both students and parents will focus only on the score achieved.

Juliet says she holds an ideal response in her mind when she marks the students work. The ideal is associated with the best possible response to the

teaching and learning experienced in class over the topic. She acknowledges that the ideal is, to some extent vague, whereby it may differ from task to task and between teachers. Formal rubrics generally fail to capture the essence of an ideal performance on a task; in fact, they provide a recipe for students which can then confine them to a mediocre standard.

Juliet collects evidence over the semester annotating a mark book with codes relating to characteristics of the tasks. She monitors student performance by looking for patterns in the codes. If a student failed to make improvements over a number of tasks, Juliet would attend to that concern individually with the student.

Juliet also provides specific feedback to students on their work, and this is the kind of commentary which features on the semester report comment. In effect, the student report will not contain anything new – the student has already been given that feedback.

Juliet finds that she knows students as a result of interacting with them through the work they produce. Knowing the student allows Juliet to predict the usual standard of the students' work. She expressed concern that work completed outside of the classroom can result in an incorrect perception of student ability. Also she notes that is important not to equate participation in class with competence in the work as some students are natural introverts, or shy to speak up. She is adamant that thinking processes and intelligence should not be confused with personality types or traits.

When it comes to writing reports, Juliet begins with the characteristics of the report that can be entered with a keyboard shortcut (control down – giving all students the same score). She gives all students the highest possible rating for work habits and then adjusts students down from that rating if their performance doesn't warrant the highest mark. Juliet prefers to allocate the highest mark for effort because she believes that she must assume the student has put in their highest possible effort. She described another colleague who prefers to select a lower ranking and then move individual students up; the colleague argued that she cannot know what the student is actually capable of and is not prepared to sell the students short.

Juliet is adamant that she cannot risk not rewarding a student who has given 100% even though they only obtained an average mark. She associates this

compassion for students who do their best but do not excel, with her personal experiences in primary school. In her primary school years, her teacher would line students up according to their performance; Juliet has seen that this had a detrimental effect on her classmates even into adulthood. She expressed a belief that teachers must remember that each child is a person and judge the work not the person. Her feedback to students will always be a balance of acknowledging the positive and justifying the mark obtained by indicating the deficits. She holds that the work produced by students is precious to them, is a reflection of their self-identity and warrants respect, hence marking and feedback and reporting must be conducted with integrity.

In considering how the school context shapes reporting, Juliet, found some of the policies to be trivial and about deflecting responsibility for student performance from the student onto the teacher. She is happy working with providing comments as dot points in junior level reports as this fits well with her approach to reports and her records of work. At VCE, she follows the same format that she uses with feedback providing a description of the task, a modifier and a general comment. Reports can only focus on the work and even pastoral reports have a detached character because they are written in passive voice and cliché.

The report proof reading process brings up strong emotions. Juliet describes teachers as being irate, confused and agitated during the report writing episodes. As the coordinators return reports, they criticise, at times incorrectly, characteristics of the grammar and content of the reports. By virtue of their appointment they hold authority to ask the teacher to change a report, but do not necessarily have the capability to make better judgements about the comment than the teacher.

Discussion of narrative

The explicit purpose of including the narrative in this analysis was to seek out evidence of knowledge, judgements and experiences within a specific context. This discussion will use direct quotes from the transcript to supplement the descriptive summary. Themes identified in the narrative and transcript, together with ideas emphasised by the subject of the interview will be discussed under the four headings of the Teaching as a way of being framework.

Across the transcript a number of themes were apparent. They include: teachers know students through assessing their work and through keeping records and monitoring performance, hence reporting is a longitudinal process; beliefs that are a product of personal experiences shape teachers professional decision making; assessing student work is in part about how close students come to creating an ideal or perfect response relative to the teaching and learning that has occurred, hence it is more variable than can be captured with a prescriptive rubric; school enforced guidelines are beneficial but also restricting and together with the features of the reporting process they are a source of frustration; and emotional tensions are a feature of the teaching relationship.

Juliet described aspects of the process that she follows, from how she collects assessment information to what she believes the function of the report is. In the transcript, she reiterated four ideas, several times in some cases, and she checked many times that her meaning was clear to the researcher using frequent questioning such as “Right?” and “Do you see?”. When Juliet modified the descriptive summary, she edited it to further emphasise these points. The ideas were: (i) that student work is assessed against an ideal performance possible given the scope of teaching and learning that has occurred in the classroom; (ii) that the report is a justification to parents of why their child’s performance is not at an A+ standard; (iii) that her knowledge of student learning is gathered from their authentic performance of work; and (iv) that student participation in class shouldn’t be confused with their knowledge and understanding, as that discriminates against less assertive students.

Shavelson indicated that pedagogical decisions were shaped by information about students, the nature of the instructional tasks and institutional constraints (1981). The kinds of professional knowledge described in the narrative related to the collection of information about student learning, the provision of feedback and the importance of subject content knowledge coupled with a passion for the subject area. Juliet indicated that she knows about student learning by interacting with students through their learning and assessment. She said “*The stuff needs to be done in the classroom and then you start to get a bit of a sense of who they are.*” She uses the assessment of student work on a number of tasks to know about their expected performance “*So I know the kid by the end of five pieces of assessment. I know what that child can do and I know where the deficit is.*” Juliet specifically collects a body of evidence about the development of

their learning. This knowledge is shared with students through specific feedback about the work. Juliet said: *“When I correct the kids work, I write in my book. I have little sort of symbols and things and you make the assumption then that over a period of time, you have put together a picture of the student.”* When asked if she holds other knowledge about students in her mind she said, *“If the class is really big I probably don't get to that stage. With the small classes, um it is kind of in me. There's a vagueness in it, I just kind of know and it is kind of ... I get to know the student and say this is what she... this is how she is going to come in”.*

Juliet describes giving detailed feedback to students that is affirming but constructive. *“I do like to justify my mark. I will always start off with a positive statement and then ‘however..’. Always”.* She is adamant that the feedback is specific and constructive: *“I say girls it takes me a long time to mark your work and every piece of work is a little note to you, not a bunch of clichés”.* The inclusion of a positive statement is tied in with her belief in care for the students with integrity; *“I don't like the cliché of positive.”*

She uses her evidence base to monitor learning and assist students to improve: *“I look in my book and I see that she's fixing up with the structure thing, which was the problem last time, so she's learning and then if I see that the pattern isn't breaking I'll come in and I say, ‘now we've had this problem three times’. So then I'll see a pattern and I'll come in on that. ‘Let's think of a way to actually fix this problem”.* The process of knowing students takes time, so that by end of the learning cycle not only does she have the ability to use her knowledge of student performance to provide information to parents, she has already acted on that knowledge in collaboration with the student. Juliet believes that the report is only a collation of the feedback about learning that has already been discussed; *“By the time I write the report the child knows all of that. There's nothing in the report that hasn't been on the child's work.”*

Juliet describes having a passion for her subject area as a *“real excitement about the knowledge”* and therefore holding detailed subject knowledge is very important”: *“being very good at your discipline is really, really important.”* Juliet says *“I always say a good teacher is in love with something and wants you to fall in love with something.”* In these descriptions there is a belief that thorough subject knowledge is important, but that it must be communicated to the students with zeal.

It may be that this picture of the good teacher who, as a guru, has the capacity to recognise perfect performance in assessment underlies Juliet's belief that reporting is a description of deficits. She describes a student report in this way: *"The report is a description of the sorts of things the child can do but is not yet up to the absolute optimum point. It is to the parents and I've... I hate to say this, but it's a justification for why the child doesn't have an A plus."* A perfect report would have the optimum score of A+ across the board, so Juliet believes what she has to communicate is the reasons that the student performance didn't warrant a perfect score. It is clear that she directs the report comments to the parents, rather than the students: *"This is why your child isn't an A plus yet but if we play with all these things and if your child stays with me you know we'll move that along. Yeah. That's kind of the model in my head rightly or wrongly and then but there would be nothing in a report that the child wouldn't know."*

Having described student reports in this format, Juliet laments the fact that student reports are limited to commentary on task performance, even for Pastoral reports that have no academic element. In other schools, pastoral reports address the social and affective aspects of the child's school experience: *"It told me how the child interacted or didn't interact, how the child was seen by the teachers, was seen by the school."* She feels that the pastoral element of a report needs to include *"Something that acknowledges the child's individuality and humanity."*

Juliet acknowledges that optimum performance on a task is an ideal that is her own construct, from her professional knowledge base. It resists perfect description because it varies from task to task and between teachers. She said: *"I don't know, there's a vagueness there. See the criteria sheets or the rubrics which I think are nonsense, they try to capture that. They try to capture it and in my opinion it didn't work, yeah? In my opinion it's because [it is] prescriptive. It actually told the child what to do and could only produce a medium, a...an average piece of work. It is impossible to prescribe to that level."*

When writing reports, Juliet begins with the most routine data entry tasks, using keyboard shortcuts to enter the data that is common to the cohort. A spreadsheet data entry form for a Year 9 science class is shown as Figure 7.1

Science

<input type="checkbox"/> Show Info Window <input type="button" value="Preview/Print"/> <input type="button" value="Save"/>																
<input type="checkbox"/> All <input type="checkbox"/> Science <input type="checkbox"/> Communication <input type="checkbox"/> Personal Learning <input type="checkbox"/> Assessment Tasks <input type="checkbox"/> Work Habits <input type="checkbox"/> Comment																
Student	Science		Communication		Personal Learning		Assessment Tasks						Work Habits			
	SCISKU	SCISWO	COMLVR	COMPRE	PLEIDV	PLEMPL	VAS1	VAS2	VAS6	VAS3	VAS4	ASS	WH1	WH2	WH3	WH4
AGRETT, Agnes "Aggie" Diabasis	5.75	5.75	5.75	5.75	5.75	5.75	74%	66%	83%	63%	79%	68%	4	4	4	4
AWES, John Andrew	5.25	5.25	5.25	5.25	5.25	5.25	58%	47%	54%	UG	UG	NA	2	4	1	3
DEWAL, Matthew Matthew	5.75	5.75	5.75	5.75	5.75	5.75	70%	63%	85%	75%	90%	82%	5	4	4	4
DEWES, David "David" Devoille	5.75	5.75	5.75	5.75	5.75	5.75	66%	56%	68%	63%	66%	53%	4	4	4	4
DEWITT, David "David" Dewitt	5.75	5.75	5.75	5.75	5.75	5.75	91%	79%	74%	62%	86%	74%	4	4	4	4
GHENT, Nicholas "Nick" Ghent	5.50	5.75	5.75	5.75	5.75	5.75	50%	UG	74%	53%	83%	51%	4	4	4	4
GHENT, Emily "Emily" Ghent	5.50	5.75	5.75	5.75	5.75	5.75	65%	53%	78%	56%	56%	51%	4	4	4	4
GHENT, Thomas "Tom" Ghent	5.75	5.75	5.75	5.75	5.75	5.75	85%	73%	86%	79%	89%	83%	4	4	4	4
COTTELL, Stuart "Stuart" Cottell	5.50	5.50	5.50	5.50	5.75	5.75	52%	59%	79%	66%	69%	62%	4	5	4	4
CRACK, John "John" Crack	5.75	5.75	5.75	5.75	5.75	5.75	78%	69%	84%	88%	82%	78%	5	5	5	4
CRACK, John "John" Crack	5.25	5.50	5.50	5.50	5.50	5.50	43%	44%	74%	NA	45%	NA	3	4	3	3
CRACK, My "My" Crack	5.50	5.50	5.75	5.75	5.50	5.50	80%	43%	46%	40%	40%	66%	2	4	2	3
COO, Sarah "Sarah" Cooley	5.50	5.50	5.75	5.75	5.50	5.50	56%	69%	51%	40%	64%	53%	3	4	2	3
COO, Simon "Simon" Cooley	5.75	5.75	5.75	5.75	5.75	5.75	96%	74%	94%	90%	98%	93%	5	5	5	5
COOPER, David "David" Cooper	5.25	5.25	5.25	5.25	5.25	5.25	UG	UG	71%	UG	NA	UG	1	3	1	2
COOPER, Simon "Simon" Cooper	5.75	5.50	5.75	5.75	5.75	5.75	NA	NA	80%	79%	98%	85%	4	5	5	3
COOPER, Stephen "Stephen" Cooper	5.75	5.75	5.75	5.75	5.75	5.75	79%	65%	84%	79%	79%	64%	4	5	4	4

Figure 7-1 Screenshot entry screen for Progression Points, Results and Work Habits ratings

In Figure 7.1 the first six columns show the Progression Point rankings for the dimensions that make up the Science, Communication and Personal Tasks dimensions that must be ranked by a science teacher. The next six columns show the percentage marks obtained for six tasks or for six grouped scores, such as for laboratory reports. The next four columns relate to the work habits referred to by Juliet in the narrative. Juliet said, “*I do a control C for 5 and then I change some*” meaning she selects an ‘excellent’ rating for the work habits categories of effort, application and behaviour for all students then adjust down the ranking for students who she felt did not achieve that rating. In effect she gives excellent as the norm for work habits.

In discussing the reasons she makes that choice, in contrast to a peer who marks them with satisfactory as a default, Juliet recognised the source of her beliefs about student effort. She said: “*In it is a whole lot of our own stuff. It is really interesting. It’s our own stuff. I have a tremendous compassion for the kid that has just done the best and that’s what she can get. Where does it come from? Probably a shocking primary school where we used to get lined up according to how we were in the tests and stuff and I was very lucky because I was always at the top but I used to look at the faces of everybody else and some of those people I still know and they’re good friends of mine and I know how it has affected them. So I’m not prepared to take that risk, ever.*”

Juliet describes the judgements in assessing and reporting as “*tricky*”, “*risky*” and “*tremendously sensitive.*” Specifically with respect to reports, Juliet said “*What risks are you prepared to take in terms of your commenting?*” She judges student performance by using her records of performance and “*I suppose seeing little patterns.*” She continued, “*I’m not prepared to make judgements on whether kids respond*

verbally in class very much.” Despite there being evidence available, many of the judgements made by a teacher are the products of assumptions; “We’re all making a call there. We’re kind of, I am, assuming the best. You are assuming the worst. I am assuming that the kid has put in all she can. Now why do I do that? Because I cannot risk it and be able to get up in the morning. Ok, I cannot risk that I’ve written one of those and the kid has put in 100% effort and it’s not an excellent. I won’t take that risk, so I work the other way”. Many of the statements made by Juliet communicate a strong aversion to making unfair judgments of students. She said: “It’s tricky because if you’re not careful you’ll equate things like how often kids answer in class if they’re talkative, if they’re blah, blah, blah, blah and then you might be judging something else. You might be judging the extrovert and the introvert and you can be judged very harshly and wrongly. Just because someone is speaking in class doesn’t mean they are saying anything intelligent and just because someone is quiet doesn’t mean they’re not thinking.”

Despite expressing a fear of making unfair judgements, Juliet defends the competence of the teacher to recognise and describe the social and emotional development of the students in her care: *“You know with those quiet students, kids go to them and ask them for advice and stuff and I used to see that in the morning and they used to help a little kid with her maths or something you know. They were my class that are now Year 11 and they were beautiful children and I think it is really important.”*

The difficulty with reporting is also about weighing up the impact of the comment on the child, at that point and then into the future. Juliet said the difficulty is to *“keep a balance of the respect for the child and the person, the relationship between the child and the work and to be realistic about the model that we use psychologically etc. etc. to keep all of that going is really tricky and to maintain a kind of integrity around it.”* She also argues that there is a relationship between the person and the piece of work which must be respected, hence the need to provide honest and specific feedback for student work. Juliet said: *“When you produce a piece of work, particularly when your hearts in there, it feels like an attack on you, so you’ve got to be really, really careful that when you talk about the work there is some objective language there”* and *“We’ve all studied and you can get quite irate and you want an explanation as to why that wasn’t judged at the level you expected.”*

Juliet’s commentary is intrinsically emotional. Her descriptions communicate passion, fear, frustration, defensiveness about teaching and protectiveness towards students in her care. She said, “*There has to be a tremendous sensitivity. Every child has a special gift.*” Teaching as a way of being acknowledges the emotional character to the work of teachers and these strong emotions are consistent with an attachment to professional identity. Juliet said” *I heard this thing once where they asked a teacher ‘What do you teach?’ and he said ‘children’*”. So, despite her assertions that a teacher must communicate love for the subject, she sees the relationship with students as the core of the teaching role: “*Because, ultimately, we are teaching children. These are people, we’re not really teaching science.*” The emotional interaction goes in two-ways; She says students must have trust “*that their teacher is excited by the journey*” and “*They have to have confidence, they have to have trust, yeah, in the teacher. Yeah, that you can put the thing together.*”

Figure 7.2 shows a screen shot of the worded comment entry box in the software used at Juliet’s school. It shows the comment options from a Science teacher’s comment data bank, some of which may be common to a faculty or which may be composed by the individual teacher. Teachers have the option to select a comment by clicking on the Add link. A sample worded comment is visible in the screen shot. As Juliet described, the report comment at this school consists of a small number of dot points that describe strategies for improvement for the student.

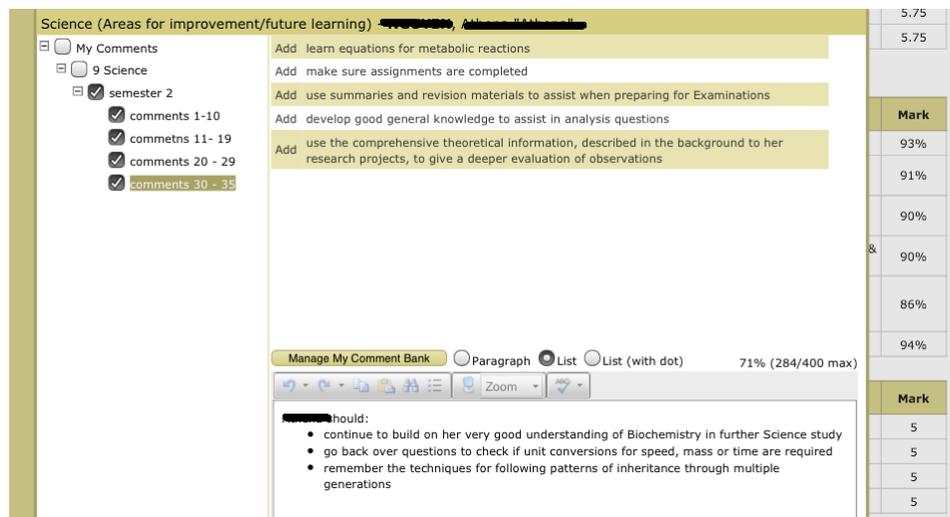


Figure 7-2 Screenshot of Comment Entry screen Year 10 Science

Juliet describes writing in passive voice as detached; *“Immediately there is a removal of any kind of life really.”* The school guidelines specify that comments must address areas for improvement in student work, which limits the character of what can be communicated in the report. Juliet said, *“We don’t. We can’t. So I do my reports from a data bank.”* In contrast, being able to commentate on the personal strengths of students is really valued by Juliet: *“and I thought finally we write something intelligent that isn’t about a piece of work.”*

The episodes of report writing bring the frustrations and vulnerabilities of each teacher into the spotlight. Juliet characterises the agitation of staff, at report writing time with a number of phrases: *“Stress from being criticised”, “very irate staff”, “everyone’s nerves are really going”* and *“there is a confusion. a total confusion.”* Hargreaves (1980) noted that ‘fundamental competence anxiety’ influences teacher decisions, and it may be that this is the source of strong emotions that are part of two scenarios raised by Juliet, that are specifically associated with the particular school. One is the teachers’ response to a student management policy and the other is associated with the report proof-reading process.

At Juliet’s school, a Submission of Work policy is in place. Following this policy is a professional obligation, yet few teachers follow it consistently. This recalcitrance is associated with a disbelief in the usefulness of the policy and specifically that it takes away the individual teachers’ choice to be lenient with particular students and negotiate deadlines. O’Connor proposed that attitudes, professional beliefs and emotions shape whether teachers follow or resist official culture (2008) and official directives. Juliet said, *“I’ve never used the submission of work because it is too much work to do it. There’s too much. I don’t have time.”* And *“my sense with that submission of work procedure is that you end up screwed as the teacher all of the time. You end up having to do more work yourself, um, and I always get the sense, that you are being kind of judged.”* A fear of being judged is at the heart of competence anxiety.

There is a long term impact on professional relationships between staff members over trivial corrections being returned to report authors; there is a shame attached to making errors or being seen to write poorly. Juliet said, *“I don’t understand why someone that’s a coordinator can tell me what a semicolon is used for”*. This response is related to resentment of power structures within the teaching faculty. For most of the

year, teachers work independently within the private environment of the classroom, hence relationships of power are rarely obvious.

The narrative account of one teacher's reporting experiences allow for a close examination of the impact of beliefs, and context on the experience and practices of report writing. Juliet gave evidence that personal experiences, even back to their primary school years will shape the teachers' beliefs and reporting practice. This is seen in the way she envisions the purpose of the reports and how she assesses students relative to an ambiguous and variable ideal; the way she collects evidence of student performance while being aware of student behaviours and what they say about the students' social and emotional development and role in the community of the classroom. Juliet's report writing experiences are constrained by the use of computer generated reports, the imposition of school policies and her recognition of the vulnerabilities of both students and herself in the process.

Global Findings about Categories of Information and Report Comment Writing using Thematic Network Diagrams

Thematic analysis of transcript codes and alternative strategies for grouping themes were considered in order to further explore global themes. ATLAS.ti allowed for the exploration of relationships between themes and formation of clusters of themes. Figure 7.6 shows the interface that allowed for this approach to thematic network analysis (Attride-Stirling, 2001). Three clusters of themes were investigated leading to organising themes, which were then simplified into global themes. The three initial theme clusters were: (a) conduct of the Process Tracing task, (b) teacher Professional Knowledge, and (c) the relationship between teacher and student.

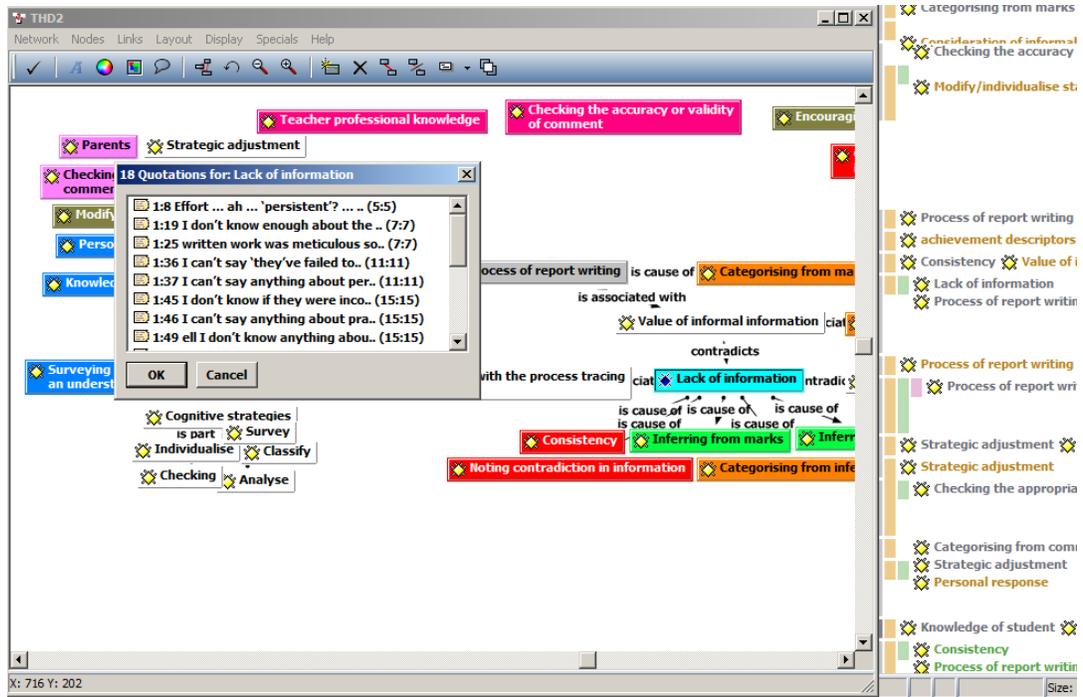


Figure 7-3 Screen Shot of the ATLAS.ti Network Box, used to group Themes into Organising Themes

One cluster of themes related to the Process Tracing task and the value of informal information. Respondents experienced frustration with the Process Tracing task due to the lack of valued information, with Respondent 3 describing the task as “*completely alien to the reality of me teaching those students.*” The lack of information had three effects: (i) Respondents declared the lack of information was artificial with Respondent 3 noting that in a real situation, knowledge of students is not confined to an individual teacher, “*knowledge is held within faculties or year level teams. We would still talk about these students*”; (ii) Respondents sought information in order to complete the task, using what information they had to infer, and seek out patterns or other characteristics. For example, Respondent 3 felt that “*less than 40% demonstrates that they either cannot settle in to class, they choose not to concentrate, they choose to be disruptive or they chose to do no work*”; (iii) The provision of informal information does not compensate for the absence of relationship with students, with Respondent 2 saying “*um ... I don’t know ... I don’t know anything about the way they behave in class*”. The organising themes of this cluster are that in a real setting information is not restricted and in the absence of salient information, there are professional resources and strategies to access information.

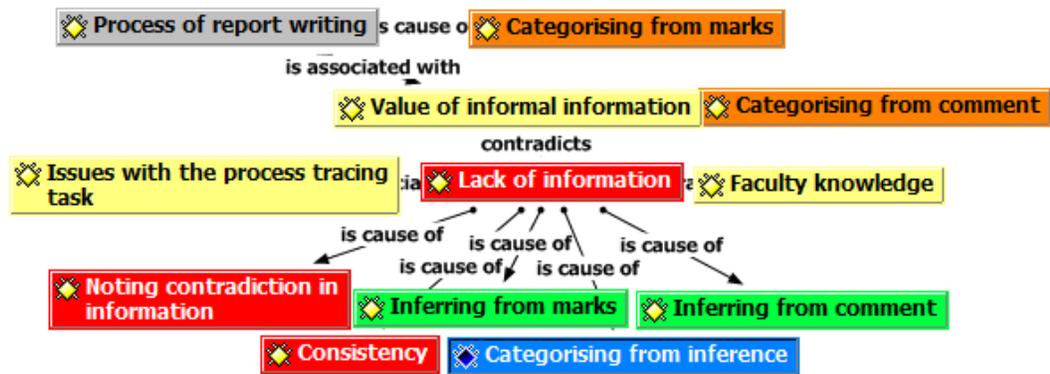


Figure 7-4 Cluster Exploring Importance of Information.

Another cluster of themes relates to what is meant by teacher professional knowledge. The process of report writing is one of many professional tasks performed by the teacher across the semester. It includes multiple judgements, as do all of the tasks of managing students and preparing learning experiences according to the curriculum. Knowledge of students was noted as an aspect of the knowledge base for teaching by most of the models outlined in Chapter 2: knowledge of students as learners and as people, knowledge of the standard of their work, knowledge of students as individuals and also as participants in a classroom group. It is specifically the understanding of the individual learning journey that allows the teacher to modify courses, assessment and reports. Respondent 4 commented, “We comment on the exam but you need to say something about the trip of the student. Do they progress or do they digress?” The teachers’ professional knowledge encompasses an understanding of what the assessment addresses, what is important, what is meant by consistency for the individual, what standards indicate performance at above or below standard, what marks mean in order to categorise within the specific context. Some of the points raised by respondents were: “I would say that again the last marks that come in tend to be the ones that go for discussion and conclusion” and “If I know they have problems with writing in the practical reports I will make sure to include that when writing comments”; Professional knowledge allows the teacher to assess what is appropriate, what is accurate what is valid. Respondent 4 emphasised the relationship between professional knowledge and judgement: “There are criterion at that year level that will allow me to say she is A+ student because she has the concepts specified for that year level.” The organising themes of this cluster are that teacher professional knowledge encompasses many aspects of teacher knowledge required to perform in the role of

teacher, and many aspects of teacher knowledge come to play in the process of report writing.

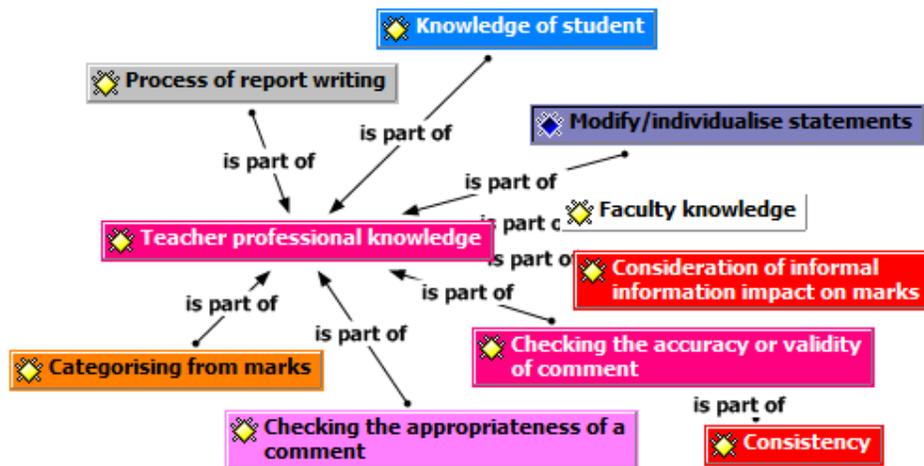


Figure 7-5 Cluster Exploring Importance of Professional Knowledge

A third cluster of themes focussed around the relationship between teacher and student. The person in the role of the teacher will be a participant in the relationship with students and therefore will have a personal experience a personal response to the student Respondent 3 described his reasoning for editing out a comment by saying he would raise that kind of information in a parent-teacher interview: *“It is a more personal. I’ve got a face and ... yeah ...my body language and facial expressions can convey more sympathy more empathy than the words on a page”*. Knowing students is an aspect of professional knowledge and it is expected and valued by the parents. Respondent 2 commented *“If the parents don’t respect it. They’re not going to actually give you anything ... it’s unlikely you’re going to get useful feedback or useful response from that student.”*

Knowledge of students allows the teacher to engage with the student in many meaningful ways leading to improved learning and reporting. Juliet was explicit in describing how her evidence gathering allowed her to consult with students to elicit improved performance. She said *“So then I’ll see a pattern and I’ll come in on that. Let’s think of a way to actually fix this problem”*. Respondent 2 notes, *“even when you know the students, you have to be very careful about what you say”*. Knowing students allows the teacher to make strategic adjustment or be lenient when it comes to assessing, grading and reporting. This leads to improved validity of the reports. As

Respondent 4 commented, “I’ve taught her in Year 7. I’ve taught her in Year 9. I know.” and “You can practically observe the students and you know what they can do.”

A lack of information about the student impedes knowing the student and writing a valid report. As Respondent 3 said “it’s not easy to do this when you don’t know the students.” It reduces the opportunity for the teacher to form a personal response and to access the additional range of cognitive strategies for making judgements and improving validity of the reports. The organising theme of this cluster is that relationship between the person in the role of teacher and the people in the role of student, within the learning context that allows for the meaningful and valid performance of the report writing task, as it is relationship that provides access to the range of formal and informal information and therefore the range of cognitive strategies, leading to valuable professional judgements.

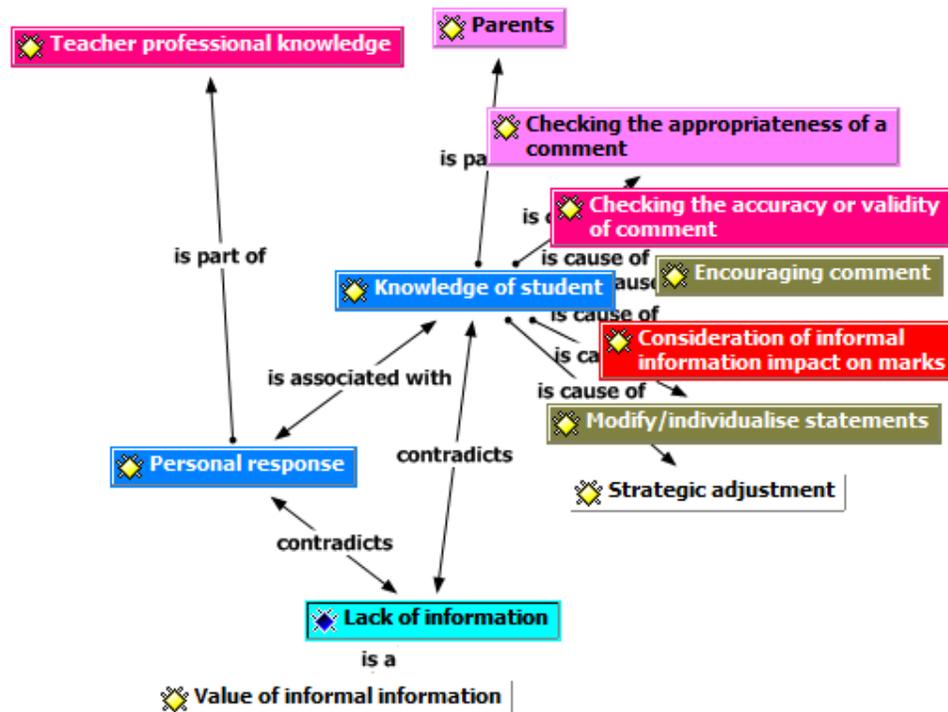


Figure 7-6 Cluster Exploring Importance of Knowledge of Student

In attempting to delve into the global themes in the task the organising themes were deduced by looking for the common assertion about report writing in each group (Attride-Stirling, 2001). Table 7.1 shows how the global themes were drawn from the organising themes.

Table 7-1 Approach to Refining Global Themes

<i>Organising themes</i>	<i>Global themes</i>
<ul style="list-style-type: none"> <i>In the absence of salient information, there are professional resources and strategies to access information</i> <i>Teacher professional knowledge encompasses many aspects of teacher knowledge required to perform in the role of teacher</i> <i>Many aspects of teacher knowledge come to play in the process of report writing.</i> 	<i>Report writing process will defy simplification to cognitive strategies or elements of knowledge.</i>
<ul style="list-style-type: none"> <i>In a real setting informal information is not restricted</i> <i>Relationship between the person in the role of teacher and the people in the role of student, within the learning context, allows the teacher to know the students and therefore allows for the meaningful and valid performance of the report writing task</i> <i>It is relationship that provides access to the range of information sources about students and access to a broad range of cognitive strategies leading to valuable professional judgements.</i> 	<i>Report writing process is facilitated by professional knowledge, relationships and setting.</i>

The first global theme emerged by considering what each organising theme had to say about the research objective for the Process Tracing task. The objective sought to find out about the factors which contribute to decision making during report writing. The design sought to compare the information sets of the hypothetical students by restricting the amount of information and the kinds of information about students. The respondents engaged with the information analysing and inferring from limited facts to complete the report, accessing a repertoire of previous experiences of other students to make inferences about what the information meant. The task was related across time and context to other experiences and individuals, engaging deeply with the respondent and their personal professional experiences. More than simple cognitive strategies contributed to decision making in composing these reports; there was evidence of knowledge of many different kinds of professional knowledge. Hence, the report

writing process will defy simplification to cognitive strategies or elements of knowledge.

The second global theme was drawn from the key words in each of the organising themes. The first organising theme points to setting and the second and third themes point to the role of relationship in knowing students. Each theme also implies movement, association or process. Analysis of the Process Tracing task in Chapters 5, 6 and 7 also point to the three components that direct the report writing process: relationships between teacher and students over the learning journey, professional knowledge and aspects of the setting or context.

Additional Discussion of Research Questions

Research Question 3a: What other organisational factors (other than state reporting mandates) shape reporting?

In the state of Victoria, teachers are employed in Government, independent or church affiliated schools hence there are a range of context factors that shape the reporting process that are directly related to the school context. The first difference is that independent schools are obliged to follow the Federal Government initiative for Plain English reporting with an A to E or equivalent ranking for achievement, but Catholic and government schools are required to provide the Student Report Card. Beyond the reporting mandates other differences include: the ways that student achievement are described or presented, the policy documents that influence reporting, other policies or expectations, the approach to proof-reading and attitudes to student achievement or expectations of performance that are part of the school climate. The way that report writing software and comment databases are deployed will also vary with schools. There are departmental factors that will also vary between schools.

Schools limit report comments by specifying tone, format and word limits. In some schools a formal style guide for reports may be in place. Schools also enforce expectations about report writing through a system of proof-reading. Where peer review of reports occurs there is some degree of animosity as a result. This implicit criticism of peers threatens the sense of professionalism of the teacher and erodes working relationships in the short and long term. The aversion to criticism led, in 2009, in my school, to enforcing common faculty databases in order to minimise typographical

errors and subjective comments. Many staff resisted this policy and it was not subsequently enforced although some teachers still use the common databases.

In some schools there may be a strong emphasis on competitive performance hence standardizing or scaling rather than standards assessment may occur to ensure not too many students receive a very high grade. In those cases, teachers must provide positive and encouraging feedback to soften a disappointing grade or provide evidence to explain a low grade despite a relatively high score. Alternately, in some schools there may be a reticence to give very poor marks or comments in the absence of evidence of the school actively working to prevent poor performance through remediation or support strategies, such as sending home 'At Risk' (*of failure*) letters.

Achievement descriptors are used to describe not only performance against standards, but performance on summative assessment, and work habits such as attitude and behaviour. The kinds of academic performance and behaviour that are considered to be 'good' or 'excellent' or 'poor' varies with individual teachers but it also appears to be influenced by the expectations of the school. In addition, achievement descriptors are variable depending on the student and their circumstances, as pointed out by Respondent 3. Descriptors need to be consistent within a school in order to make comparisons across the cohort and yet, as described by Juliet, individual teachers may hold differing beliefs about the meaning of descriptors even relating to non-academic measures such as effort. Also the assessment tasks reported on must be consistent across a year level in order to fairly make cohort decisions such as acceleration. There are policies in place within schools that give direction for reporting on those students who are not assessed identically with the rest of the class group. Some students on individualised learning plans do not receive reports with progression points. Some students cannot be fairly assessed due to extended absences. Respondent 3 described the reports for students who did not have exceptional circumstances as being more 'automatic'.

The way that report writing software and comment databases are deployed will also vary with schools. In 2009, some schools were still transitioning to using reporting software that included comment databases. All school using the Student Report Card needed to update software to allow for a database that retained progression point data over a number of semesters and allowed for the progression point graphic to be

published on the report. Schools limit comments by their use of particular software and formatting of report page elements and simple characteristics such as font. One significant difference in the formatting of reports relates to the presence or absence of a comment block describing Areas of Achievement. In my school, the description of achievements was replaced by a list of assessment items and a percentage score for each, although the Areas for Improvement comment has been retained. Some schools provide comments in a paragraph and some allow for listing of dot points. Some schools describe achievement only with the Progression Point graphic which indicates relative progress against the standards. Some schools combine Areas for Achievement and Areas for Improvement into a single comment block. There would be advantages and disadvantages to each of these approaches and many factors would shape the policy used in each school, including leadership preferences and parent opinions.

Respondent 3 indicated that knowledge of students and assessment is held within faculty groups. The degree to which teachers negotiate assessment and learning programs and therefore reporting would usually be decided within teams teaching at each year level, although in some schools, teachers may work largely independently and have minimal need to negotiate with other teachers. Some teachers may favour particular kinds of assessment or aspects of assessment and this may shape the way they approach report comments. In addition, some faculty groups may work with common databases or largely similar comments and some teachers may strongly reject a common approach and write reports individually. Respondent 3 described the use of common comments as eradicating the personality of the teacher.

Research Question 4a: What other factors influence teachers' thinking during the report writing process?

Organisational factors shape the reporting process but the internal contextual characteristics such as beliefs and attitudes that the teacher holds, profoundly influence the reporting process. The variations in approach to the task, responses to marks and formal pieces of information all point to the importance of individual difference in beliefs that arise from the personal professional and other experiences of the teacher. Amongst relevant beliefs are those relating to assessment, reporting and attitudes to parents.

The diverse approaches to the Process Tracing task between the four respondents pointed to an even greater diversity in approaches within the wider community of teachers. This diversity is attributable in part to the aspects of school context described above. Yet even within a single school and within a faculty, diversity will occur due to the personal professional knowledge of the teachers. In addition to the factors described above, the teacher's beliefs about what should be reported, what should be passed on to the parents, what is appropriate and how reports should be worded, shape the reporting decisions. The beliefs may be influenced by the teachers experience as a student or by their experiences of writing reports in the past that had either positive or negative repercussions.

As the teacher establishes at least some degree of relationship with students over an extended period of time, the association may add a possessive characteristic to the relationship. This association leads to the complex emotions felt by the teacher about the student performance. The transcripts showed evidence of teachers experiencing pride, sympathy, empathy and defensiveness. These emotions will influence interpretations given to student performance on formal tasks; evidence of this in the transcripts include Respondent 3's belief that student understanding is greater than is demonstrated on assessments or Respondent 4 describing a student's poor performance as due to having a bad day. Another example is Respondent 3's belief that poor behaviour and poor performance are students' choice and hence the degree of sympathy regarding a poor report is decreased. Also Juliet's intense aversion to negative commentary about student effort on the chance that the student performance was actually the best they could do.

The report decisions may also be shaped by what the teacher feels confident to write or by what they feel they have evidence of. Both Juliet and Respondent 4 noted that they wanted the report to include the elements she would want to know about, as a parent. The questionnaire indicated that teachers believe parents value information about the marks that their child obtained on formal assessment, but as teachers value the student's efforts over their academic performance, this must also feature in reports.

Teachers seek to be fair to the student and others in the cohort in reporting hence, summative assessment marks must be reported truthfully, and there was evidence in this study that teachers would not misrepresent poor marks in comments. In seeking to be

fair, the tone of the report must be phrased to avoid excessive negativity and still encourage the student. Juliet noted the importance of finding the positive and recognising the personal investment made by the student in the production of their work. In the Process Tracing task this was seen where higher ranked comments were chosen for skill and effort to balance the lower rank for grades. Fair reflection of performance must be balanced with fair acknowledgement of student efforts; this is the difficult balance that must be achieved in both the straightforward and more difficult reports.

The teachers' professional identity is made vulnerable through the reporting process. They wish to appear professional and authoritative but may not want to seem arrogant or condescending, as was the case with Respondent 3. A teacher may feel their professional identity is threatened through proof reading and concern about how the comments will be received contributes to the difficulty of the writing task, as indicated by the narrative. Overall, the report writing decisions may be shaped by what the teacher believes is ethical or by a wish to be a 'good teacher' (Salloum & Abd-El-Khalik, 2010) either through having the student achieve well, or by showing empathy, encouragement or demanding higher effort.

Research Question 4b: How does informal knowledge of students and their learning contribute to the report comment writing process?

A purpose of the Process tracing task was to establish the value of informal information in producing written reports. Bell and Cowie (1997) reported that accumulated information about students and intuition contribute to preparing report comments. The Process Tracing task established that the informal information makes a contribution to the composition of reports, but it has not yet been specified as to *how* the informal information makes a difference to the quality of reporting.

As previously noted in response to Research Question 3a, it is possible to compose a student report comment with access only to student scores and an appropriate database. It has also been noted that the value of the comments to the student and their parents can be measured by the validity of the report comment as described by Brookhart's Continuum of validity in grading (1993). It was established in Chapter 6 that the provision of additional information to teachers allows them to access additional

cognitive strategies such as Checking the validity of the grade, Considering the impact of additional or external factors such as pastoral problems and Individualising or modifying the comments made. Using these cognitive strategies allows the teacher to access the third levels of the Continuum of validity in grading, Values Implication, ensuring the comments are fair and accurate.

Informal knowledge of students comes from interaction between the teacher and students in a classroom space over an extended period. As noted in Chapter 4, there is informal information that accompanies formal summative assessment, but informal information also comes from formative assessment and observation of interaction, questioning, effort and behaviour. Since effort and behaviour must be formally reported on, these observations explicitly contributed to reports, but they also weigh on grading and ranking decisions that are Contingency level decisions as described in Chapter 5. Through having interacted with the student in marking the assessment task, the teacher will know what information about learning is most important and should be communicated. Through relationship with the student in the learning setting, the teacher will know the students and know whether encouragement or another strategy is warranted. Through opportunities for interaction with the parents, the teacher will have insights as to the appropriateness of the comments. As a consequence of knowing the student, the teacher is able to access additional cognitive strategies such as Checking for Appropriateness, giving Encouraging Comments and Considering Parents. These cognitive strategies allow the teacher to access the highest level of the Continuum of validity in grading, Social Consequence, ensuring the comments have the greatest validity.

Access to informal information complements professional knowledge and allows teachers to make judgments utilising a range of cognitive strategies on top of the Procedural level ranking from marks. Personal professional experiences allow teachers to delve deeply into the meaning of student information and interaction in the classroom, making meaning and making inferences, leading to reports that are as meaningful and valid as possible – both accurate as well as encouraging and useful. When information provided in a report is more useful to all of the stakeholders it potentially improves learning and learning outcomes and important strategic decisions about courses and career pathways.

Summary

Five practicing teachers contributed to the commentary on report writing described in Chapter 7. Their opinions and comments led to two summary statements described as global themes that draw on the analysis of data presented in chapters 4, 5, 6 and 7. The global themes are: that the report writing process will defy simplification to cognitive strategies or elements of knowledge; and that report writing process is facilitated by professional knowledge, relationships and setting.

The five teachers gave evidence of a range of contextual factors that help to shape the reporting process. This helped to finalise the evidence for Research question 3a. Amongst the relevant factors were descriptions of: the ways that student achievement are described or presented, the policy documents that influence reporting, other policies or expectations, the report writing software used, the policy on comment databases, the approach to proof-reading and attitudes to student achievement or expectations of performance that are part of the school climate.

Additional factors that influence teachers' thinking during the report writing process were collated in order to address Research question 4a. The comments made in the teacher narrative highlight most profoundly the importance of teachers' personal beliefs in shaping professional practices involved in report writing. The variations in approach to the task, responses to marks and formal pieces of information, what is meant by being fair, definitions of what is a good teacher and attitudes to parents are all evidence of beliefs shaping practice. The relationship between students and teacher over an extended period of time is the basis of an emotional component to the reporting process. Research question 4b was considered specifically through the Process tracing task, however, there was evidence from all three phases of the study of teachers routinely collecting evidence and of teachers holding informal knowledge of student performance that influences their decision making throughout the cycle of learning and reporting. Therefore, informal knowledge of students and their learning does contribute to the report comment writing process by ensuring that grades and comments given are valid. This provides evidence to answer Research question 4b.

Chapter 8. Implications of the study

Overview

The purpose of investigating the phenomenon of report writing was to produce an objective description which has been investigated in the particular circumstances of place and time that were found in the State of Victoria during the implementation of the Victorian Essential Learning Standards and the Student Report Card. The value of qualitative case study research is in the ability to produce a general description from a particular description, and present the general description in a form that can be transferable or at least useful in other contexts that may be similar or quite different (Ball, 2000; Lesh, Lovitt & Kelly, 2000). There are two parts to this chapter. In Part A, a general description of report writing is presented using the perspectives of Feldman's Teaching as a way of being as a framework to describe Wise Practice. In Part B the key findings beyond the general description are summarised and reflections on methodology, the value of the research and possible future research directions are described.

Part A - General Description of Report Writing from the Perspective of Teaching as a Way of Being.

Previous chapters have recounted the findings generated in this study. To bring these findings together into a general description, the four overarching questions of the study are reviewed, including the research questions that were the focus of investigation. The four overarching questions were: What is the professional knowledge base required to perform the tasks in semester report writing? What decision making and reasoning occurs during the report comment writing process? What contextual factors influence the process of reporting? How does a teacher in Victoria in 2008 - 2012 experience the process of composing reports using the Student Report Card format? These questions arose from Feldman's model of the perspectives that contribute to the Teaching as a way of being perspective and each is answered with a description. The descriptions are not discrete; each overlaps and interacts with the others. Teaching as a way of being as an amalgam of the perspectives is holistic and dynamic. The professional tasks of report writing are not just the product of the context or knowledge and decisions; it is 'being' at the centre of a maelstrom of interaction and repercussion,

response and projection over time and place. Teaching as a way of being rings true to the lived experience of the teacher.

One purpose in presenting a general description in conclusion to a case study is to reflect on “the relative typicality or atypicality” of what has emerged in the study (Erickson, 2012, p. 1464). No claim can be made that the behaviours, beliefs and responses described are typical even within the parameters defined by the case, which is the state of Victoria during 2008 – 2012. To improve the transferability of the findings the general description is presented from the perspective of a *wise* teacher and as *Wise Practice*. *Wise Practice* in report writing will not occur for every teacher with respect to every student.

Wise Practice is enacted through Wisdom of practice, Deliberative wisdom and Wisdom-in-practice. Teaching as a way-of-being is existential in character and is the integration of teacher knowledge, reflective practice and practical reasoning, teacher beliefs, socio-cultural aspects of teaching and learning (Feldman, 2002). Teaching as a way of being captures the lived experience of an individual enacting the teaching role in a teaching setting.

Feldman’s (2002) article was used as an exemplar for analysing an education phenomenon using the teaching as a way-of-being perspective. In that analysis the differences between two teachers’ adoption of an innovative physics program was compared through the four perspectives. For this study from the teacher knowledge perspective, the description will focus on the repertoire of teacher knowledge relevant to the tasks of reporting. From the teacher reasoning perspective, the description will focus on what deliberations and reflections occur during the process and how prior experiences shape them. From the sociocultural perspective, the description will focus on how beliefs, attitudes and external constraints shape the process. From the teaching as a way of being perspective, the description will concentrate on the interrelated character of the process and how it is the immersion of the teacher as a whole person in the process that leads to the most meaningful and valid reports. The findings of each phase of this study are summarised into a graphic in order to make the descriptions more succinct.

What is the professional knowledge base required to perform the tasks in semester report writing?

The process of reporting relies on having access to the marks achieved by the student during a semester, but more information improves the validity of reports. The study has indicated that the repertoire of teacher knowledge relevant to the tasks of reporting extends beyond achievement indicators and classroom performance to knowledge of curriculum, detailed knowledge of assessment tasks and knowledge of students over time. These kinds of knowledge constitute the *wisdom of practice*.

Research Question 1a asked how formal records of student achievement are retained for future reference. The survey found which teachers use teachers' diaries, loose sheets and computer software such as data base and spread sheet packages to manage their records, often using more than one strategy. Research Question 1b asked what informal information about students and their learning is available from formal assessment and collected over the reporting cycle. The majority of respondents indicated that they often or always kept additional records about student welfare, submission and absence records as well as informal aspects of student performance on formal assessment. Amongst the things noted were areas of strengths and weaknesses, outstanding responses, potential issues with the task including timing, absences and special consideration as well as aspects of the topic that need revision. Research Question 1c asked how teachers provide feedback to students and whether feedback is retained as evidence of learning. The survey found that teachers use a variety of techniques to provide feedback to students including class discussion, individual discussion, exemplars, rubrics and written comment. The choice is determined by time, the task and what is considered most valuable for the students. Over 85% of respondents indicated that they kept copies of the feedback to students, at least some of the time.

A summary of the findings about relevant teacher knowledge is shown in Figure 8.1.

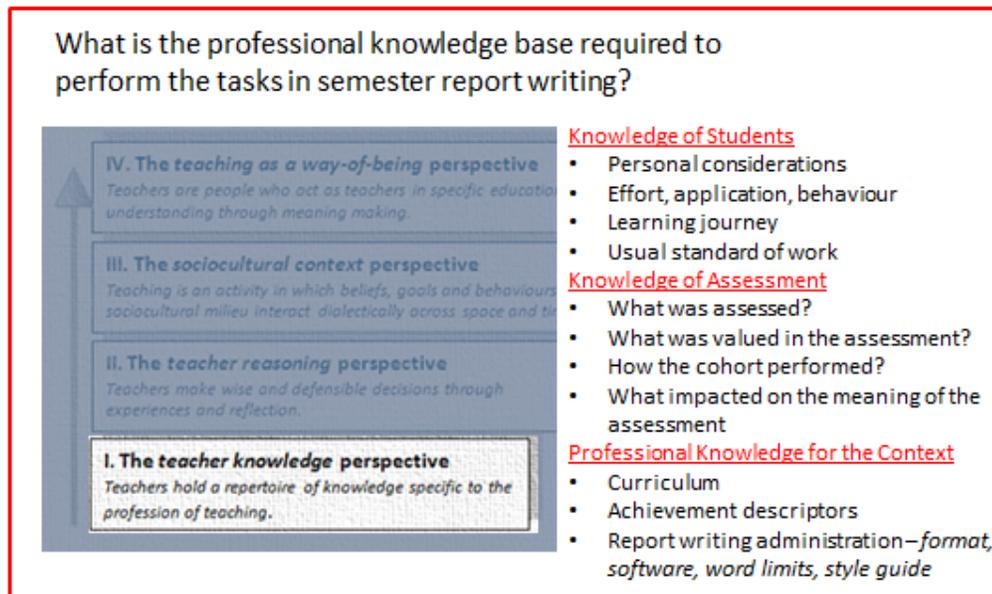


Figure 8-1 Aspects of the Knowledge Base for Report Writing

In order to write reports about student learning the wise teacher would have a great deal of knowledge about their students. The teacher would know about their students' performance and their learning journey over the semester. They need to know about their usual standard of work, whether there was improvement and whether there were any specific factors that impacted on performance over the semester. The teacher would intuitively know about the behaviour, attitude and effort of the student. They would know about homework completion, work submission, absences, tardiness and how students work with other students, whether or not they actively record notes of this in some way. This knowledge comes from being interested in the students and attentive to information about their lives beyond the classroom, being in the learning journey with students, and assessing their work.

In order to write reports about student learning the wise teacher would know about the assessment that occurred. The teacher would know what was assessed and would follow the decisions negotiated within the faculty as to what is reported on. They would value particular aspects of the task as well as the final score and they would know what student performance in the task showed about learning. The teacher would hold memories about significant individual performances and remember how the cohort performed on the task over all. The teacher would know if circumstances impacted on the performance of individuals or the cohort on any of the formally assessed tasks; this

might be simple things like whether the class had less time on the task or whether a cheat sheet was permitted. This knowledge comes from knowing about assessment in theory and through practical experience of assessing students in science. It also comes from knowing students and being part of the learning journey over the semester.

In order to write reports about student learning the teacher must have professional knowledge about subject content, curriculum and the particular requirements of the school. The teacher would know about the subject content and the curriculum and the way it is implemented through courses and work programmes, because it informs pedagogy. In the state of Victoria they would know how to access the descriptors for Progression Points. The teacher probably doesn't have to know about government reporting mandates because the curriculum leadership of the school would have made decisions about how those things are implemented. The teacher would have to know about the procedures and directives that allow writing of reports in the individual school. These may include things such as timelines for completing tasks, how the software is used, what protocols are followed for grammar and layout of information. The teacher would know sufficient mathematics to convert and combine marks to percentages, and to know how grades and ranking fit with the range of marks. They would know the protocols for reporting exceptions, absences, modifications and other special considerations. The teacher would know how to write and edit with correct spelling and grammar and with good expression. This knowledge comes from seeking out and learning the information or by keeping ready access to it in a physical or digital form.

In order to write reports about student learning the teacher must know their students as individuals and as learners, know about pedagogy and assessment. They should also have content knowledge, pedagogical content knowledge, knowledge of curriculum and knowledge of the requirements of reporting in the particular educational context to allow for proper conduct of the teaching, learning and assessing that happens along the learning journey. It is also important that a wise teacher would have knowledge of self and milieu (Elbaz, 1983). These aspects of knowledge would help the teacher to be aware of the attitudes and beliefs that shape or bias their decisions and to be conscious of the external forces that operate on a wider political and social platform. All of these elements were described by Shulman (1987) as the Knowledge base for teaching. Knowledge of curriculum, pedagogy, procedures and assessment, combined with formal

and informal data about students kept in the memory or kept in records; make up the knowledge base for report writing. This is the wisdom of practice. Once the necessary categories of knowledge are accrued, the process of compiling report comments relies more on judgements about what is valued.

What decision making occurs during the report comment writing process?

The sources of knowledge described in the teacher knowledge perspective must be combined, filtered and weighed up to produce the multiple judgements or deliberative wisdom that result in the completion of a report including composition of the written comments. The knowledge of curriculum descriptors, Progression Points and student achievement allows for the allocation of Progression Points. The knowledge of student interaction in the learning environment results in decisions about effort, organisation and behaviour ratings. Knowledge of student performance in formative and summative assessment tasks, together with the accumulated informal information contributes to the multiple decisions that go into composing comments on the basis of what has been assessed and what elements are considered important to communicate.

Research Question 2a sought to find out if formal grades alone provide sufficient information for teachers to compose valid reports. The Process Tracing task demonstrated that it was possible for an experienced teacher with no knowledge of a student beyond formal scores to compose a comment for a report card that conveyed information about student performance, particularly if supplied with an appropriate comment data base. It is difficult to establish the validity of the composed reports as they relate to hypothetical students; however, thorough analysis of the report comments showed that the validity of the written comments improved as more information was available about the student. Research Question 2b asked about the kinds of teacher thinking evident in the written report comments and verbalised commentary of report writing. Analysis of the process tracing task showed a range of cognitive strategies were used including Survey, Categorisation from marks and comments, Inference from marks and comments, Individualisation of comments, and Checking strategies to ensure the comments were valid and appropriate.

A summary of the findings about relevant teacher knowledge is shown in Figure 8.2.

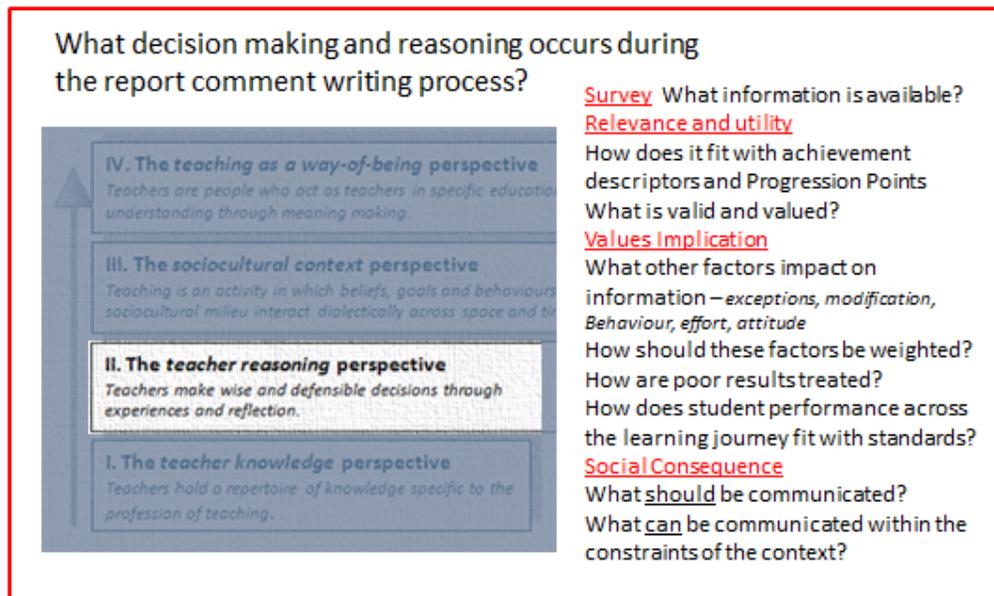


Figure 8-2 Aspects of the Decision Making for Report Writing

In order to write reports about student learning the teacher must know how to respond wisely to the information that is provided. Firstly, the teacher must survey what information about student performance is available and then assess the value of that information for the tasks in grading or reporting. The teacher would judge whether the information is consistent across tasks and whether it is consistent with their knowledge of the student and their expected level of performance. They would also bring into consideration any other informal knowledge they have about the student and their learning journey and judge the impact of those factors on performance.

The teacher must make a judgement about the appropriate allocation of grades if grading occurs. The wise teacher would consider formal marks and would be conscious of the influence that other information has on grading decisions. If they choose to consider informal achievement relevant parameters such as effort, behaviour, attitude or attendance, they would have an understanding of how the information impacts on the decision and whether there is equity in the application of that concession. They would follow personal codes or departmental protocols for dealing with borderline results and non-submission of tasks that subsequently receive zero marks. The wise teacher understands that this kind of decision is linked to the student and the circumstances and therefore it cannot be the product of rules alone if the grading is to be most valid. The

teacher would also be aware of the way that their past experiences impact on the decisions that they make.

The teacher who has to write report comments would consider all of this information, and in addition, would have clear insight as to what they wish the report to convey to parents about the student's learning journey. They would make choices in wording that accurately, validly and appropriately convey that information.

In order to write reports about student learning the teacher must know how to incorporate all of the elements of information available to them, and then weigh the value of the information in the light of the student's peculiar circumstances. The teacher would seek to do more than make decisions or judgements; they would be wise judgements that make the product of reporting impartial and valid. Deliberative wisdom would generate a report that would serve the learning in the classroom and represent the student fairly in the wider world.

What contextual factors influence the process of reporting?

The sociocultural perspective of teaching focuses on how internal and external constraints shape the teaching judgements process. While internal factors such as beliefs and attitudes are possibly tacit, external constraints are explicit. Knowing what is required by the wider social context and the institutional procedures, guidelines and constraints are part of the knowledge base required by teachers for report writing.

Research Question 3a sought evidence that the schools described by respondents to the questionnaire complied with the Victorian Government reporting mandates. The questionnaire indicated that most, although not all schools did follow the mandates for reporting. The way that the Student Report Card is presented varied, particularly with respect to the ways that achievement was represented. Achievement on specific tasks could be described through grades, scores or in written statements. Other organisational factors that shape reporting may be specific to a school, including styles guides, policies on managing modification and other exceptional reports. Specific reporting software may be used by schools to generate reports with the mandated elements, including the progress and work habits graphics.

Research Question 3b asked if teachers believe that they know their students or do they believe that they need to accrue evidence to justify reporting decisions? The questionnaire found most teachers had a moderate or strong association with both attitudes indicating that a teacher could know students well and still habitually collect evidence of learning achievement to assist in reporting, this refutes Sadler's assertion that teachers who believe they know students well, rely on their instincts to give grades (1989). Research Question 3c considered whether evidence collecting behaviours or other aspects of the teaching context were associated with a collaborative or a confrontational attitude to parents, particularly at face to face meetings. Analysis of the questionnaire data indicated that it was possible to hold both collaborative and confrontational attitudes to parent-teacher meetings. Less experienced teachers were found to be more likely to associate with a confrontational attitude to parent-teacher meetings and more experienced teachers tend to collect and retain more information about students. A more important conclusion was that the personal professional experiences of individual teachers accrued through professional practise shapes attitudes and beliefs more profoundly than teaching in a particular context.

A summary of the findings about aspects of the sociocultural context or the contextual constraints (Grant & Sleeter, 1985) that shape report writing is shown in Figure 8.3.

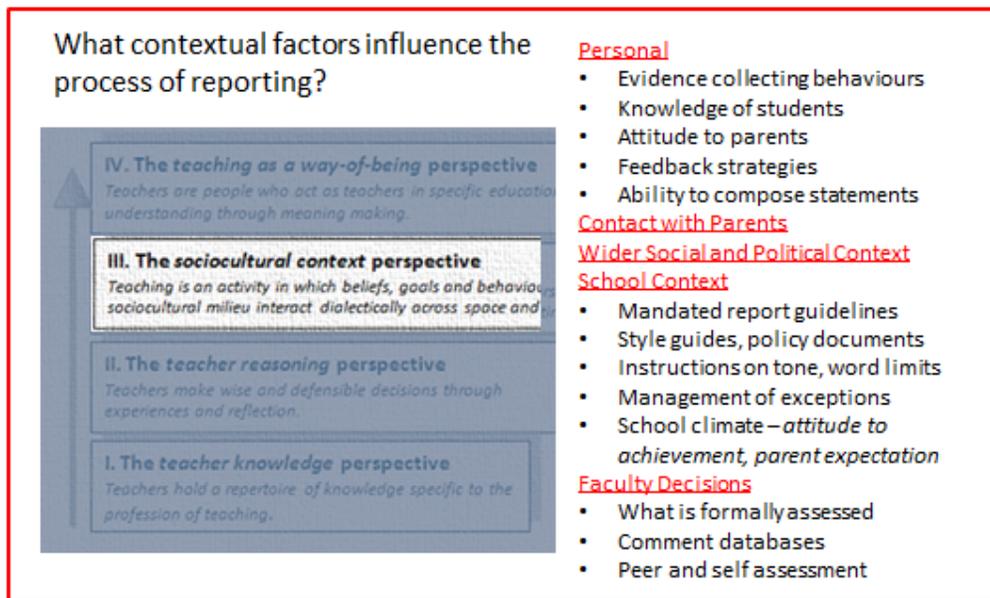


Figure 8-3 Aspects of the Sociocultural Context that Influence Report Writing

In order to write reports about student learning the teacher must be aware of the aspects of their personal biography that they bring to the classroom and to their relationships with students and the tasks of teaching. There are many possible attitudes about teaching, reporting, education and people that may influence reporting decision, such as: the purpose of science education, racial bias, beliefs about high achievers or extension programmes, the meaning of low marks, or beliefs about the nature of learning difficulties and provision of learning assistance. The wise teacher would be alert to the possible effect of these attitudes on their grading and reporting decisions.

In order to write reports about student learning the teacher would be conscious of how their attitudes to parents have been shaped by their interaction with specific parents in the past and how that leads to assumptions about the motives or intentions that parents hold towards them. The teacher would acknowledge that future interactions with parents will always be unique to a set of circumstances and be in relation to a particular person who is on a particular learning journey.

The teacher would know of and be influenced by the political character to debate about education in Australia and to the nature of societal attitudes to teachers and their work. Comber and Nixon (2009) describe Australian federal government education

policy as being dominated by a “human capital discourse” with strategic policy and funding based around national curriculum, national benchmarks and standards, and national testing which becomes public information. They write “It now seems impossible to discuss high-quality education without the insistence on reporting, standardised curriculum and assessment metrics” (2009, p.333) and they go on to describe the relentless attack by the media on teaching standards and the failures of public schooling. The original introduction of ‘plain language’ reports as part of the new Student Report Card was in response to a community sense, reiterated by the media and opportunistic politicians, that teachers were using jargon to obfuscate poor standards of literacy and numeracy amongst students, as a result of poor teaching. Yet, teachers would still acknowledge that a report, as a public document, should be able to be understood by people who are not part of the education sector.

In order to write reports about student learning the teacher must follow the prescriptions set down by the school administration and the negotiated decisions within the subject faculty. The institution controls the frequency of reports and other contact with parents, and deploys the software, style guides and timelines that control the process and the comments. The wise teacher will be alert to the less explicit institutional characteristics of the context of the school, such as: the meaning of achievement descriptors like good and excellent, the way that behaviour and effort rankings are applied, whether and how high stakes examinations contribute to grading, whether or not marks are scaled in line with a more competitive culture, whether policies such as streaming or acceleration are in place, and whether the school values other education pathways like vocational training.

In order to write reports about student learning the teacher must interact with the sociocultural context as it shapes deliberative wisdom. The characteristics and climate of the school as a unique institution would be the dominant factor shaping report writing, within the wider constraints of government policy and social attitudes. The teachers’ personal experiences, beliefs and attitudes provide internal constraints that are not overt. The wise teacher would be aware of the influence of internal and external factors on their decisions and judgements and they would work within those constraints to produce valid and valuable reports of student learning. While context, beliefs and attitudes shape the reporting judgements made, the teacher as a ‘whole person’ does not feature in the reporting process from the sociocultural perspective. When the teacher, a

sentient being is placed in interaction with the many factors shaping the phenomenon then there is Wisdom-in-practice.

How does a teacher in Victoria in 2008 - 2012 experience the process of composing reports using the Student Report Card format?

Report writing is a solitary task but it occurs within a web of human interactions. The narrative shows that report writing doesn't occur in isolation from the ongoing work of teaching students. Students are aware of the process occurring and it influences their behaviour both positively and negatively.

Research Question 4a asked how informal knowledge of students and their learning contribute to the report comment writing process. All artefacts in this study contributed to providing an answer to this question. It was clear through the questionnaire that there is an abundance of informal information available to a teacher over learning journey and through coming to know the students. In the Process Tracing task it was apparent that informal information improved the ease of writing reports and assisted in making more difficult decisions about ranking comments. It was also apparent that informal information lead to an improvement in the validity of the report comments. Research Question 4b asked about other factors that influence teachers' thinking during the report writing process. The personal engagement of the teacher with the students over the semester comes into play in the report as the culminating task of the semester. The teacher experiences the report writing process as a physical and emotional trial, wishing to balance a fair representation of the students' achievement with a positive and encouraging report commentary, in most cases. They also expose themselves to criticism in various ways, which is threatening to their professional identity.

A summary of the findings relevant to experiential aspects of report writing is shown in Figure 8.4.

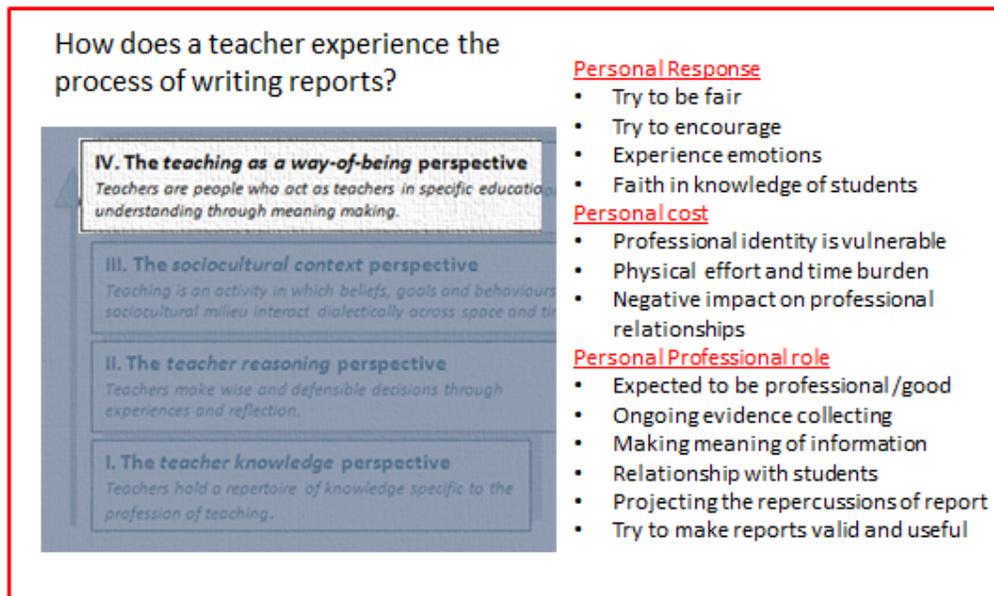


Figure 8-4 Aspects of the Lived Experience of the Teacher who Writes Reports

In order to write reports about student learning the teacher must be present in the classroom and in the report writing process as a whole person. The wise teacher would feel pride, frustration, disappointment and other emotions regardless of what they choose to communicate in the report. They must collect, record and collate information about students learning, both formally and informally and they would seek the professional knowledge that facilitates the process of report writing. The teacher would be purposeful about what they want to communicate on the basis of performance, evidence of learning and any additional intensions, such as encouragement.

In order to write reports about student learning the teacher must invest physically and emotionally and invest their private time in the process of report writing. They must believe in the veracity of their judgement of student learning in order to communicate that to others. They would collect written evidence to justify the judgements made if queried and they would be able to audit the decision strategy they followed when checking their judgements.

In order to write reports about student learning the teacher must complete the professional tasks expected of them in a way that shows them to be effective, attentive to individual students, caring, ethical, moral and a 'good' teacher. They expose their experience of professional identity to the scrutiny of others and therefore they are

vulnerable in three spheres: in their relationship with the students, in their status amongst peers and superiors, and in the view of parents and the wider community.

In order to write reports about student learning the wise teacher would be able to look beyond the classroom tasks and understand how the report will be received by the student and others. What is written must be informing, accurate, valid, useful and fair, to the student within their cohort. The caring teacher would value effort and improvement and would communicate that to the student and others. Marks do not communicate much about a student's learning journey, nor are mark alone a predictor of future achievement or success. The teacher who shares insights about the students' aptitudes, interests and talents can open up new options for a student. The teacher who only communicates a mark or grade can as a consequence cause the student to measure their value only through marks. If that mark is poor and other marks are poor it can build an immutable prospect of failure impacting on a person's potential for success in many aspects of life.

Feldman described teachers through the Way of being perspective as meaning-makers (2002). The wise teacher makes meaning of students' learning journeys and through effort, vulnerability, Wisdom of practice and Deliberative wisdom creates a product, made only of words and numbers. Those sentences in that document are a portal behind which the teacher has codified and represented effort, possibility, power, ethics, compassion, care, intellect, kindness, respect and wisdom.

Part B - Conclusions and Considerations

Summary of significant findings

The composite of information produced by the questionnaire and the transcripts from the interview and process tracing task, shows that Wise Practice leads to the preparation of meaningful and valid student reports. Thematic analysis of the transcripts from the process tracing task concluded that the report writing process will defy simplification to cognitive strategies or elements of knowledge, even if analysis produced some understanding of the cognitive strategies used to make ranking judgements. It also concluded that the report writing process is facilitated by professional knowledge, relationships and setting or context.

Wisdom-in-practice embraces the sociocultural perspectives and Way of being perspectives of teaching described by Feldman (1997). The sociocultural perspective makes it clear that the teacher knowledge and reflective knowledge is shaped by the contextual constraints, including: what is valued, what is emphasised, what instructions are in place. There are also individual factors such as beliefs, attitudes and experiences that shape the differing approaches to writing comments and ranking comments. Ultimately it is a person in the role of teacher, who constructs the multidimensional knowledge base that allows for and assesses student learning. In sharing the meaning that has been constructed over time, in relationship, in an educational setting increases the vulnerability of the person acting in the role of teacher hence teachers experience reporting as a time of physical, cognitive and emotional stress.

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Other significant findings of the research project are summarised outside of the structure of Teaching as a way of being. Although the findings of this study are not generalisable the points identified here as significant are findings that were definitive or are likely to be transferable more widely.

- The questionnaire showed that in the schools described by the respondents, multiple points of contact with parents occur over the semester. For this random sample of schools, the majority of schools meet and exceed the mandated reporting contact with parents over the semester cycle.
- Teachers must record formal marks and they do so in a variety of ways including the use of commercial teacher diaries, computer spreadsheets and on loose paper. The reasons for this are likely to be preference for managing information, expedience and handling of papers. The kinds of informal records kept by teachers relate to items of information, such as modification or first language status or family circumstances that may be referred to both for reporting and in other situations. Informal observations occur in classrooms during the conduct of lessons but they also accompany formal assessment. These observations can shape comment databases and directly contribute to reports.
- Feedback to students is provided in many different ways. Teachers value rubrics and most keep copies of them at least some of the time. Individual feedback is

regarded as beneficial to individual students but helpful insights come from class discussion and group feedback is more time efficient.

- Teachers value their knowledge of students and in reporting they value knowledge of student effort above other kinds of knowledge. They also value marks but indicate that they value informal records less than formal records, despite the evidence that they accrue informal evidence of student learning to supplement the formal marks. Teachers believe that parents' value marks above other indicators of student learning.
- Teachers, in general, believe that they know their students and they know about their standard of work and are able to recognise work that is above or below their usual standard of work. They collect evidence of student achievement for reporting, even though they hold knowledge about student learning. In general, teachers have a collaborative attitude to parent-teacher interactions but there is some evidence of confrontational attitudes as well. A stronger association with confrontational attitudes to parent-teacher meetings is associated with early career teachers who may feel more vulnerable and defensive.
- There are differences in the ways that teachers approach the report comment writing process. There is evidence of external and intrinsic factors that shape the differing approaches to writing comments and ranking comments. The cognitive strategies used in the reporting process include surveying information, categorising, inferring and analysing the data set for consistency or contradiction or lack of information. Individualising and modifying report comments assist in improving the relevance and utility of comments. Checking to ensure that statements are valid, accurate and appropriate occurs, anticipating the impact of the comment on the student, parents and others.

Knowledge of the student through ongoing interaction provides the teacher with the information to make wise and fair judgements in reports. Specific instruction on report writing provided for teachers by the Victorian Department of Education and Early Childhood Development reads:

“The challenge for teachers is to provide all the relevant detail about students’ progress and ensure that the information on the report is clear and concise. It

is important that the report is coherent and there are logical links between the achievement of the student, areas for improvement and actions the school and parents might take. It is also essential reports provide assessment information that is accurate and based on evidence from teachers' assessment records about judgements made against the VELs" (DEECD, 2006d, parag.8).

Full and accurate reporting as specified by the Victorian Department of Education and Early Childhood Development requires the accrual of evidence over an entire semester culminating in a carefully nuanced writing task. Clearly, reporting is not just an addendum to the semester.

Value of the research

When Fischer, Borowski and Tepner presented a review of the professional knowledge of science teachers, they noted that standards for professional knowledge of teachers really only concentrate on the three dimensions of professional knowledge known as Shulman's 'reduced model', that is Content knowledge, Pedagogical knowledge and Pedagogical content knowledge (2012, p. 439). This narrow academic focus on teachers' work may indicate why report writing has not featured in research up to this point. This study contributes to valuing a broader perspective of teacher knowledge as well as providing evidence of teacher knowledge in a particular case.

This study contributes to recognition of the complexity of teaching and therefore building the esteem of the profession in the wider community. The complexity of the interaction between teachers and students and the value of that interaction across time has been highlighted and affirmed as central to facilitating and reporting on student learning. Respondent 3, in the Process Tracing task, was remarkable in that he sought to humanise the hypothetical students in the dataset in order to be able to perform the task. This further highlights and celebrates the role of relationship in teaching.

It is important to associate the findings of this study with the work of Pijl (1992) who first highlighted the way that student feedback is provided physically to students but retained mentally by the teacher. Pijl (1992) indicated that the feedback teachers keep in their heads can be undermined, forgotten or subject to bias. Teachers should be made aware that when the feedback they provide is physically dispersed valuable evidence of

learning is lost. Adjusting the way that feedback is provided and keeping copies of it can lead to better records of student learning, in a form that holds its value.

Consideration of what constitutes salient evidence of learning from formal and informal assessment, in advance, may lead to more explicit and efficient collection of evidence for reporting and even grading in other education districts. Actively recognising the collection of informal evidence with formal assessment and through interacting in class will help to provide more evidence based assessments of work habits or attitude and behaviour records. This in turn will allow for the conscious application of this information to Contingency level grading decisions.

Converting intuitive or tacit professional practice into conscious professional knowledge and practice would improve teacher confidence for report writing and parent-teacher meetings. This may be especially helpful for early career teachers, who appear more vulnerable to criticism.

Schools should be made aware of the need to address report writing early in the semester when inducting early career teachers. They should encourage all teachers, especially faculty mentors to become aware of their preparation for reporting across the semester making it explicit to assist beginning teachers. It is important to challenge the persistent belief that reports come only from formal scores or marks.

The adjustment by schools of the Student Report Card elements, specifically removing statements describing areas of achievement has led to student reports that emphasise deficits in student learning performance. Given the need to maintain and improve student uptake of science courses, all steps should be taken to encourage and reward participation in science. Reports that deemphasise what has been achieved and take away the teacher's ability to encourage or acknowledge science learning fairly, cannot be recommended. Teachers may support the use of student reports that list grades rather than a report comment as a result of difficulties in composing reports or due to perceived attacks on their professional identity; However, if reporting is better understood and preparation is more systematic, there may be better support for statements of achievement leading to more informative more encouraging and fairer reports.

Methodological reflections

It is important to recognise that education phenomena such as report writing are human constructs within a particular sociocultural context (Lesh, Lovitt & Kelly, 2000).

Despite the fact that students are given a report card in some form in all education systems, the characteristics of reports are tied to the education system, the curriculum and the wider political culture. The specific description of the data gathered in this case fits with the individuals, each in a specific context, but it is hoped the general description holds value for other schools in the state of Victoria and in other education districts. The fidelity of the general description is tied to how well it captures the experience of report writing in this context; the description is truthful to the researcher's experience and indicators of internal consistency were described in the report.

The findings of the questionnaire were not generalisable as the number and distribution of participants cannot be regarded as representative of science teachers in the State of Victoria. The general characteristics of the student report card described in this study are tied to the State of Victoria in this a specific era of curriculum and reporting; the VELS is already being replaced by a new curriculum and reporting continues to evolve in every school.

This study chose to examine teacher attitudes by concentrating on attitudes to parent-teacher meetings, collecting evidence and knowing students. The decision to explore these attitudes was intuitive, given the absence of any literature on the field. The study did not investigate the breadth of beliefs that impact on reporting behaviours, nor did it explore the specific significance of contextual forces on beliefs and beliefs in action (Bryan, 2012). Given the constraints applied in schools, it is very likely that teachers suppress their authentic beliefs about what can be reported. The failure to survey for relevant beliefs and for the relationship between beliefs and context is a flaw in this study.

The Process Tracing task was useful insofar as it provided the opportunity to tap into the thinking of report writing while protecting the privacy of the respondents' actual students. Basing analysis on hypothetical students, meant there was no way to embed relationship in the task. Understanding relationship is pivotal to truly understanding the reporting process, as was made apparent through this study, hence this is also a significant flaw.

To improve the interpretation of the role of sociocultural context and the attitudes and beliefs of the individual respondents, participants in the process tracing task could have been interviewed on multiple occasions following the analysis of the transcript data to better understand the impact of sociocultural context on report writing experiences. Other qualitative methods for investigating report writing, including narrative approaches (Clandinin, 1992) may have led to a better understanding of the process. Having respondents discuss their actual student reports while ensuring the anonymity of students could also have been useful.

The multiple phase multi-method approach to data collection and data analysis in this study seemed appropriate for this poorly studied phenomenon. It allowed for the use a range of different techniques and artefacts to illuminate reporting as a largely tacit aspect of a teacher's professional repertoire. It also allowed for the triangulation of data to improve the reliability of the findings. Although there were few studies of report writing in the literature, this study built on models relevant to grading, especially Whitmer's Utility framework for marking judgements (1983) and Brookhart's Continuum of validity in grading (1993). The multiple step Phenomenological analysis approach described by Hycner (1985) provided the strategy for clarifying themes in the transcripts of the process tracing data. Attride-Stirling's (2001) Thematic network diagram approach showed the relationships between themes and allowed the diverse findings to be distilled into salient points. The multiphase approach, with each artefact maintaining focus on the experience of report writing but with a narrowing field of view, which is described in this study as a *parfocal character*, represents an innovation in approaches to qualitative analysis. This approach may be useful for other types of phenomenological research.

Feldman's composite of four perspectives of teaching in the Teaching as a way of being model offers a functional theoretical framework on which to construct a description of the experience of report writing. In the same way that individual tiles in a mosaic are discrete entities but are intrinsically part of a complete mosaic, the individual experiences of the small sample of teachers in both phases of the study, do not allow generalisation, but validly contribute to this exposition of teachers' experiences of report writing.

It was unfortunate that the findings of this study did not appear to highlight science specific characteristics of the reporting process beyond attention to the assessment and reporting of science skills, field work and practical reports. It may be that science specific characteristics are confined to the knowledge part of the process of reporting and the general process of report writing is common across subject areas.

Future research directions

Report writing is poorly understood but it is worthy of better investigation. Grading is inferior to report writing in terms of its ability to provide more valuable information to parents and students. Education authorities should adopt report writing in preference to grading; despite the difficulties in reporting, it is worthwhile. This is especially true given the potential to better prepare for reports, if report writing behaviours are turned from tacit activities to being part of the body of professional knowledge for teachers.

This study could be likened to one face of a coin. To really understand the significance of report writing, it is necessary to look at the other side of the phenomenon that is to investigate how reports are received. This study has used validity as a measure of a 'good' report, but the validity and value of the report must be considered through the eyes of the recipients. A study that investigated what reports mean to parents would provide very valuable information to schools and education authorities.

In order to build this understanding, there is a need to better explore teachers explicit and implicit beliefs about reporting practices. For example, epistemological attitudes to science may shape reporting practices; it could be speculated that a highly positivist view may value content acquisition and test performance while a constructivist view may value the progressive skill acquisition and emphasise encouragement. The ways in which epistemological and other attitudes, influence grading and reporting could be further investigated. Continued investigation of the role of professional experience in accounting for the differences between early and later career teachers' attitudes and behaviours is also warranted.

A deeper investigation of the significance of teaching context, both social and institutional, would help to elucidate the factors that shape attitudes and beliefs about reporting. Given the specificity of personal professional knowledge and teaching context, appropriate research methods may need to be developed. In addition, further

study of the entity of the teacher who writes reports could better unpack and celebrate research into teacher identity, the ethical character of reporting and further explore the real emotions of teaching.

Bibliography

- Acheson, G. (2003). *Teaching the tools of the trade: An exploration of teachers' beliefs, knowledge and practices about maps*. (Doctoral Dissertation). Retrieved from <http://repository.tamu.edu>.
- Ainley, J., & Luntley, M. (2006). Towards an articulation of expert classroom practice. *Teaching and Teacher Education*, 23(7), 1127-113.
- Allal, L. K. (1988). Quantitative and qualitative components of teachers' evaluation strategies. *Teaching and Teacher Education*, 4(1), 41-51.
- Anfara, V. A., & Mertz, N. T. (2006). *Theoretical frameworks in qualitative research*. Thousand Oaks, CA: Sage publications.
- Association of Independent Schools of Victoria. (2006). *Student Reporting Requirements under the Schools Assistance Act 2004*. Retrieved from http://www.ais.vic.edu.au/schools/curriculum/documents/Student_Reporting_Fact_Sheet.
- ATLAS.ti. (Version 6.0) [Computer software]. Berlin, Germany: ATLAS.ti GmbH.
- Attride-Stirling, J. (2001). Thematic networks: An analytical tool for qualitative research. *Qualitative Research*, 1, 395-405.
doi:10.1177/146879410100100307
- Ball, D. L. (2000). Working on the inside: Using one's own practice as a site for studying teaching and learning. In A. E. Kelly, R.A. Lesh, (Eds.), *Handbook of Research Design in Mathematics and Science Education* (pp. 365 – 402). New Jersey: L. Erlbaum.
- Barnes, S. (1985). A study of classroom pupil evaluation: The missing link in teacher education. *Journal of Teacher Education*, 36(4), 46-49.
- Barnett, J., & Hodson, D. (2001). Pedagogical Context Knowledge: Toward a Fuller Understanding of what good science teachers know. *Science Teacher Education*, 85, 426-453.

- Barrell, B. R. (1995). The texture of teaching. In D. C. Jones (Ed.), *The spirit of teaching excellence* (pp. 13-29). Calgary, Canada: Detselig Enterprises.
- Baumgart, N. (1999). Evaluating and reporting student achievements in Australia. *Studies in Educational Evaluation*, 15(1), 7-29. doi: 10.1016/0191-491X(99)90021-7
- Bell, B., & Cowie, B. (1997). *Formative assessment and science education. Research report of the Learning in Science Project*. Hamilton, New Zealand: University of Waikato.
- Bell, B., & Cowie, B. (2001a). *Formative Assessment and Science Education*. Dordrecht, The Netherlands: Kluwer.
- Bell, B., & Cowie, B. (2001b). The characteristics of formative assessment in science education. *Science Education*, 85, 536-553.
- Berliner, D. C. (1988). The development of expertise in pedagogy. *Charles W. Hunt memorial lecture presented at the Annual meeting of the American Association of Colleges for Teacher Education*. New Orleans. February 1988. . Retrieved from ERIC database. (ED 298122)
- Black, P. (2003). The Importance of Everyday Assessment. In J. M. Atkin, & J. E. Coffey (Eds.), *Everyday assessment in the science classroom* (pp. 1 – 12). Arlington, VA:National Science Teachers Assn. Press
- Black, A. L., & Halliwell, G. (2000) Accessing practical knowledge: How? Why?. *Teaching and Teacher Education*, 16(1), 103-115.
- Black, P., & Wiliam, D. (1998). Inside the Black Box: Raising standards through classroom assessment. *Phi Delta Kappan*, 80, 139-148. Retrieved from <http://www.pdkintl.org/kappan/kbla9810.htm>
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy and Practice*, 5, 7- 74. doi: 10.1080/0969595980050102

- Borko, H., & Shavelson, R. J. (1978). Teachers' sensitivity to the reliability of information in making causal attributions in an achievement situation. *Journal of Educational Psychology, 70*, 271-279. doi: 10.1037/0022-0663.70.3.271.
- Brookhart, S. M. (1991) Grading practices and Validity, *Education Measurement: Issues and practice, 10*(1), 35-36.
- Brookhart, S. M. (1993). Teachers' grading practices: Meaning and values. *Journal of Educational Measurement, 30*(2), 123-142.
- Brookhart, S. M. (1994). Teachers' grading: Practice and theory. *Applied Measurement in Education, 7*(4), 279-301.
- Brown, S. A., & McIntyre, D. (1993). *Making Sense of Teaching*. Buckingham, UK: Open University Press.
- Brown, S. L., & Melear, C. T. (2006). Investigation of secondary science teacher's beliefs and practices after authentic inquiry based experiences. *Journal of Research in Science Teaching, 43*(9), 938-962.
- Bryan, L. A. (2012). Research on teacher beliefs. In B. J. Fraser, K. G. Tobin, & C. J. McRobbie (Eds.), *Second International Handbook of Science Education* (pp. 477-495). Springer: Dordrecht. doi:10.1007/978-1-4020-9041-7_33
- Calderhead, J. (1989). Reflective teaching and teacher education. *Teaching and Teacher Education, 5*(1), 43-51.
- Calderhead, J. (1991). The nature and growth of knowledge in student teaching. *Teaching and Teacher Education, 7*(5), 531-535.
- Calderhead, J., & Robson, M. (1991). Images of teaching: Student teachers' early conceptions of classroom practice. *Teaching and Teacher Education, 7*(1), 1-8.
- Carlgrén, I., & Lindblad, S. (1991). On teachers' practical reasoning and professional knowledge: Considering conceptions of context in teachers' thinking. *Teaching and Teacher Education, 7*(5), 507-516.

- Carter, K. (1990). Teachers' knowledge and learning to teach. In W. R. Houston (Ed.), *Handbook of research on teacher education* (pp. 291-310). New York: Macmillan.
- Chen, C., & Ennis, K. D. (1995). Content knowledge transformation: An examination of the relationship between content knowledge and curricula. *Teaching and Teacher Education*, *11*(4), 389-401.
- Cizek, G. J., Fitzgerald, S. M., & Rachor, R. E. (1996). Teachers' assessment practices: Preparation, isolation, and the kitchen sink. *Educational Assessment*, *3*, 159-179. doi: 10.1207/s15326977ea0302-3
- Clandinin, D. J. (1992). Narrative and story in teacher education. In T. Russell, & H. Munby (Eds.), *Teachers and teaching: from classroom to reflection* (pp. 124-137). London: The Falmer Press.
- Clandinin, D. J., & Connelly, F. M. (1994). Personal experience methods. In N. Denzin, & Y. Lincoln (Eds.), *Handbook of qualitative research*. London: Sage Publishing.
- Clandinin, D. J., & Connelly, F. M. (1996). Teachers' professional knowledge landscapes teacher stories-stories of teachers-school stories-stories of school. *Educational Researcher*, *19*(5), 2-14.
- Clark, C. M., & Yinger, R. J. (1977). Research on teacher thinking. *Curriculum Inquiry*, *7* (4), 279-304.
- Clark, C., & Peterson, P. (1986). Teachers' thought processes. In M. E. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 231-263). New York: Macmillan.
- Clarke, D. J. (1987). A rationale for assessment alternatives in mathematics. *Australian Mathematics Teacher*, *43*(3), 8-10.
- Clarke, D. J. (1992). Activating alternative assessment in mathematics. *The Arithmetic Teacher*, *39*(6), 24-29.

- Cochrane, K. F., DeRuiter, J. A., & King, R. A. (1993). Pedagogical content knowing: An integrative model for teacher preparation. *Journal of Teacher Education, 44*(4), 263–272.
- Cohen, L., & Manion, L. (1994). *Research methods in education* (4th ed.). London: Routledge.
- Cohen, L., Manion, L., & Morrison, K. R. (2007). *Research methods in education* (6th ed.). New York: Routledge.
- Comber, B., & Nixon, H. (2009). Teachers' work and pedagogy in an era of accountability. *Discourse: Studies in the Cultural Politics of Education, 30*(3), 333-345. doi: 10.1080/01596300903037069.
- Connell, R. W. (1985). *Teachers' work*. Sydney: George Allen and Unwin.
- Connelly, M. F., & Clandinin, J. D. (1985). Personal practical knowledge and the modes of knowing: Relevance for teaching and learning. In E. Eisner (Ed.), *Learning and teaching the ways of knowing, 84th Year Book of the National Society for the Study of Education* (pp. 174-198). Chicago: University of Chicago Press.
- Connelly, M.F., & Clandinin, D. J. (1997). Teachers' personal practical knowledge on the professional knowledge landscape. *Teaching and Teacher Education, 13*(7), 665-674.
- Connelly, M. F., & Clandinin, J. D. (1999). *Storied identities. Storied landscapes*. New York: Teachers College Press.
- Connelly, M. F., Clandinin, J. D., & He, M. F. (1997). Teachers' personal practical knowledge on the professional knowledge landscape. *Teaching and Teacher Education, 13*(7), 665-674.
- Craig, C. J. (1995). Coming to know on the professional knowledge landscape: Benita's first year of teaching. In D. J. Clandinin, & F. M. Connelly (Eds.), *Teachers' professional knowledge landscapes*. New York: Teachers College Press.

- Craig, C. J. (1999). Parallel stories: a way of contextualizing teacher knowledge. *Teaching and Teacher Education, 15*(4), 397-411.
- Creswell, J. W. (1995). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Cross, L. H., & Frary, R. B. (1996). *Hodgepodge grading: Endorsed by students and teachers alike*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York. Retrieved from ERIC database. (ED 398 262)
- Davis, K. S. (2002). "Change is hard": What Science teachers are telling us about reform and teacher learning of Innovative Practices. *Science Education, 87*(1), 3-20.
- Day, C. (2011, April 6). *A need for change and renewal* [Website editorial]. Retrieved from International Study Association on Teachers and Teaching http://www.isatt.org/Chris_Day.htm
- Day, C., & Leitch, R. (2001). Teachers' and teacher educators lives: the role of emotion. *Teaching and Teacher Education, 17*(2), 403-415.
- Department of Education and Early Childhood Development. (2006a). *Student Reports - Reporting Requirements*. Retrieved from <http://www.education.vic.gov.au/studentlearning/studentreports/schools/reportingreqs.htm>
- Department of Education and Early Childhood Development. (2006b). *For schools - mandated components of reporting*. Retrieved from <http://www.education.vic.gov.au/studentlearning/studentreports/schools/mandatedcomponents.htm>
- Department of Education and Early Childhood Development. (2006c). *Student Reports*. Retrieved from <http://www.education.vic.gov.au/studentlearning/studentreports/default.htm>
- Department of Education and Early Childhood Development. (2006d). *Student Reports - For teachers*. Retrieved July 4, 2011, from DEECD: <http://www.education.vic.gov.au/studentlearning/studentreports/schools/forteachers.htm>

- Department of Education and Early Childhood Development. (2009a). *Sample Report Cards*. Retrieved January 12, 2012, from DEECD:
<http://www.eduweb.vic.gov.au/edulibrary/public/teachlearn/student/samplerportsecondarytmp.pdf>
- Department of Education and Early Childhood Development. (2009b). *Student Reports*. Retrieved July 2011, from DEECD:
<http://www.education.vic.gov.au/studentlearning/studentreports/default.htm>
- Dinham, S. & Scott, C. (1997). *Modelling teacher satisfaction: Findings from 892 teaching staff at 71 schools*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL. Retrieved from ERIC database. (ED 408 247)
- Dinham, S. & Scott, C. (1998). A three domain model of teacher and school executive career satisfaction. *Journal of Educational Administration*, 36(4), 362-378. doi: 10.1108/09578239810211545.
- Diperna, J. C. (2006). Academic Enablers and Student Achievement: Implications for assessment and Intervention. *Psychology in Schools*, 43(1), 7-17.
- Dorr-Bremme, D. W. (1983). Assessing students: Teachers' routine practices and reasoning. *Evaluation Comment*, 6(4), 1-12.
- Duncan, R., & Noonan, B. (2007). Factors affecting teachers' grading and assessment practices. *The Alberta Journal of Educational Research*, 53(1), 1-21
- Dunn, T. G., & Shriener, C. (1999). Deliberate practice in teaching: what teachers do for self-improvement. *Teaching and Teacher Education*, 15(6), 631-651.
- Elbaz, F. (1983). *Teachers' thinking: a study of practical knowledge*. New York: Nicholls.
- Elbaz, F. (1991). Research on teacher's knowledge: The evolution of a discourse. *Journal of Curriculum Studies*, 23, 1-19. doi: 10.1080/0022027910230101
- Ennis, C. D. (1994). Knowledge and Beliefs underlying curricular expertise. *QUEST*, 46, 164-175. doi: 10.1080/00336297.1994.10484118

- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, 70, 113-136.
doi: 10.1348/000709900158001
- Ericsson, K. A., & Simon, H. A. (1980). Verbal reports as data. *Psychological Review*, 87(3), 215-251. doi: 10.1037/0033-295X.87.3.215.
- Erickson, F. (2012). Qualitative research methods for science education. In B. J. Fraser, K. G. Tobin, & C. J. McRobbie (Eds.), *Second International Handbook of Science Education* (pp. 1451-1469). Springer: Dordrecht.
doi:10.1007/978-1-4020-9041-7_33
- Fehring, H. (1998). The Power of Internalised reflective Knowledge: Influences on teachers judgements of students literacy development. In *Research in Education: Does it Count? AARE Annual conference notes*. Adelaide: Australian Association for Research in Education.
- Feldman, A. (1997). Varieties of wisdom in the practice of teachers. *Teaching and Teacher Education*, 13(7), 757-773.
- Feldman, A. (2002). Multiple perspectives for the study of teaching: Knowledge, reason, understanding and being. *Journal of Research in Science Teaching*, 39(10), 1032-1055.
- Feldman, A., Kropf, A., & Alibrandi, M. (1998). Grading with points: The determination of report card grades by high school science teachers, *School Science and Mathematics*, 98(3), 40-48.
- Feldman, A., & Rearick, M. (2000). Ways of knowing and of being teacher educators. In A. L. Cole, & S. Finley (Eds.), *Conversations in community: Proceedings of the second international conference of the self-study of teacher education practices* (pp. 229-232). East Sussex, England: AERA. Retrieved from <http://resources.educ.queensu.ca/ar/sstep/S-STEP2-1998.pdf>
- Feldman, A., & Weiss, T. (2010). Understanding change in teachers' ways-of-being through collaborative action research: A cultural-historical activity theory analysis. *Educational Action Research*, 18(1), 29-55.

- Figuerola, D.T., Zapata, J. & Fraccola, S. (2013). *Education Policy Outlook: Australia*. Paris, France: OECD. Retrieved from http://www.oecd.org/edu/EDUCATION%20POLICY%20OUTLOOK%20AUSTRALIA_EN.pdf
- Fischer, H. E., Borowski, A., & Tepner, O. (2012). Professional knowledge of science teachers. In B. J. Fraser, K. G. Tobin, & C. J. McRobbie (Eds.), *Second International Handbook of Science Education* (pp. 435-448). Springer: Dordrecht. doi:10.1007/978-1-4020-9041-7_33
- Fishman, B. J., & Davis, E. A. (2006). Teacher learning research and the learning sciences. In R. K. Sawyer (Ed.), *The cambridge handbook of the learning sciences*. New York: Cambridge University Press.
- Fives, H., & Buehl, M. M. (2008). What do teachers believe? Developing a framework for examining beliefs about teachers' knowledge and ability. *Contemporary Educational Psychology*, 33(2), 134-176.
- Frykholm, J., & Glasson, G. (2005). Connecting science and mathematics instruction: Pedagogical context knowledge for teachers. *School Science and Mathematics*, 105, 127-142. doi: 10.1111/j.1949-8594.2005.tb18047.x
- Gee, J. P. (2001). Identity as an analytic lens for research in education. *Review of Research in Education*, 25, 99-125.
- Gess-Newsome, J., & Lederman, N.G. (1999). *Examining pedagogical content knowledge: The construct and its implication for Science*. Dordrecht: Kluwer Academic.
- Gipps, C. V. (1994). *Quality assurance in teachers' assessment*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA. Retrieved from ERIC database. (ED 372086)
- Goodfellow, J. (2003). Practical wisdom in professional practice: the person in the process. *Contemporary Issues in Early Childhood Education*, 4(1), 48-63.
- Goos, M. & Bennison, A. (2008). Surveying the technology landscape: Teachers' use of technology in secondary mathematics classrooms. *Mathematics Education Research Journal*, 20(3), 102-130.

- Grant, C. A., & Sleeter, C. E. (1985). Who determines teacher work: The teacher, the organization, or both? *Teaching and Teacher Education*, (3), 209-220.
- Griffin, P., & Nix, P. (1991). *Educational assessment and reporting: a new approach*. Sydney: Harcourt, Brace, Jovanovich.
- Grossman, P. L. (1990). *The making of a teacher: Teacher knowledge and teacher education*. New York: Teachers College Press.
- Gu, Q., & Day, C. (2007). Teachers resilience: A necessary condition for effectiveness. *Teaching and Teacher Education*, 23(8), 1302-1316.
- Gudmundsdottir, S. (1990). Values in Pedagogical Content Knowledge. *Journal of Teacher Education*, 41(3), 44-52, doi: 10.1177/002248719004100306.
- Gusky, T. R. (1994). Making the grade: What benefits students? *Educational Leadership*, 52(3), 14-20.
- Gusky, T. R. (2006). "It wasn't fair!" *Educators' recollections of their experiences as students with grading*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. Retrieved from https://castl.duq.edu/Conferences/Library03/PDF/Grading_Methods/Guskey_T.pdf
- Gusky, T. R. (2007). Multiple sources of evidence: An analysis of stakeholders' perceptions of various indicators of student learning. *Educational Measurement: Issues and Practice*, 26(1), 19-27.
- Guskey, T. R. (2009). *Bound by Tradition: Teachers' view of crucial grading and reporting issues*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. Retrieved from ERIC database. (ED 50932)
- Hargreaves, A. (2005). Educational change takes ages: Life, career and generational factors in teachers' emotional responses to educational change. *Teaching and Teacher Education*, 21(8), 967-983.
- Hargreaves, A. (2000). Mixed emotions: Teachers' perceptions of their interactions with students. *Teaching and Teacher Education*, 16(8), 811-826.

- Hargreaves, A., & Tucker, E. (1991). Teaching and guilt: Exploring the feelings of teaching. *Teaching and Teacher Education*, 7(5), 491-505.
- Hargreaves, D. H. (1980). The occupational culture of teachers. In P. Woods (Ed.), *Teacher strategies: Explorations in the sociology of school* (pp. 125-148). London: Croon Helm.
- Harlen, W. (2005). Trusting teachers' judgement: Research evidence of the reliability and validity of teachers' assessment used for summative purposes. *Research Papers in Education*, 20(3), 245-270.
- Heibert, J., Gallimore, R., & Stigler, J. W. (2002). A Knowledge base for the teaching profession: What would it look like and how can we get one. *Educational Researcher*, 31(5), 3-15.
- Heidegger, M. (1962). *Being and Time*. J. Macquarie and E. Robinson (trans.). New York: Harper & Row.
- Howley, A., Kusimo, P., & Parrott, L. (2000). Grading and the ethos of effort. *Learning Environments Research*, 3(3), 229-246.
- Huberman, M. (1983). Recipes for busy kitchens: A situational analysis of routine knowledge use in schools. *Science Communication*, 4(4), 478-510.
doi:10.1177/0164025983004004002
- Huberman, M. (1985). What knowledge is of most worth to teachers? A knowledge-use perspective. *Teaching and Teacher Education*, 1(3), 251-262.
- Hycner, R. H. (1985). Some guidelines for the phenomenological analysis of interview data. *Human Studies*, 8, 279-303. doi: 10.1007/BF00142995
- Jussim, L. (1986). Teacher expectations: Self-fulfilling prophecies, perceptual biases, and accuracy. *Journal of Personality and Social Psychology*, 57(3), 469-480.
- Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research*, 62(3), 129-169.
doi:10.3102/00346543062002129.

- Kagan, D., & Tippins, D. (1991). How student teachers describe their pupils. *Teaching and Teacher Education*, 7, 455 – 466. doi: 10.1016/0742-051X(91)90041-M
- Keys, P. M. (2007). A knowledge filter model for observing and facilitating change in teachers' beliefs. *Journal of Educational Change*, 8(1), 41-60.
- Keys, P. M. (2008). Teaching Indigenous student science. Paper presented at the *Australian Association for Research in Education Conference*. Brisbane: Retrieved from <http://aare.edu.au/08pap/key08676.pdf>.
- Klapp Lekholm, A. K., & Cliffordson, C. (2008). Discrepancies between school grades and test scores at individual and school level: Effects of gender and family background, *Educational Research and Evaluation*, 14(2), 181-199.
- Lange, J. D., & Burroughs-Lange, S. G. (1994). Professional uncertainty and professional growth: A case study of experienced teachers. *Teaching and Teacher Education*, 10(6), 617-631.
- Lasky, S. (2000). The cultural and emotional politics of teacher–parent interactions. *Teaching and Teacher Education*, 16(8), 843-860.
- Leinhardt, G., & Smith, D. A. (1985). Expertise in mathematics instruction: Subject matter knowledge. *Journal of Educational Psychology*, 77, 247-271. doi:10.1037/0022-0663.77.3.247
- Leinhardt, G., & Greeno, J. G. (1986). The cognitive skill of teaching. *Journal of Educational Psychology*, 78, 75-95.
- Lesh, R., Hoover, M., Hole, B., Kelly A., & Post, T. (2000). Principles for developing thought-revealing activities for students and teachers. In A. E. Kelly, R.A. Lesh, (Eds.), *Handbook of Research Design in Mathematics and Science Education* (pp. 591-646). New Jersey: L. Erlbaum.
- Lesh, R., Lovitts, B. (2000). Research Agendas: Identifying priority problems and developing useful theoretical perspectives. In A. E. Kelly, R.A. Lesh, (Eds.), *Handbook of Research Design in Mathematics and Science Education* (pp. 45–72). New Jersey: L. Erlbaum.

- Lesh, R., Lovitts, B., & Kelly, A. (2000). Principles and assumptions of this book. In A. E. Kelly, R.A. Lesh, (Eds.), *Handbook of Research Design in Mathematics and Science Education* (pp. 17–34). New Jersey: L. Erlbaum.
- Lighthall, F. F., & Lighthall, M. S. (2000). What do teachers feel during the teaching day, and how do they manage their emotional experience?: Selves, sentiments, emotions and energy. In A. L. Cole, & S. Finley (Eds.), *Conversations in community: Proceedings of the second international conference of the self-study of teacher education practices* (pp. 229-232). East Sussex, England: AERA. Retrieved from <http://resources.educ.queensu.ca/ar/sstep/S-STEP2-1998.pdf>
- Liu, X. (2008). Measuring teachers' perceptions of grading practices: Does school level make a difference? *Paper presented at the 2008 Annual Conference of the Northeastern Educational Research Association*, Rocky Hill, CT
Retrieved from http://digitalcommons.uconn.edu/nera_2008/4.
- Livingston, C., & Borko, H. (1989). Expert-novice differences in teaching: A cognitive analysis and implications for teacher education. *Journal of Teacher Education*, 40, 36-42. doi: 10.1177/002248718904000407.
- Lortie, D. C. (1975). *School teacher: A sociological study*. Chicago: University of Chicago Press.
- Loughran, J., Berry, A., & Mulhall, P. (2006). *Understanding and developing science teachers' pedagogical content knowledge*. Rotterdam, The Netherlands: Sense.
- Malehorn, H. (1984). Ten better measures than giving grades. *Clearing House*, 57(6), 256-267. Retrieved from ERIC database. (EJ294772)
- Markbook. (1994). [Computer software]. Forest Hill, Victoria: Semaphor Consulting.
- Marland, P. W. (1977). *A study of teachers' interactive thoughts*. (Unpublished doctoral dissertatio), University of Alberta, Canada.
- Marland, P., & Osborne, B. (1990). Classroom theory, thinking, and action. *Teaching and Teacher Education*, 6(1), 93-109.

- Masters, G. N., & Hill, P. (1988). Reforming the assessment of student achievement in the senior secondary school. *Australian Journal of Education*, 32(3), 274-286. doi: 10.1177/000494418803200304.
- Mayer, D., & Marland, P. (1997). *Teachers' knowledge of students: A significant domain of practical knowledge?* *Asia-Pacific Journal of Teacher Education*, 25(1), 17-34.
- McIntosh, M. E. (1997). Formative assesment in mathematics. *The Clearing House* , 72(1), 92-96. doi:10.1080/00098659709599333.
- McMillan, J. H. (1996). *Educational research: Fundamentals for the consumer* (2nd ed.). NewYork: HarperCollins.
- McMillan, J. H. (2000). Fundamental assessment principles for teachers and school administrators. *Practical Assessment, Research & Evaluation*, 7(8), 1-6. Retrieved from <http://PAREonline.net/getvn.asp?v=7&n=8>
- McMillan, J. H. (2001). Secondary teachers' classroom assessment and grading practices. *Educational Measurement: Issues and Practice*, 20(1), 20-32.
- McMillan, J. H. (2003). Understanding and Improving Teachers' Classroom Assessment Decision Making: Implications for Theory and Practice. *Educational Measurement: Issues and Practice*, 22(4), 34-43.
- McMillan, J. H., & Lawson, S. R. (2001). *Secondary science teachers' classroom assessment and grading practices*. Metropolitan Education Research Consortium, Richmond, VA. Retrieved from ERIC database. (ED 450158)
- McNeil, L. M. (1986). *Contradictions of control: School structure and school knowledge*. New York: Routledge & Kegan Paul.
- Mestre, J. P. (2000). Progress in research: The interplay among theory, research questions and measurement techniques. In A. E. Kelly, R.A. Lesh, (Eds.), *Handbook of Research Design in Mathematics and Science Education* (pp. 151–169). New Jersey: L. Erlbaum.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: Sage.

- Moroney, W., & Olssen, K. (1994). Support for informal assessment in mathematics in the context of standards referenced reporting. *Educational Studies in Mathematics*, 27(4), 387-399.
- Mulholland, J., & Wallace, J. (2008). Computer, craft, complexity, change: Explorations into science teacher knowledge. *Studies in Science Education*, 44(1), 41-62.
- National Project on the Quality of Teaching and Learning, Commonwealth of Australia. (1996). *National competency framework for beginning teachers*. Canberra: Australian Government.
- Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: What can be done?. *Assessment and Evaluation in Higher Education*, 33,(3), 301–314. doi: 10.1080/02602930701293231
- O'Connor, K. E. (2008). “You choose to care”: Teachers, emotions and professional identity. *Teaching and Teacher Education*, 24(1), 117-126.
- O'Donoghue, T. A., & Dimmock, C. A. J. (2002). Teacher professional development in the area of ‘school-reporting-to-parents’. *Asia-Pacific Journal of Teacher Education*, 30(2), 169-180. doi: 10.1080/13598660220135676
- Olson, G. H. (1989). *On the validity of performance grades: The relationship between teacher-assigned grades and standard measures of subject matter acquisition*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco. Retrieved from ERIC database. (ED 307290)
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Peterson, P. L., & Clark, C. M. (1987). Teachers’ reports of their cognitive processes during teaching. *American Educational Research Journal*, 15(4), 555- 565.
- Pijl, S. J. (1992). Practices in monitoring student progress. *International Review of Education*, 38(2), 117-131.

- Powell, R., & Godfrey, P. (1983). When comments count. *Developing Education*, 9(6), 6-8.
- Read, M. (1984). Spell them out: the objectivity of descriptive assessment. *Australian Teacher*, 9, 8-11.
- Resh, N. (2009). Justice in grades allocation: Teachers' perspective. *Social Psychology of Education*, 12, 315-325.
- Ritchie, S. M. (1998). Accessing science teachers' personal practical theories. In *Conference proceedings, Australasian Science Education Research Association*, Darwin. Retrieved from www.fed.qut.edu.au/projects/asera/PAPERS/Ritchie.html
- Ruby, A. (1996). Introduction. In *National competency framework for beginning teachers*. Canberra: Australian Government.
- Ruiz-Primo, M. A., & Furtak, E. M. (2004). *Informal formative assessment of students' understanding of scientific inquiry*. National Center for Research on Evaluation, Standards, and Student Testing, Center for the Study of Evaluation, University of California (CSE Report 639) Retrieved from <http://www.cse.ecla.edu/products/reports/r639.pdf>
- Sadler, R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, 18(2), 119-144.
- Salloum, S., & Abd-El-Khalik, F. (2010). A study of practical-moral knowledge in science teaching: Case studies in physical science classrooms. *Journal of Research in Science Teaching*, 47(8), 929-951.
- Schön, D. (Ed.). (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Schubert, W. H., & Ayer, W. (1992). *Teacher Lore: Learning from our own experience*. New York: Longman.
- Schutz, P., & DeCuir, J. T. (2002). Inquiry on emotions in education. *Educational Psychologist*, 37, 125-134. doi: 10.1207/s15326985EP3702_7

- Scott, G. (1988). Assessment and reporting in the new curriculum frameworks in Victoria. In N. Baumgart (Ed.), *Reports and records of achievement for school leavers* (pp. 232-236). Canberra: The Australian College of Education.
- Searle, J. (1995). *The construction of social reality*. New York: Free Press.
- Shavelson, R. J. (1983). Review of research on teachers' pedagogical judgements, plans and decisions. *The Elementary School Journal*, 83(1), 392-413.
- Shavelson, R. J., & Borko, H. (1979). Research on teachers' decisions in planning instruction. *Educational Horizons*, 57, 183-189. Retrieved from ERIC database. (EJ219054)
- Shavelson, R. J., & Stern, P. (1981). Research on teachers' pedagogical thoughts, judgements, decisions, and behaviour. *Review of Educational Research*, 51(4), 455-498.
- Shavelson, R. J., Atwood, N., & Borko, H. (1977). Experiments on some factors contributing to Teachers' pedagogical decisions. *Cambridge Journal of Education*, 7, 51-70. doi: 10.1080/0305764770070107
- Shepard, L. A. (2008). The role of assessment in a learning culture. In C. F. Desforjes, & R. Fox (Eds.), *Teaching and learning: The essential readings*. Oxford, UK: Blackwell Publishers Ltd.
- Sheridan, M. (1973). Effect of school records on teacher recall of achievement. *Exceptional Children*, 40(1), 41-42.
- Shimahara, N. K. (1998). The Japanese model of professional development: teaching as craft. *Teaching and Teacher Education*, 14(5), 451-462.
doi:10.1016/S0742-051X(97)00055-3.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1-23.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14.

- Simon, M., Tierney, R. D., Forgette-Giroux, R. & Charland, J. (2011). A secondary school teacher's description of the process of determining report card grades. *McGill Journal of Education*, 45(3), 535-554.
- State Board of Education, Victoria. (2000). *Curriculum and Standards Framework II*. Retrieved from National Library of Australia Archive: <http://pandora.nla.gov.au/pan/99103/20090505-1614/csf.vcaa.vic.edu.au/home.html>
- Stengel, B. (1996). Teaching epistemology through cell reproduction: A narrative exploration. *Paper presented at the annual meeting of the American Educational Research Association*. New York: AERA
- Stiggins, R. J., Frisbie, D. A., & Griswold, P. A. (1989). Inside high school grading practices: Building a research agenda. *Educational Measurement: Issues and Practice*, 8(2), 5-14.
- Sutton, R., & Wheatley, K. (2003). Teachers' emotions and teaching: A review of the literature and directions for future research. *Educational Psychology Review*, 15, 327-358. doi: 10.1023/A:1026131715856
- Tajfel, H., & Turner, J. C. (1985). The social identity theory of intergroup behaviour. In S. Worchel and W. G. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7-24). Chicago: Nelson-Hall.
- Tamir, P. (1991). Professional and personal knowledge of teachers and teacher educators. *Teaching and Teacher Education*, 7(3), 263-268.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Newbury Park, CA: Sage.
- Taylor, P. C., Taylor, E., Luitel, B. C. (2012). Multi-paradigmatic transformative research as/for teacher education: An integral perspective. In B. J. Fraser, K. G. Tobin, & C. J. McRobbie (Eds.), *Second International Handbook of Science Education* (pp. 373-387). Springer: Dordrecht. doi:10.1007/978-1-4020-9041-7_33

- Van Driel, J. H., Verloop, N., & de Vos, W. (1998). Developing science teachers' pedagogical content knowledge. *Journal of Research in Science Teaching*, 35(6), 673-695.
- van Someren, M. W., Barnard, Y. F., & Sandberg, J. A. (1994). *The think aloud method: A practical guide to modelling cognitive processes*. London: Academic Press.
- Van Veen, K., & Lasky, S. (2005). Emotions as a lens to explore teacher identity and change: Different theoretical approaches. *Teaching and Teacher Education*, 21(8), 895-898.
- Verjovsky, J., & Waldegg, G. (2005). Analysing beliefs and practices of a Mexican high school biology teacher. *Journal of Research in Science Teaching*, 42(4), 465-491.
- Verloop, N., Van Driel, J., & Meijer, P. (2001). Teacher knowledge and the knowledge base of teaching. *International Journal of Educational Research*, 35(5), 441-461.
- Victorian Curriculum and Assessment Authority. (2007). *The Victorian Essential Learning Standards*. Retrieved from <http://vels.vcaa.vic.edu.au/about/overview.html>
- Victorian Curriculum and Assessment Authority. (2009). *Interpersonal development*. Retrieved from <http://vels.vcaa.vic.edu.au/vels/interpersonal.html>
- Walsh, K. M., Bridgestock, R. S., Farrell, A. M., Rassafiani, M. & Schweitzer, R. (2008) Case, teacher and school characteristics influencing teachers' detection and reporting of child physical abuse and neglect: Results from an Australian survey. *Child Abuse and Neglect*. 31(10), 983-993 Retrieved from QUT Digital Repository <http://eprints.qut.edu.au/>
- Watson, A. (1999). Paradigmatic conflicts in informal mathematics assessment as source of social inequity. *Educational Review*, 51(2), 105-115.

- Watson, A. (2000). Mathematics teachers acting as informal assessors: Practices, problems and recommendations. *Educational Studies in Mathematics*, 41(1), 69-91.
- Webb, K., & Blond, J. (1995). Teacher knowledge: The relationship between caring and knowing. *Teaching and Teacher Education*, 11(6), 611-625.
- Weinstein, M. C., Fineberg, H. C., Elstein, A.S., & Frasier, H. S. (1980). *Clinical Decision Analysis*. Philadelphia: Saunders.
- Whitmer, S. P. (1983). A descriptive multimethod study of teacher judgement during the marking process. *The Institute for Research on Teaching, East Lansing, MI*. Retrieved from ERIC database. (ED234052)
- Wilson, B., & Armstrong, D. (1993). A computerised system for school report and record writing. *Computers and Education*, 21(4), 321-330. doi: 10.1016/0360-1315(93)90035-H
- Wilson, M., & Scalise, K. (2003). Reporting progress to parents and others: Beyond grades. In J. M. Atkin, & J. E. Coffey (Eds.), *Everyday assessment in the science classroom* (pp. 89-108). Vermont, AR: National Science Teachers Association Press.
- Wilson, N. (1975). *A framework for assessment in the secondary school*. Adelaide: Education Department of South Australia.
- Winograd, K. (2003). The functions of teacher emotions: The good, the bad, and the ugly. *Teachers College Record*, 105(9), 1641-1673.
- Wooton, M. (1992). *'Could do Better': Writing comments on school reports*. Upminster, UK: Nightingale Teaching Consultancy.
- Wooton, M. (1993). *Marking and assessing*. Upminster, UK: Nightingale Teaching Consultancy.
- Yesbeck, D. M. (2011). *Grading practices: Teachers' considerations of academic and non-academic factors*. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond VI. Retrieved from

https://dizzyg.library.vcu.edu/bitstream/handle/10156/3575/Yesbeck_Diana_PhD.pdf?sequence=1

Zembylas, M. (2005). *Teaching with emotion: A postmodern enactment*. Greenwich, CT: Information Age Publishing.

Zembylas, M. (2007). Emotional ecology: The intersection of emotional knowledge and pedagogical content knowledge in teaching. *Teaching and Teacher Education*, 23(4), 355-367.

Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.

Appendix 1 -The Questionnaire

This version of the questionnaire shows: (a) the first segment of the hard copy questionnaire, and then (b) the complete online presentation.

(a) Hard copy of Questionnaire

Questionnaire The following questionnaire forms part of a research project into the use of informal assessment in reporting. Please indicate your answers in the spaces provided. It may help you with your answers if you check back through your records to see what kinds of information about students learning that you record.

Respondents must have taught science in any Victorian secondary school during 2007 for a full semester and must hold full teacher registration, that is, greater than one year of qualified teaching experience. Did you teach science for at least one full semester in 2007? yes no
 Have you been working as a teacher for at least one year? yes no . If you answered yes to both of these questions please continue with the survey.

1. Please indicate the sector that you teach in, in 2008:
Government Systemic Catholic Independent
2. Which of the following describes the student population? *Tick as many as appropriate.*
P-12 7-12 7-10 only 11-12 only
co-educational boys only girls only
3. Please indicate your gender: male female
4. Choose a category that indicates the number of years of teaching experience that you have: less than 2 2 – 5 years 6 – 10 years
11 – 15 years more than 15 years
5. Please tick all of the year levels that you taught science to in 2007:
year 7 year 8 year 9 year 10 year 11 or 12

Reporting to Parents about Learning Achievement in Science

1. Introduction

This questionnaire is being distributed to science teachers across Victoria from May to August of 2008. The questionnaire aims to look at the current range of reporting practices of science teachers. When you were invited to take part in this research you should have received an information sheet and consent form.

Please read the information sheet and sign the consent form before proceeding.

1. Have you received the information sheet and consent form?

Yes

No

2. Have you read the information sheet describing this project?

Yes

No

3. Have you signed the consent form?

Yes

No

2. A little about you and your work environment

The following Questionnaire forms part of a research project into the use of informal assessment in reporting.

Please work through the 25 question sets - most of the answers are very quick but the last two may take a little longer.

It may help you with your answers if you check back through your records to see what kinds of information about students learning that you record.

IF YOU EXIT OUT OF THE SURVEY BEFORE IT IS COMPLETED YOU CAN NOT GET ACCESS TO YOUR DATA AGAIN. Incomplete surveys will be discounted but you can re-enter the total data set at a later time.

Respondents must have taught science in any Victorian school that includes high school age students during 2007 for a full semester and must hold full teacher registration, that is, greater than one year of qualified teaching experience.

* Did you teach science for a least one full semester in 2007?

* Have you been working as a teacher for a least one year?

If you answered yes to both of these questions please continue with the questionnaire.

4. Please indicate the sector that you teach in, in 2008:

Government

Systemic Catholic

Independent

5. Which of the following describes the student population of the school you teach in?

Select as many as appropriate.

P-10

7-10 only

boys only

P-12

11-12 only

girls only

7-12

co-educational

6. Please indicate your gender:

female

male

7. Choose a category that indicates the number of years of teaching experience that you have:

- less than 2 years 6-10 years more than 15 years
 2-5 years 11-15 years

8. Please tick all of the year levels that you taught science to in 2007.

- year 7 year 8 year 9
 year 10 year 11 year 12

3. Recording learning behaviours

9. How do you record your marks and grades for formal tasks such as topic tests, practical reports and assignments?

Tick one or more.

- Onto a class role which is printed on loose pages
 Onto the assessment record pages of a commercial teacher's diary
 On a hand-written list which is retained for future reference
 Directly into a computer spreadsheet program eg: Excel
 Directly into a computer database program eg: Access
 Directly into a computer that has specific reporting software
 Directly into a computer using some other software
 Some other way

Please give any specific details of software or strategies

10. When your students complete a formal assessment task such as a test or an assignment, do you make written records about any aspects of their work other than the final mark or grade?

- never rarely at times often always

11. Please describe the kinds of written records other than grades or marks that you might make for:

Topic tests or exams

Practical reports

Assignments

12. How do you use this information?

4. Informal assessment

You may keep records of student behaviours, learning behaviours or achievements other than actual marks or grades in your notes. Please indicate how frequently you record the following kinds of information.

13. Please indicate how frequently you record the following kinds of information about students and their learning behaviours

	never	rarely	occasionally	often	always
Significant medical conditions that affect student welfare	<input type="radio"/>				
Aspects of students' personal information, eg: family circumstances	<input type="radio"/>				
ESL or special learning needs status	<input type="radio"/>				
late to class	<input type="radio"/>				
absence from class	<input type="radio"/>				
as you receive assignment tasks	<input type="radio"/>				
non-submission of work	<input type="radio"/>				
late submission of work	<input type="radio"/>				
negotiated individual submission dates	<input type="radio"/>				
homework completion	<input type="radio"/>				
modification of tasks for students with special needs	<input type="radio"/>				
unfinished classroom tasks	<input type="radio"/>				
a conflict event between you (the teacher) and a student in class	<input type="radio"/>				
conflict between students during class time or tasks	<input type="radio"/>				
motivation	<input type="radio"/>				
enthusiasm	<input type="radio"/>				
successful group work	<input type="radio"/>				
cooperativeness	<input type="radio"/>				

14. Are there any other kinds of information that you have or are likely to make written notes about?

5. Feedback

15. How do you give feedback to students on their work? As this may vary with tasks over the semester tick as many as relevant.

- General discussion of the task with the class as a whole
- Provision of worded rubrics with clear statements about the allocation of marks
- Individual discussion with students when the work is returned
- Written comments on a grading slip that is returned to students
- Writing directly onto the students work
- Other (please specify)

16. What do you do most often?

17. What do you feel is most valuable for the students?

18. Do you keep copies of the feedback you give to students?

- yes, always
 Yes, sometimes
 Yes, but rarely
 No, never

6. What you know about students

19. To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Once I have marked some of the students' work I hold an idea about their standard of work in my memory.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can recall the standard of work that a student usually produces.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use marks on tests to show evidence of learning or improvement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need to keep written records to justify my perception of students' work standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I refer to my knowledge about students' usual standard of work when reporting to parents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know if a student submits a task that is above or below their usual standard of work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need to keep records to get evidence of improvements in their standard of work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know if a student's work has improved.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Reporting practices

20. What kinds of reporting to parents are carried out each semester at your school? (Select as many as relevant)

- Mid-semester progress reports
- End of semester written reports
- Parent-teacher meetings available to all students
- Portfolio presentations
- Individual conferences with parents on request
- Other (please specify)

21. If your school prepares a paper based progress report that is sent home at mid-semester, what categories of information are given? (Select as many as relevant)

- Application
- Behaviour
- Homework completion
- Group work
- Attendance
- Organisation
- General level of achievement
- Specific marks or grades
- Effort
- Other (please specify)

22. What evidence do you use to prepare mid-semester reports? (Select as many as relevant)

- Grades or marks
- Work samples
- Written or recorded informal notes
- General impressions based on classroom observations
- Other (please specify)

8. Parent-teacher conferences

23. If your school holds a parent-teacher night, when parents and teacher speak briefly about students, what do you usually do to prepare?

- Nothing
- Look over marks and notes
- Prepare a written list of comments to make
- Other (please specify)

24. What evidence do you usually bring to show parents at parent-teacher conferences? (select as many as relevant)

- Nothing
- Attendance records
- Work completion records
- Work samples
- Informal records
- Grades or marks
- Other (please specify)

25. To what extent do you agree with the following statements about parent-teacher meetings?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I find them confrontational. Some parents take the opportunity to have a go at me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I appreciate the opportunity to explain my approach.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I am betraying the students if I give any negative feedback to their parents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I have to justify myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I have to warn parents about their child's poor progress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents are able to give me information about episodes of bullying or pass on concern about their child's wellbeing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It gives me the chance to make the student accountable for their poor efforts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can reassure parents that their child is progressing well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can get insights into the student's behaviour and attitudes through meeting parents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like getting the students into trouble with their parents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can give parents information about how their child gets on with and works with other students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It gives me the chance to make the student accountable for their poor behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have to prepare really well so that I have all the evidence at hand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is great to be able to tell parents that their child is working hard.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents can pass on useful information about how the student is coping with workload.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is great to be able to tell parents that their child is doing their best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Report cards

These questions are a little harder to answer because of the great variation in students that we work with. Please consider an average student when deciding on your response.

26. In the end of semester "report card" to parents, most schools will report on some of the following aspects of performance, learning or behaviour, either with a rating scale or a written comment.

In the first column, please indicate everything that is included in reports to parents.

In the second column please indicate the things you generally address with a written comment.

	Included in reports	Addressed with comments
Areas of achievement	<input type="checkbox"/>	<input type="checkbox"/>
Areas for improvement	<input type="checkbox"/>	<input type="checkbox"/>
Behaviour	<input type="checkbox"/>	<input type="checkbox"/>
Attitude	<input type="checkbox"/>	<input type="checkbox"/>
Class work and homework completion	<input type="checkbox"/>	<input type="checkbox"/>
Grades for particular tasks	<input type="checkbox"/>	<input type="checkbox"/>
Attendance	<input type="checkbox"/>	<input type="checkbox"/>
Work above or below standard	<input type="checkbox"/>	<input type="checkbox"/>
Independence as a learner	<input type="checkbox"/>	<input type="checkbox"/>
Extension tasks completed	<input type="checkbox"/>	<input type="checkbox"/>
Application	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)		

27. The following is a list of the kinds of information that may be considered by teachers when preparing written comments for the report card.

In the first column, select the SIX things that YOU REGARD as THE MOST IMPORTANT sources of information for preparing reports about students. Please number them from 1(most important) to 6(less important).

In the second column, select the SIX things that you believe PARENTS would regard as the most important sources of information about students. Please number them from 1(most important) to 6(less important).

	Your opinion of the SIX most important pieces of information for writing reports	According to parents, the SIX most important pieces of information for writing reports
Marks on tests	<input type="text" value="1"/>	<input type="text" value="1"/>
Marks for skill in practical work	<input type="text" value="2"/>	<input type="text" value="2"/>
Marks for practical reports	<input type="text" value="3"/>	<input type="text" value="3"/>
Marks for assignment work	<input type="text" value="4"/>	<input type="text" value="4"/>
Your knowledge of family circumstances	<input type="text" value="5"/>	<input type="text" value="5"/>
Your knowledge of the cooperativeness of the student	<input type="text" value="6"/>	<input type="text" value="6"/>
Your knowledge of the student's application or effort in class	<input type="text" value="7"/>	<input type="text" value="7"/>
Your knowledge about the student's ability	<input type="text" value="8"/>	<input type="text" value="8"/>
ESL status or special learning needs of the student	<input type="text" value="9"/>	<input type="text" value="9"/>
Recorded informal notes or comments describing aspects of the student's learning	<input type="text" value="10"/>	<input type="text" value="10"/>
Recorded informal notes or comments describing the student's application or effort	<input type="text" value="11"/>	<input type="text" value="11"/>

Reporting to Parents about Learning Achievement in Science

10. THANK YOU

Thank you for contributing to this research project.

Please make sure the consent form is returned and also send back the email slip if you would like to receive a copy of the results.

Please EXIT THE SURVEY FROM THE LINK at the top of this page.

Appendix 2 – Request letters

Letter to (i) Principals of schools requesting permission to distribute questionnaires
(ii) Heads of Science department and (iii) Information Sheet provided.

Kensington LPO
PO Box 1370
Kensington, VIC 3031
Ph: 03 9376 4468
susan.long@postgrad.curtin.edu.au

May 24, 2008

***Reporting to parents is the focal point of each teaching semester
yet it is poorly researched both in Australia and internationally.***

Dear Principal,

Report writing is one of the professional skills that teachers refine over years. As part of my doctoral research project I hope to find out about the thinking process and resources that experienced science teachers use to compose written reports. I need to begin this project with a wide-ranging survey of science teacher from all sectors and with various levels of experience.

Ultimately I hope the research project will identify resources and approaches that will assist teachers to reflect on their own reporting strategies and allow beginning teachers to acquire this expertise sooner. *I am writing to you to ask permission to distribute a questionnaire to your science teaching staff. The survey is paper based and will only take a few minutes.*

The survey seeks NO specific information about ANY students. It asks general information about the way individual teachers keeps records and reports to parents and it asks individual teachers opinions. No identifying information about your school will be sought. The returned surveys are anonymous. There is no risk of infringement of privacy for the school, staff or students. Specific details about data management and the purpose of the project are included on the enclosed information sheet. If you are willing to allow me to invite some of your staff to participate could you please pass the attached letter to your Head of Science department or Science KLA. I would be happy to respond to any additional questions you may have via email or telephone after school hours.

My sincere thanks,

Susan Long
Graduate student & Head of Science KLA
St Aloysius College, North Melbourne

Kensington LPO
PO Box 1370
Kensington, VIC 3031
Ph: 03 9376 4468
longs@aloysius.vic.edu.au
susan.long@postgrad.curtin.edu.au

To the Head of the Science KLA or department:

Dear Colleague,

Reporting to parents is the focal point of each teaching semester yet it is poorly researched both in Australia and internationally.

I have been a science teacher since 1987 and I decided to pursue studies for a Doctorate in Science Education a few years ago. I have chosen to investigate aspects of the processes that science teachers follow when reporting to parents and guardians about learning achievement.

I became interested in this topic after reading a research project from The Netherlands which found that teachers write lots of feedback on student work and then they give it back thereby losing the physical evidence of the students learning achievements. Teachers hold that information in their minds and call on it often - when looking at the standard of students' work or judging the appropriateness of various learning strategies etc. When it comes time for writing report cards, however, teachers chose to rely on formal evidence of achievement such as marks and grades.

I aim to survey several hundred science teachers across Victoria in all settings to get baseline data about how they collect and use formal and informal assessment data.

I need your help.

I would like you to pass on copies of the questionnaire to members of the science department at your school. If you are willing to do this would you please email me at susan.long@postgrad.curtin.edu.au I will need your postal address and the number of questionnaires you could pass on – including one for yourself. I can then minimise paper waste by only sending what is needed. After passing out the questionnaires could you then encourage your department members to return them whether completed or not.

The survey can also be completed online. I can forward the link and post information sheets and consent forms. The submitted data will be encrypted with SSL and is secure.

The success of this project depends entirely on the wide distribution of surveys so that the results are valuable. I think the project is worth the effort and I hope that science teachers will view their contribution to this research as an opportunity to acknowledge the complexity of this aspect of our work.

My sincere thanks,

Susan Long

Graduate student & Head of Science KLA, St Aloysius College, North Melbourne

“To what degree does informal assessment count when reporting to parents about learning achievement in Science?”



What is this research project investigating?

A review of the literature on formal and informal methods of assessment has found that teachers accrue an enormous amount of information about their students. It allows them to judge whether individuals are working to their usual standards or capability. It is used to modify tasks and learning opportunities and it must contribute to the decision making that goes into the very stressful and care-filled process of composing reports to parents.

A small number of surveys suggest that in preparing reports, secondary teachers rely on physical evidence of learning achievement – specifically marks and grades - over any informal observations they make about their students work.

I hope this report will compile data from several hundred experienced practising science teachers and will provide a valid data set about how formal and informal observations about students learning are recorded and if they are valued in the reporting process.

After a picture of the range of reporting practices is identified from analysis of the questionnaire data, a small number of participants will complete a process tracing exercise where they will prepare written reports for a number of hypothetical students. Their valuing of formal and informal assessment information will be investigated through qualitative analysis methods.

Who is conducting the project?

My name is Susan Long, I have been a teacher for twenty years and I am currently teaching full time in Melbourne and working on a research project as part of my studies towards a Doctorate in Science Education, through Curtin University of Technology in Perth. Curtin University offers a range of postgraduate education courses through SMEC, the Science and Mathematics Education Centre, with very flexible distance, online and conference delivery of courses.

The principal researcher is Professor David Treagust from SMEC. He can be contacted at the Science and Mathematics Education Centre, Curtin University of Technology on telephone: (08) 9266 7924, or d.f.treagust@curtin.edu.au.

Who will be asked to complete the survey?

Approximately 750 teachers from across all teaching sectors and regions in Victoria will be invited to complete questionnaires. Those who participate should have at least one full year of teaching experience and should have been teaching science during 2007.

What will participants be asked to do?

Participants will be invited to read an information sheet, sign a consent form, and then complete a six page paper questionnaire. The questionnaire can also be completed at an SSL secured online link. It should take between 10 and 20 minutes to complete. This questionnaire asks a few questions about gender, teaching sector and years of experience so

that the data can be explored for correlations. Most of the other questions ask the participant to describe aspects of reporting practice or indicate their opinions about what is valued in assessment and reporting.

Participants will be asked to return the consent form and any completed questionnaires using a stamped addressed envelope which will be supplied.

How will confidentiality be protected?

Participants will be asked to sign a consent form but their name and any contact details supplied will be isolated from questionnaires. The responses from the questionnaires will be anonymous and most of the data will be collated into group statistics in the final report. Any written comments that may be quoted in the final report will not be able to be linked to a particular participant. The data will be kept securely in the Science and Mathematics Education Centre for five years from the date of publication, before being destroyed.

The questionnaire asks generally about teacher's professional practise but it does not ask about specific students or specific categories of students. Teachers will be directed not to refer to any specific students in their responses.

How will schools and participants receive feedback?

Once the thesis arising from this research has been completed, the data will be made available to the Department of Education and Early Childhood Development and all Victorian Catholic Education Offices. A summary of the findings will be sent to any participants who indicate that they would like to receive the report and who supply an email contact. The findings may also be written up as a journal article.

Has this project been approved?

This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number SMEC20080017). If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth 6845 or by telephoning (08) 92662784. It has also been approved by the Victorian Department of Education and Early Childhood Development and the Catholic Education Offices for the Diocese of Melbourne, Sale, Sandhurst and Ballarat.

Where can you get further information?

Should you require any further information, or have any concerns, please do not hesitate to contact Susan Long on 03 9376 4468 or by email at longs@aloysius.vic.edu.au, or susan.long@postgrad.curtin.edu.au

Should you have any concerns about the conduct of the project, you are welcome to contact the Principal Researcher at the Science and Mathematics Education Centre on (08) 9266 7924, or Fax: (08) 9266 2503.

Appendix 3 –Student Information Cards

Data describing hypothetical students for Process Tracing task.

Student 1

Name: *Zebo Bloggs*

SEMESTER 1 ASSESSMENT:

Light test: 81%

Ecosystems test: 90%

Chemistry test: 87%

Light prac report: 18.5/20

Chemistry Prac report: 18/20

Ecosystems field work: 47/50

Recycling Poster: 18.5/20

Notes:

Student 2

Name: *Bop Smith*

*** Participant will also be told that Bop's Dad is seriously ill and Bop has very little time to do homework as they visit him at the hospital each night. Bop is often working in the library through lunch to get work done.

SEMESTER 1 ASSESSMENT:

Light test: 49%

Ecosystems test: 61%

Chemistry test: 53%

Light prac report: 14/20

Chemistry Prac report: 14/20

Ecosystems field work: 43/50

Recycling Poster: 19/20

Notes: Presentation of written work is meticulous. The recycling poster was fantastic - beautiful work.

Well behaved in the lab, asks great questions. Seems attentive.

Confused diverging and converging lenses, concave and convex lenses. Needs to memorise the common Chemical symbols

Student 3

Name: *Yort Jones*

*** Participant will also be told that Yort hates group work and was supposed to do field work as part of a group but ended up in a physical altercation with another group member.

SEMESTER 1 ASSESSMENT:

Light test: 93%

Ecosystems test: 84%

Chemistry test: 85%

Light prac report: 17/20

Chemistry Prac report: 16/20

Ecosystems field work: 22/50

Recycling Poster 16/20

Notes: More effort in presentation of work necessary.

Student 4

Name: *Meba Meggs*

SEMESTER 1 ASSESSMENT:

Light test: 39%
Ecosystems test: 50%
Chemistry test: 52%

Light prac report: 11/20
Chemistry Prac report: 7/20

Ecosystems field work: 28/50

Recycling Poster: Not submitted

Notes:

Student 5

Name: *Wod Johnson*

*** participant will also be told that Wod is aggressive, calls out stupid comments all the time, is never on task, work is always scrappy and incomplete. Parents did not come to parent-teacher night

SEMESTER 1 ASSESSMENT:

Light test: 24%
Ecosystems test: 18%
Chemistry test: 38%

Light prac report: not submitted
Chemistry Prac report: 8/20

Ecosystems field work: 28/50

Recycling Poster: 11/20

Notes: Wod tried to set fire to some papers in the lab – placed on a warning about exclusion from all practical work in week 8. Recycling poster was submitted unfinished. Field work was copied from another student.

Student 6

Name: *Fon West*

SEMESTER 1 ASSESSMENT:

Light test: 54%
Ecosystems test: 66%
Chemistry test: 48%

Light prac report: 15/20
Chemistry Prac report: 14.5/20

Ecosystems field work: 45/50

Recycling Poster: 18/20

Notes: *Fon seeks lots of clarification about prac work and about all assessment tasks. Answers are confused and details are often mixed up. Was not able to correctly write ANY chemical formulas.*

Student 7

Name: *gar whozit*

SEMESTER 1 ASSESSMENT:

Light test: 58%
Ecosystems test: 70%
Chemistry test: 54%

Light prac report: 15/20
Chemistry Prac report: 13/20

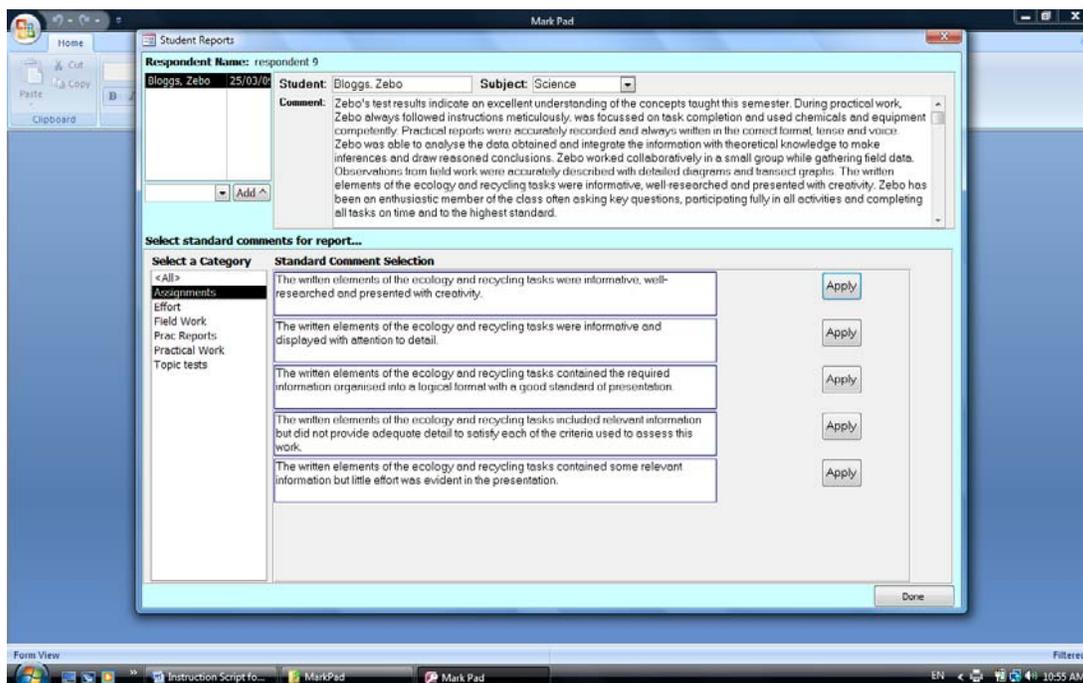
Ecosystems field work: 36/50

Recycling Poster: 15/20

Notes: *Arrows the wrong way around in food web task. Is always attentive in class. Work is fine. Homework not done on three occasions*

Appendix 4 – Comments Available in the Comment Database

Screen shot of the Markpad module screen and comment lists found in the included database.



Topic Tests

- <gn>'s test results indicate an excellent understanding of the concepts taught this semester.
- <gn>'s test results indicate a very good understanding of the concepts taught this semester.
- <gn>'s test results indicate a good understanding of the concepts taught this semester.
- <gn>'s test results indicate a satisfactory understanding of the concepts taught this semester.
- <gn>'s test results indicate a poor understanding of the concepts taught this semester.

Skill in Prac Work

- During practical work, <gn> always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently.
- During practical work, <gn> demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely.
- During practical work, <gn> usually demonstrated safe and reliable behaviour and showed competence with chemicals and equipment.
- During practical work, <gn> showed an appropriate awareness of safety but was inattentive at times and consequently, needed to seek clarification about the tasks.
- During practical work, <gn> failed to use time and resources constructively and often needed to be reminded about the importance of safety in the laboratory.

Practical Reports

- Practical reports were accurately recorded and always written in the correct format, tense and voice. <gn> was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions.
- Practical reports were consistently written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment.
- Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment.
- Practical reports adequately record the procedure followed and the results were well presented, however, the discussion and conclusion portions of the report were not completed in detail and did not show an understanding of the purpose of the task.
- Practical Reports were incomplete and insufficiently detailed. While some results were recorded, the discussion and conclusion portions of the reports submitted were cursory and did not show an understanding of the task.

Effort and Application

- <gn> has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard.
- <gn> has been studious and interested in class activities, completing a range of tasks on time and to the highest standard.
- <gn> has been persistent and dedicated, showing a positive approach to each new topic. <gn> has consistently produced work of a good standard.
- <gn> has worked inconsistently this semester, putting satisfactory effort into many class activities and homework tasks, but failing to submit some tasks on time.
- <gn> has worked inconsistently throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due.

Field Work

- <gn> worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs.
- <gn> worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs.
- <gn> worked effectively with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph.
- <gn> worked with a small group while gathering field data. Some observations from field work were recorded with diagrams and a transect graph was attempted. The written elements of the ecology and recycling tasks included relevant information but did not provide adequate detail to satisfy each of the criteria used to assess this work.

- <gn> did not work collaboratively during field work and did not follow the guidelines for the task. Few observations from field work were recorded and the transect graph was not completed.

Assignments

- The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity.
- The written elements of the ecology and recycling tasks were informative and displayed with attention to detail.
- The written elements of the ecology and recycling tasks contained the required information organised into a logical format with a good standard of presentation.
- The written elements of the ecology and recycling tasks included relevant information but did not provide adequate detail to satisfy each of the criteria used to assess this work.
- The written elements of the ecology and recycling tasks contained some relevant information but little effort was evident in the presentation.

Appendix 5 – Process Tracing Task Script

Instruction Script for Process Tracing task

- Most teachers write reports for students they know well because they have taught them over many weeks. Occasionally due to illness or leave a relieving teacher needs to write reports for students that he/she doesn't know well, often using a database with strict guidelines about format and content. This task is like that situation.
- You will write a report comment for seven fictitious students from one class. Names are made up and are not gender indicative – the database uses just the names but you can pick a pronoun of your choice to write the comment.
- The database is designed to be very similar in function to Markbook. The single paragraph comment you will write is in the older style of reports, rather than the current expectation to address areas of strengths and areas for improvement separately. I have allocated you a respondent number.
- The top half of the screen is the data relating to the student. The bottom half has a list of comments that you can use.
- To start a report, you need to click on the students name to bring up the comment box – the name must be highlighted in dark grey.
- To add comments, select a category from the bottom left and click the apply button adjacent to the comment you have selected in the area on the bottom right. The comment appears in the box at the top of the screen. You can also type directly there.
- The comment categories are given in alphabetical order. You can pick any categories you like and any number of categories is fine. You don't have to add a comment for all categories.
- To begin a new report, click on a different student.
- The comments are arranged in blocks of five ranging from a comment describing an excellent standard down to a poor standard. You do not have to use the wording provided – you can write what you feel is more appropriate.
- I am giving you seven cards showing the marks that the students achieved for the same tasks. Some of the cards have extra comments as well as the marks. I will give a few additional comments about some of the students. Can we look at the student information cards now?
- As you do this task, just "think aloud".

Appendix 6 - The Semi-Structured Interview Questions

Focus point 1: FORMAL SCORES ONLY

Some students result sheets only had percentages or scores for specific formal tasks. Did you find these reports easy or difficult? Was either easier to do? Why do you think that was?

Focus point 2: FORMAL SCORES WITH WRITTEN INFORMAL ASSESSMENT INFORMATION

Did the additional information make the reports easier to write?

Focus point 3: FORMAL SCORES WITH ORAL PROVISION OF INFORMAL ASSESSMENT INFORMATION

Did you feel there was sufficient authority in the oral information? Do you feel it had an impact on the kinds of comments you wrote?

Focus point 4: STRATEGIC LENIENCY

Some of the student result sheets described student's motivation, application and extenuating family circumstances. Do you think you felt more lenient or punitive in the way you composed the report.

Focus point 5: GENERAL IMPRESSIONS ABOUT THE TASK

Did you find the task easy or difficult? Why do you think you felt that way? Which was the hardest report to write? Why? Which was the easiest? Why?

|

Appendix 7 – Ethics Approval

memorandum

Curtin 
University of Technology

To	Susan Long, SMEC
From	Pauline Howat, Coordinator for Human Research Ethics, Science and Maths Education Centre
Subject	Protocol Approval SMEC20080017
Date	7 April 2008
Copy	David Treagust, SMEC Divisional Graduate Studies Officer, Division of Science and Engineering

Office of Research and Development
**Human Research Ethics
Committee**
TELEPHONE 9266 2784
FACSIMILE 9266 3793
EMAIL hrec@curtin.edu.au

Thank you for your "Form C Application for Approval of Research with Minimal Risk (Ethical Requirements)" for the project titled "*TO WHAT DEGREE DOES INFORMAL ASSESSMENT COUNT WHEN REPORTING TO PARENTS ABOUT LEARNING ACHIEVEMENT IN SCIENCE*". On behalf of the Human Research Ethics Committee I am authorised to inform you that the project is approved.

Approval of this project is for a period of twelve months **7th April 2008 to 6th April 2009**.

If at any time during the twelve months changes/amendments occur, or if a serious or unexpected adverse event occurs, please advise me immediately. The approval number for your project is **SMEC20080017**. *Please quote this number in any future correspondence.*



PAULINE HOWAT
Coordinator for Human Research Ethics
Science and Maths Education Centre

Appendix 8 – Research Approval from DEECD

Letters from Western Metropolitan, Southern Metropolitan, Barwon South Western Regions.



Department of Education and Early Childhood Development

Office for Government School Education
Western Metropolitan Region

Level 4, 369 Royal Parade
Wool House
Parkville 3052
03 9291 6500
DX 212340

WMR006907

Ms Susan Long
74 Tennyson Street
KENSINGTON 3031

Dear Ms Long

Thank you for your letter of 21 July 2008 regarding your research study in government schools titled: To what degree does informal assessment count when reporting to parents about learning achievement in Science?

I appreciate the fact that you have provided me with an outline of your research, a list of the schools you intend to approach to distribute your questionnaire and the letter of approval from the Office for Policy, Research and Innovation, Department of Education and Early Childhood Development.

I wish you well with your research study.
Yours sincerely

KATHERINE HENDERSON
Regional Director
Western Metropolitan Region

5/09/2008

This original has been printed in black and white to reduce cost and environmental impact.





**Department of Education and
Early Childhood Development**

**Office for Government School Education
Southern Metropolitan Region**

Level 1
33 Princes Highway
Dandenong, Victoria 3175

Telephone: (03) 9794 3555
Facsimile: (03) 9794 3500
www.smr.vic.edu.au

24 July 2008

Ms Susan Long
Kensington LPO
PO Box 1370
KENSINGTON 3031

Dear Ms Long

Thank you for your letter dated 21 July 2008, outlining research regarding the importance of informal and formal assessment for secondary science teachers to undertake at various secondary school in Southern Metropolitan Region.

Approval for your research has been granted through the Research Branch as is required. I draw your attention to the conditions outlined in this approval.

I wish you well with your study.

Yours sincerely

PETER GREENWELL
Regional Director of Education
Southern Metropolitan Region

This original has been printed in black and white to reduce cost and environmental impact.





**Department of Education and
Early Childhood Development**

**Office for Government School Education
Barwon South Western Region**

BSW007397

5A Little Ryrie Street
(PO Box 2086)
Geelong, Victoria 3220
Telephone: +61 3 5225 1000
Facsimile: +61 3 5225 1099

Susan Long
Kensington LPO
PO Box 1370
KENSINGTON 3031

Dear Susan

Thank you for your letter of 24 July 2008 outlining a study you will be undertaking titled *'To what degree does informal assessment count when reporting to parents about learning achievement in Science?'*.

I acknowledge that you have received the appropriate approvals from the Department of Education & Early Childhood Development in Melbourne to conduct this study.

I wish you well with this research project.

Yours sincerely

Grant Rau
**Regional Director
Barwon-South Western Region**

50/7/08

This original has been printed in black and white to reduce cost and environmental impact.



Appendix 9 – Research Approval from Catholic Education Offices

Letters from Archdiocese of Melbourne and Dioceses of Sale, Sandhurst and Ballarat.



Diocesan Catholic Education Office

A Ministry of Service, Leadership and Accountability

29 January 2008

Ms Susan Long
74 Tennyson Street
KENSINGTON VIC 3031

Dear Ms Long

Thank you for your letter dated 13 May 2008 in which you have requested permission to conduct research in relation to report writing practices of teachers of science in secondary schools in the Diocese of Sale.

I am happy for you to approach the secondary schools in this diocese. It is important that you understand that the final permission for you to undertake this work rests with the Principal.

This approval in principle is subject to the attached *Research - Standard Conditions*. Should you require further information please contact Mr Peter Ryan at this Office, email pryan@ceo.sale.catholic.edu.au or phone 5622 6603.

With best wishes

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Peter Ryan'.

Peter Ryan
DIRECTOR OF CATHOLIC EDUCATION
DIOCESE OF SALE



16 May 2008

Ms Susan Long
74 Tennyson Street
KENSINGTON 3031

PO Box 576 Ballarat Victoria 3353

Telephone: (03) 5337 7135

Facsimile: (03) 5331 5166

www.ceo.ballt.catholic.edu.au

ABN: 45 121 091 506

Dear Susan

I am in receipt of your letter of May 13 requesting the participation of Catholic secondary colleges in the Diocese of Ballarat in your research project: *To what degree does informal assessment count when reporting to parents about learning achievement in Science?* I understand the research will be conducted under the supervision of Prof David Treagust from the Science and Mathematics Education Centre at Curtin University of Technology in Perth.

I am pleased to advise that on the basis of the information you have provided I grant permission for you to approach the Principals of our Secondary Colleges seeking their involvement in the project. You will understand that many requests are made to our schools and I am conscious of the time commitment required by participants. With this in mind I stress that the decision as to whether or not to participate rests with the individual Principals.

The following general conditions apply to all persons/institutions conducting research in schools in the Diocese of Ballarat:

- 1) The decision as to whether or not your research can proceed in a school rests with the School Principal. For each school in which you wish to do the research, you must obtain approval directly from the School Principal.
- 2) You are requested to provide the Principal with an outline of your research proposal and the likely time that participation in the research project will demand. A copy of notification of approval from the appropriate Ethics Committee should also be provided to the participating school.
- 3) A Criminal Record check is necessary for all researchers visiting schools and should be shown to the Principal before starting research in each school.
- 4) No student is to participate in your research study unless s/he is willing to do so and permission is given by a parent/guardian. Sufficient information must be provided to enable a parent/guardian to make an informed decision. Permission to participate would generally be indicated by means of a consent form, signed by a parent/guardian and returned to the school. You are requested to liaise with the School Principal to assist in the writing of a letter to parents/guardians regarding information about the research project.
- 5) You are requested to forward a list of schools/participants to this office.
- 6) Any substantive modifications to the research proposal or additional research involving use of the data collected will require a further research approval submission to this office.
- 5) You are requested to forward a list of schools/participants to this office.
- 6) Any substantive modifications to the research proposal or additional research involving use of the data collected will require a further research approval submission to this office.
- 7) Data relating to individual students or schools is to remain confidential.
- 8) I will look forward to receiving a copy of the research findings and would expect that you offer such results to participating schools.

I take this opportunity to wish you well with your research project.

Yours sincerely

Larry Burn
DIRECTOR





19 May 2008

Ms Susan Long
74 Tennyson Street
KENSINGTON VIC 3031

longs@alloysius.vic.edu.au

Re: *Research Proposal: To what degree does informal assessment count when reporting to parents about learning achievement in Science.*

I am pleased to advise that, in relation to schools in the Diocese of Sandhurst, your research proposal is approved subject to the following standard conditions.

1. The decision as to whether or not research can proceed in a school rests with the Principal of that school. You will therefore need to obtain approval directly from the Principal of each school that you wish to involve.
2. You should provide each Principal with an outline of your research proposal and indicate what will be asked of the school. A copy of this letter of approval and a copy of the notification of approval from the relevant Ethics Committee should also be included.
3. No student is to participate in research study unless s/he is willing to do so and informed consent is given by a parent/guardian.
4. You should provide a list of schools which have agreed to participate in the research project to the Professional Development section of this Office.
5. Any substantive modifications to the research proposal, or additional research using the data collected, will require a further research proposal approval submission to this Office.
6. Data relating to individuals or schools is to remain confidential.
7. Since participating schools have an interest in the research findings, you should discuss with each Principal ways in which the results of the study could be made available for the benefit of the school community.
8. At the conclusion of the study a copy of the research findings should be forwarded to

Catholic Education Office, Sandhurst
Attn: Senior Education Officer, Human Resources

I wish you well with your research study. If you have any queries concerning this matter, please contact Rosemary Rasmussen (Tel: 5445 9902) of this Office.

Yours sincerely,

Kevin Lawlor
Senior Education Officer, Human Resources

Lr

Email: director@ceo.sand.catholic.edu.au

Website: www.ceo.sand.catholic.edu.au

ABN: 94 493 967 364



Catholic Education Office
Archdiocese of Melbourne

In reply please quote:

GE08/0009
1404

14 May 2008

Ms S Long
74 Tennyson Street
KENSINGTON VIC 3031

Dear Ms Long

I am writing with regard to your research application of 13 May 2008 concerning your forthcoming project titled *To what degree does formal assessment count when reporting to parents about learning achievement in Science*. You have asked approval to approach Catholic schools in the Archdiocese of Melbourne, as you wish to survey Science teachers.

I am pleased to advise that your research proposal is approved in principle subject to the following standard conditions.

1. The decision as to whether or not research can proceed in a school rests with the school's principal. So you will need to obtain approval directly from the principal of each school that you wish to involve.
2. You should provide each principal with an outline of your research proposal and indicate what will be asked of the school. A copy of this letter of approval, and a copy of notification of approval from the university's Ethics Committee, should also be provided.
3. You should provide the names of schools which agree to participate in the research project to the Knowledge Management Unit of this Office.
4. Any substantial modifications to the research proposal, or additional research involving use of the data collected, will require a further research approval submission to this Office.
5. Data relating to individuals or schools are to remain confidential.
6. Since participating schools have an interest in research findings, you should consider ways in which the results of the study could be made available for the benefit of the school communities.

1 of 2

7. At the conclusion of the study, a copy or summary of the research findings should be forwarded to this Office. It would be appreciated if you could submit your report in an **electronic format** using the email address provided below.

I wish you well with your research study. If you have any queries concerning this matter, please contact Mr Mark McCarthy of this Office.

The email address is <km@ceo.melb.catholic.edu.au>.

Yours sincerely



Terri Hopkins
ACTING ASSISTANT DIRECTOR
POLICY AND GOVERNANCE

Appendix 10 – Research Information and Informed Consent Documents

Information and Informed Consent forms for the Questionnaire and the Process Tracing task phases of the study.



Professor David Treagust (Principal Researcher)
Science and Mathematics Education Centre
Curtin University of Technology
GPO Box U1987
Perth WA 6845
Phone: (08) 9266 7924
Fax: (08) 9266 2503

Ms Susan Long (Graduate student)
ph: (03) 93764468
susan.long@postgrad.curtin.edu.au

“To what degree does informal assessment count when reporting to parents about learning achievement in Science?”

You have indicated that you may be willing to participate in a more in-depth study of the ways that teachers use the formal and informal assessment information that they may have collected over the semester. The following information may help you to decide if you wish to take part in this component of the research project.

What will you be asked to do?

Should you agree to participate, you would be asked to write report comments of up to 700 characters (four to five sentences) for seven fictitious students. While you write the comments you will be asked to “think aloud” and these comments will be recorded on audio tape for later study.

You will be asked to write your report comments into a computer program. You will be able to select comments from a comment databank provided for you, although you are also welcome to compose your own comments without using the databank.

After you have finished the task you will take part in a short interview to clarify your comments and reflect on the way you prepared the comments.

There will be no time limit on the task but it should take between 10 minutes and 30 minutes to complete. The interview may also range from 10 minutes to 20 minutes. This task and interview will be completed at a place and time that is convenient for you.

How will your confidentiality be protected?

We intend to protect your anonymity and the confidentiality of your responses to the fullest possible extent, within the limits of the law. Your name and contact details will be kept in a separate, password-protected computer file from any data that you supply. This will only be able to be linked to your responses by the researcher, for example, in order to know where we should send your interview transcript for checking. A digital recording of your voice will be transcribed into and following checking for accuracy they will be destroyed.

In the final report, you will be referred to by a pseudonym. We will remove any references to personal information that might allow someone to guess your identity; however, you should note that as the number of people we seek to interview is very small, it is possible that

someone may still be able to identify you. The data will be kept securely in the Science and Mathematics Education Centre for five years from the date of publication, before being destroyed.

How will you receive feedback?

Once the thesis arising from this research has been completed, a summary of the findings can be sent to you.

What if you change your mind?

Your participation in this study is completely voluntary. Should you wish to withdraw at any stage, or to withdraw any unprocessed data you have supplied, you are free to do so.

How do you agree to participate?

If you would like to participate, please indicate that you have read and understood this information by signing the accompanying consent form.

Where can you get further information?

Should you require any further information, or have any concerns, please do not hesitate to contact either of the researchers on the numbers given above. Should you have any concerns about the conduct of the project, you are welcome to contact the Principal Researcher at the Science and Mathematics Education Centre on (08) 9266 7924, or Fax: (08) 9266 2503 or, alternatively to contact the Secretary, Human Research Ethics Committee, Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth WA 6845.

Investigators:

Professor David Treagust (Principal Researcher)
Science and Mathematics Education Centre
Curtin University of Technology
Phone: (08) 9266 7924
Fax: (08) 9266 2503

Ms Susan Long (Graduate student)
ph: (03) 93764468
susan.long@postgrad.curtin.edu.au

I _____ agree to participate in (name of participant)

a research project entitled: "To what degree does informal assessment count when reporting to parents about learning achievement in Science?"

The researcher has discussed the tasks that I have been invited to complete with me. I understand that my voice will be recorded as part of the collection of data. I have had the opportunity to ask questions about this research and I have received answers that are satisfactory to me. I have read and kept a copy of the Information Sheet about this task and understand the general purposes, risks and methods of this research.

I agree to take part because:

1. I know what I am expected to do and what this involves.
2. The risks, inconvenience and discomfort of participating in the study have been explained to me.
3. All my questions have been answered to my satisfaction.
4. I understand that the project may not be of direct benefit to me.
5. I can withdraw from the study at any time, without providing a reason, and any unprocessed data that I supplied will be destroyed.
6. I am satisfied with the explanation given in relation to the project as it affects me and my consent is freely given.
7. I can obtain a summary of the results of the study when it is completed.
8. I understand that my personal information will be kept private, and that any information I supply will be stored for a period of five years and then destroyed
9. I agree to the publication of results from this study provided details that might identify me are removed.

Signed by the participant: _____ Date: _____

Should you have any concerns about the conduct of the project, you are welcome to contact the Principal Researcher at the Science and Mathematics Education Centre on (08) 9266 7924, or Fax: (08) 9266 2503 or, alternatively to contact the Secretary, Human Research Ethics Committee, Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth WA 6845.

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“To what degree does informal assessment count when reporting to parents about learning achievement in Science?”

You have indicated that you may be willing to participate in an interview about your experiences as a beginning teacher, especially those relating to the way that you are learning how to assess student work and prepare information about student learning for students as feedback and for their parents. The following information may help you to decide if you wish to take part in this component of the research project.

What will you be asked to do?

Should you agree to participate, you would be asked to respond to eight questions about your preparation for teaching and your experiences as a beginning teacher. You will not be asked to identify your place of employment, nor will you be asked to comment specifically about any students.

This interview task will be completed at a place and time that is convenient for you.

How will your confidentiality be protected?

We intend to protect your anonymity and the confidentiality of your responses to the fullest possible extent, within the limits of the law. Your name and contact details and any data that you supply will be kept in a password-protected computer file. Once your responses are received they will be compiled with other responses and will not be associated with a particular respondent in data analysis or in the final report. Your exact words may be quoted but authorship will not be specified.

In the final report, you will be referred to by a pseudonym. We will remove any references to personal information that might allow someone to guess your identity; however, you should note that as the number of people we seek to interview is very small, it is possible that someone who knows that you have participated in the study may still be able to identify you. The data will be kept securely in the Science and Mathematics Education Centre for five years from the date of publication, before being destroyed.

How will you receive feedback?

Once the thesis arising from this research has been completed, a summary of the findings can be sent to you.

What if you change your mind?

Your participation in this study is completely voluntary. Should you wish to withdraw at any stage, or to withdraw any unprocessed data you have supplied, you are free to do so.

How do you agree to participate?

If you would like to participate, please indicate that you have read and understood this information by signing the accompanying consent form.

Where can you get further information?

Should you require any further information, or have any concerns, please do not hesitate to contact either of the researchers on the numbers given above. Should you have any concerns about the conduct of the project, you are welcome to contact the Principal Researcher at the Science and Mathematics Education Centre on (08) 9266 7924, or Fax: (08) 9266 2503 or, alternatively to contact the Secretary, Human Research Ethics Committee, Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth WA 6845.

Investigators:

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I _____ agree to participate in (name of participant)
a research project entitled: "To what degree does informal assessment count when
reporting to parents about learning achievement in Science?"

The researcher has discussed the tasks that I have been invited to complete with me. I
have had the opportunity to ask questions about this research and I have received
answers that are satisfactory to me. I have read and kept a copy of the Information
Sheet about this task and understand the general purposes, risks and methods of this
research.

I agree to take part because:

1. I know what I am expected to do and what this involves.
2. The risks, inconvenience and discomfort of participating in the study have been explained to me.
3. All my questions have been answered to my satisfaction.
4. I understand that the project may not be of direct benefit to me.
5. I can withdraw from the study at any time, without providing a reason, and any unprocessed data that I supplied will be destroyed.
6. I am satisfied with the explanation given in relation to the project as it affects me and my consent is freely given.
7. I can obtain a summary of the results of the study when it is completed.
8. I understand that my personal information will be kept private, and that any information I supply will be stored for a period of five years and then destroyed
9. I agree to the publication of results from this study provided details that might identify me are removed.

Signed by the participant: _____ Date: _____

Should you have any concerns about the conduct of the project, you are welcome to contact the Principal Researcher at the Science and Mathematics Education Centre on (08) 9266 7924, or Fax: (08) 9266 2503 or, alternatively to contact the Secretary, Human Research Ethics Committee, Office of Research & Development, Curtin University of Technology, GPO Box U1987, Perth WA 6845.

Appendix 11 – Statistics for Chapter 4

Appendix 11a - A Spearman rank order correlation coefficient for the relationship between the tendency to often or always record additional information from formal assessment tasks and (a) gender, (b) teaching experience, and (c) aspects of the school environment that the respondent teaches in.

Correlation between recording written notes and school and teacher context

Control Variables			Do you record written notes	Teacher experience	School type	Teaching levels	Respondent gender
-none ^a	Do you record written notes	Correlation	1.000	.012	.123	-.179	-.151
		Significance (2-tailed)	.	.906	.227	.077	.137
		df	0	96	96	96	96
	Teacher experience	Correlation		1.000	.058	.208	.019
		Significance (2-tailed)		.	.570	.040	.852
		df		0	96	96	96
	School type	Correlation			1.000	.087	.058
		Significance (2-tailed)			.	.392	.571
		df			0	96	96
	Teaching levels	Correlation				1.000	.124
		Significance (2-tailed)				.	.225
		df				0	96
	Respondent gender	Correlation					1.000
		Significance (2-tailed)					.
		df					0
	School type & Teaching levels & Respondent gender	Do you record written notes	Correlation	1.000	.045		
			Significance (2-tailed)	.	.664		
			df	0	93		
Teacher experience		Correlation	.045	1.000			
		Significance (2-tailed)	.664	.			
		df	93	0			

a. Cells contain zero-order (Pearson) correlations.

Appendix 11b - Internal consistency reliability for items in the Knowing Students and Collecting Evidence categories.

Knowing Students scale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.761	.763	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I know students standard of work	16.79	3.436	.602	.533	.693
I can recall the usual standard of work	16.87	3.534	.635	.540	.677
I refer to my knowledge when reporting	16.58	4.038	.493	.273	.731
I know if work is better or worse	16.64	4.316	.504	.417	.729
I know if a student improves	16.59	4.641	.442	.379	.748

Keeping Evidence scale.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.464	.463	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I use marks as evidence of improvement	7.87	1.560	.258	.068	.413
I need to keep records as evidence	7.91	1.424	.280	.082	.376
I keep notes to justify	7.96	1.256	.324	.105	.295

Crosstabulation between respondents stated behaviour of keeping informal records from formal assessment and the score on the collecting evidence attitude scale.

		Tendency to keep informal records			
		Occasionally/never	Always/often	Total	
Classification of strong or moderate affiliation to collecting evidence	Strongly associated	Count	4	24	28
		Expected Count	3.7	24.3	28.0
		% within Classification	14.3%	85.7%	100.0%
		% within recode make record	30.8%	28.2%	28.6%
		% of Total	4.1%	24.5%	28.6%
	Moderately associated	Count	6	57	63
		Expected Count	8.4	54.6	63.0
		% within Classification	9.5%	90.5%	100.0%
		% within recode make record	46.2%	67.1%	64.3%
		% of Total	6.1%	58.2%	64.3%
	Weak or no association	Count	3	4	7
		Expected Count	.9	6.1	7.0
% within Classification		42.9%	57.1%	100.0%	
% within recode make record		23.1%	4.7%	7.1%	
% of Total		3.1%	4.1%	7.1%	
Total		Count	13	85	98
		% of Total	13.3%	86.7%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.119 ^a	2	.047
Likelihood Ratio	4.561	2	.102
Linear-by-Linear Association	.899	1	.343
N of Valid Cases	98		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .93.

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Phi	.250			.047
	Cramer's V	.250			.047
	Contingency Coefficient	.242			.047
Interval by Interval	Pearson's R	-.096	.127	-.948	.346 ^c
Ordinal by Ordinal	Spearman Correlation	-.075	.123	-.737	.463 ^c
N of Valid Cases		98			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Appendix 11c. - Correlation coefficients between the attitude categories and context factors that were investigated to identify any association between school types, experience of the teacher, whether they are assessing in science to VELs or gender of the teacher.

		Classification of responses for knowledge	Classification of strong or moderate affiliation to collecting evidence	Teaching sector	Respondent gender	EXPVELS	teacher experience	Context	recode of keeping comments
Spearman's rho	Classification of responses for knowledge	1.000	.353**	.079	.013	-.161	-.101	.044	.050
	Coefficient								
	Sig. (2-tailed)		.000	.445	.900	.115	.328	.677	.627
	N	97	97	97	97	97	96	93	96
Spearman's rho	Classification of strong or moderate affiliation to collecting evidence		1.000	-.273**	-.065	.163	-.067	-.039	.014
	Coefficient								
	Sig. (2-tailed)			.007	.525	.108	.512	.706	.895
	N		98	98	98	98	97	94	97

Chi-Square tests for association between Collecting Evidence attitude and context.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.119 ^a	2	.047
Likelihood Ratio	4.561	2	.102
Linear-by-Linear Association	.899	1	.343
N of Valid Cases	98		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .93.

Appendix 11d - Cross-tabulation of degree of association with Collecting Evidence attitude by teaching sector.

		Teaching Sector				
		Government	Systemic Catholic	Independent	Total	
Classification of strong or moderate affiliation to collecting evidence	Strongly associated	Count	5	15	8	28
		Expected Count	10.9	11.4	5.7	28.0
		% within Classification	17.9%	53.6%	28.6%	100.0%
		% within Sector	13.2%	37.5%	40.0%	28.6%
		% of Total	5.1%	15.3%	8.2%	28.6%
	Moderately associated	Count	29	22	12	63
		Expected Count	24.4	25.7	12.9	63.0
		% within Classification	46.0%	34.9%	19.0%	100.0%
		% within Sector	76.3%	55.0%	60.0%	64.3%
		% of Total	29.6%	22.4%	12.2%	64.3%
	Weak or no association	Count	4	3	0	7
		Expected Count	2.7	2.9	1.4	7.0
		% within Classification	57.1%	42.9%	.0%	100.0%
		% within Sector	10.5%	7.5%	.0%	7.1%
		% of Total	4.1%	3.1%	.0%	7.1%
Total	Count	38	40	20	98	
	Expected Count	38.0	40.0	20.0	98.0	
	% within Sector	100.0%	100.0%	100.0%	100.0%	
	% of Total	38.8%	40.8%	20.4%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.684 ^a	4	.070
Likelihood Ratio	10.612	4	.031
Linear-by-Linear Association	6.854	1	.009
N of Valid Cases	98		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.43.

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Phi	.298			.070
	Cramer's V	.210			.070
	Contingency Coefficient	.285			.070
Interval by Interval	Pearson's R	-.266	.084	-2.702	.008 ^c
Ordinal by Ordinal	Spearman Correlation	-.273	.086	-2.777	.007 ^c
N of Valid Cases		98			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Appendix 11e - Cross-tabulation of degree of association with Collecting Evidence attitude and keeping records of student feedback.

		Frequency of keeping feedback			
		Never/rarely	Often/always	Total	
Classification of strong or moderate affiliation to collecting evidence	Strongly associated	Count	16	11	27
		Expected Count	16.7	10.3	27.0
		% within Classification of strong or moderate affiliation to collecting evidence	59.3%	40.7%	100.0%
		% within recode of keeping comments	26.7%	29.7%	27.8%
	% of Total	16.5%	11.3%	27.8%	
	Moderately associated	Count	41	22	63
		Expected Count	39.0	24.0	63.0
		% within Classification of strong or moderate affiliation to collecting evidence	65.1%	34.9%	100.0%
		% within recode of keeping comments	68.3%	59.5%	64.9%
	% of Total	42.3%	22.7%	64.9%	
	Weak or no association	Count	3	4	7
		Expected Count	4.3	2.7	7.0
% within Classification of strong or moderate affiliation to collecting evidence		42.9%	57.1%	100.0%	
% within recode of keeping comments		5.0%	10.8%	7.2%	
% of Total	3.1%	4.1%	7.2%		
Total	Count	60	37	97	
	Expected Count	60.0	37.0	97.0	
	% of Total	61.9%	38.1%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.425 ^a	2	.490
Likelihood Ratio	1.389	2	.499
Linear-by-Linear Association	.056	1	.814
N of Valid Cases	97		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.67.

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Nominal by Nominal	Phi	.121			.490
	Cramer's V	.121			.490
	Contingency Coefficient	.120			.490
Interval by Interval	Pearson's R	.024	.105	.234	.815 ^c
Ordinal by Ordinal	Spearman Correlation	.014	.105	.132	.895 ^c
N of Valid Cases		97			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.425 ^a	2	.490
Likelihood Ratio	1.389	2	.499
Linear-by-Linear Association	.056	1	.814
N of Valid Cases	97		

c. Based on normal approximation.

Appendix 11f - The total item correlations from the internal reliability validity calculation for Confrontational attitude to parent-teacher conferencing.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.722	.720	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PT are confrontational	12.37	5.173	.610	.411	.617
I feel I am betraying students	12.66	6.768	.386	.316	.709
I have to justify myself	11.76	5.079	.577	.488	.634
Make student accountable for effort	10.53	6.835	.427	.539	.696
I can make students accountable for behaviour	10.49	6.878	.433	.550	.694

Appendix 11g - The total item correlations from the internal reliability validity calculation for Collaborative attitude to parent-teacher conferencing.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.767	.770	6

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Parents give me information about welfare	21.98	3.515	.388	.314	.765
I can reassure parents	21.86	3.360	.517	.346	.731
I can inform about how student interacts with others	21.94	3.512	.548	.369	.727
Great to tell parents students work hard	21.65	3.157	.565	.515	.718
parent give information about coping	21.86	3.381	.475	.340	.742
Great to tell parents students do their best	21.65	3.115	.590	.525	.711

Appendix 12 – Composed Comments produced in the Process Tracing Task

Student Reports (Mark Pad)

Respondent Name: respondent 9

Student: Bloggs, Zebo Subject: Science

Comment: Zebo's test results indicate an excellent understanding of the concepts taught this semester. During practical work, Zebo always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently. Practical reports were accurately recorded and always written in the correct format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. Zebo has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard. Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity.

Select standard comments for report...

Select a Category: Assignments, Effort, Field Work, Prac Reports, Practical Work, Topic tests

Standard Comment Selection:

- <gn>'s test results indicate an excellent understanding of the concepts taught this semester.
- <gn>'s test results indicate a very good understanding of the concepts taught this semester.
- <gn>'s test results indicate a good understanding of the concepts taught this semester.
- <gn>'s test results indicate a satisfactory understanding of the concepts taught this semester.
- <gn>'s test results indicate a poor understanding of the concepts taught this semester.
- During practical work, <gn> always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently.

Analysis highlight colour Key:

- Assignments (Yellow)
- Effort (Green)
- Field work (Cyan)
- Prac reports (Magenta)

Student 1: Zebo Bloggs

Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity.</p> <p>A1 Zebo has been studious and interested in class activities, completing a range of tasks on time and to the highest standard. E2 Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. F1 Practical reports were accurately recorded</p>	<p>Zebo's test results indicate a very good understanding of the concepts taught this semester. T2 Practical reports were consistently written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment. P2 Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed</p>	<p>This semester Year 9 Purple have completed an number of activities. Zebo has been studious and interested in class activities, completing a range of tasks on time and to the highest standard. E2 A highlight of his semester would be the Eco systems fieldwork. Truly a great effort. Zebo was able to demonstrate that he could collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. F1mod Practical reports were accurately recorded and always written in the correct</p>	<p>Zebo's test results indicate a very good understanding of the concepts taught this semester. T2 Practical reports were accurately recorded and always written in the correct format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. P1 During practical work, Zebo demonstrated a responsible and</p>

<p>and always written in the correct format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. P1 During practical work, Zebo demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Zebo's test results indicate an excellent understanding of the concepts taught this semester. T1</p>	<p>diagrams and transect graphs. F1 The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1</p>	<p>format, tense and voice. Zebo was able to analyse the data obtained and integrate the information with theoretical knowledge to make inferences and draw reasoned conclusions. P1 During practical work, Zebo always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently. S1 Zebo's test results indicate an excellent understanding of the concepts taught this semester. T1 The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1</p>	<p>methodical approach to each task and handled chemicals and equipment safely. S2 Zebo worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2</p>
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Student 2: Bop Smith

Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1 Bop has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard. E1 Bop worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2 Practical reports were consistently</p>	<p>Bop's test results indicate a satisfactory understanding of the concepts taught this semester. T4 Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 During practical work, Bop demonstrated a responsible and methodical approach to each task and handled chemicals and equipment</p>	<p>This semester Year 9 Purple have completed an number of activities. Bop has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard. E1 Bop worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2 Practical reports were generally recorded accurately and presented</p>	<p>Bop has been persistent and dedicated, showing a positive approach to each new topic. Bop has consistently produced work of a good standard. E3 Bop's test results indicate a satisfactory understanding of the concepts taught this semester. T4 During practical work, Bop always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently. S1 Practical reports were generally recorded accurately and presented</p>

written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment. P2During practical work, Bop always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently. S1Bop's test results indicate a satisfactory understanding of the concepts taught this semester. T4	safely. S2 Bop has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard. E1 Bop worked collaboratively in a small group while gathering field data. Observations from field work were accurately described with detailed diagrams and transect graphs. F1The written elements of the ecology and recycling tasks were informative and displayed with attention to detail. A2	in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3During practical work, Bop always followed instructions meticulously, was focussed on task completion and used chemicals and equipment competently. S1Bop's test results indicate a good understanding of the concepts taught this semester. T3The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1	in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 Bop worked effectively with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph. F3 The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1
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Student 3: Yort Jones

Respondent 1	Respondent 2	Respondent 3	Respondent 4
The written elements of the ecology and recycling tasks were informative and displayed with attention to detail. A2 Yort has been persistent and dedicated, showing a positive approach to each new topic. Yort has consistently produced work of a good standard. E3Yort worked with a small group while gathering field data. Some observations from field work were recorded with diagrams and a	Yort's test results indicate an excellent understanding of the concepts taught this semester. T1 Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 Yort did not work collaboratively during field work and did	This semester Year 9 Purple have completed an number of activities. Yort has been studious and interested in class activities, completing a range of tasks on time and to the highest standard. E2 Yort did not work collaboratively during field work and so could not follow the guidelines for the task. This resulted in few observations from field work being recorded and the transect graph was	Yort has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard. E1 Yort's test results indicate a very good understanding of the concepts taught this semester. T2 Yort did not work collaboratively during field work and did not follow the guidelines for the task. Few observations from field work were recorded and

<p>transect graph was attempted. F4</p> <p>Practical reports were consistently written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment. P2</p> <p>During practical work, Yort demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2</p> <p>Yort's test results indicate a very good understanding of the concepts taught this semester. T2</p>	<p>not follow the guidelines for the task. Few observations from field work were recorded and the transect graph was not completed. F3</p> <p>The written elements of the ecology and recycling tasks included relevant information but did not provide adequate detail to satisfy each of the criteria used to assess this work. A4</p> <p>Yort has been studious and completing a range of tasks on time but should make more effort in the presentation of assessed work. E2mod</p>	<p>not completed. F5mod</p> <p>Practical reports were consistently written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment. P2</p> <p>During practical work, Yort usually demonstrated safe and reliable behaviour and showed competence with chemicals and equipment. S3</p> <p>Yort's test results indicate an excellent understanding of the concepts taught this semester. T1</p> <p>The written elements of the ecology and recycling tasks were informative and displayed with attention to detail. A2</p>	<p>the transect graph was not completed. F5</p> <p>The written elements of the ecology and recycling tasks contained the required information organised into a logical format with a good standard of presentation. A3</p> <p>During practical work, Yort usually demonstrated safe and reliable behaviour and showed competence with chemicals and equipment. S3</p> <p>Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3</p>
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Student 4: Meba Meggs

Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks contained some relevant information but little effort was evident in the presentation. A5</p> <p>Meba has worked inconsistently throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due. E5</p> <p>Meba worked effectively with a small group while gathering field data. Observations from</p>	<p>Meba's test results indicate a poor understanding of the concepts taught this semester. T5</p> <p>Practical reports adequately record the procedure followed and the results were well presented, however, the discussion and conclusion portions of the report were not completed in detail and did not show an understanding of the</p>	<p>This semester Year 9 Purple have completed an number of activities. Meba has worked inconsistently at best this semester, putting satisfactory effort into some class activities and homework tasks, but failing to submit some tasks on time. E4</p> <p>Meba worked effectively with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph. F3</p> <p>Practical reports</p>	<p>Meba has worked inconsistently throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due. E5</p> <p>Meba did not work collaboratively during field work and did not follow the guidelines for the task. Few observations from field work were recorded and the transect graph was</p>

<p>field work were described with some diagrams and a simple transect graph. F3</p> <p>Practical reports adequately record the procedure followed and the results were well presented, however, the discussion and conclusion portions of the report were not completed in detail and did not show an understanding of the purpose of the task. P4</p> <p>During practical work, Meba showed an appropriate awareness of safety but was inattentive at times and consequently, needed to seek clarification about the tasks. S4</p> <p>Meba's test results indicate a satisfactory understanding of the concepts taught this semester. T4</p>	<p>purpose of the task. P4</p> <p>Meba has worked inconsistently throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due. E5</p> <p>Meba worked with a small group while gathering field data. Some observations from field work were recorded with diagrams and a transect graph was attempted. F4</p>	<p>adequately record the procedure followed and the results were well presented, however, the discussion and conclusion portions of the report were not completed in detail and did not show an understanding of the purpose of the task. P4</p> <p>During practical work, Meba usually demonstrated safe and reliable behaviour and showed competence with chemicals and equipment. S3</p> <p>Meba's test results indicate a poor understanding of the concepts taught this semester. T5</p> <p>The written elements of the ecology and recycling tasks contained some relevant information but little effort was evident in the presentation. A5</p>	<p>not completed. F5</p> <p>During practical work, Meba failed to use time and resources constructively and often needed to be reminded about the importance of safety in the laboratory. S5</p> <p>Practical Reports were incomplete and insufficiently detailed. While some results were recorded, the discussion and conclusion portions of the reports submitted were cursory and did not show an understanding of the task. P5</p> <p>Meba's test results indicate a poor understanding of the concepts taught this semester. T5</p>
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Student 5: Wod Johnson

Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks contained some relevant information but little effort was evident in the presentation. A5</p> <p>Wod has worked inconsistently this semester, putting satisfactory effort into many class activities and homework tasks, but failing to submit some tasks on time. E4</p> <p>Wod worked effectively with a small group while gathering field data. Observations from field</p>	<p>Wod has worked inconsistently throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due. E5</p> <p>Wod's test results indicate a poor understanding of the concepts taught this semester. T5</p> <p>During practical work, Wod failed to use time and resources constructively and often needed to be reminded about the importance of safety in</p>	<p>This semester Year 9 Purple have completed an number of activities.</p> <p>Wod has worked inconsistently at best throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due. E5</p> <p>Wod worked with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph.</p>	<p>Wod has worked inconsistently throughout the semester, putting little effort into class activities and homework tasks and failing to submit some tasks when due. E5</p> <p>Wod did not work collaboratively during field work and did not follow the guidelines for the task. Few observations from field work were recorded and the transect graph was not completed. F5</p> <p>Wod's test results indicate a</p>

<p>work were described with some diagrams and a simple transect graph. F3 Practical Reports were incomplete and insufficiently detailed. While some results were recorded, the discussion and conclusion portions of the reports submitted were cursory and did not show an understanding of the task. P5 During practical work, Wod failed to use time and resources constructively and often needed to be reminded about the importance of safety in the laboratory. S5 Wod's test results indicate a poor understanding of the concepts taught this semester. T5</p>	<p>the laboratory. S5 Practical Reports were incomplete and insufficiently detailed. While some results were recorded, the discussion and conclusion portions of the reports submitted were cursory and did not show an understanding of the task. P5 Wod worked with a small group while gathering field data. Some observations from field work were recorded with diagrams and a transect graph was attempted. F4 The written elements of the ecology and recycling tasks included relevant information but did not provide adequate detail to satisfy each of the criteria used to assess this work. A4</p>	<p>F3/4 Practical Reports were incomplete and insufficiently detailed. While some results were recorded, the discussion and conclusion portions of the reports submitted were cursory and did not show an understanding of the task. P5 During practical work, Wod failed to use time and resources constructively and often needed to be reminded about the importance of safety in the laboratory. S5 Wod's test results indicate a poor understanding of the concepts taught this semester. T5 The written elements of the ecology and recycling tasks contained the required information organised into a logical format with a satisfactory standard of presentation. A3 mod</p>	<p>poor understanding of the concepts taught this semester. T5 During practical work, Wod failed to use time and resources constructively and often needed to be reminded about the importance of safety in the laboratory. S5 Practical Reports were incomplete and insufficiently detailed. While some results were recorded, the discussion and conclusion portions of the reports submitted were cursory and did not show an understanding of the task. P5</p>
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Student 6: Fon West

Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks were informative and displayed with attention to detail. A2 Fon has been persistent and dedicated, showing a positive approach to each new topic. Fon has consistently produced work of a good standard. E3 Fon worked collaboratively in a small group while gathering field data. Observations from</p>	<p>Fon's test results indicate a satisfactory understanding of the concepts taught this semester. T4 During practical work, Fon showed an appropriate awareness of safety but often needed to seek clarification about the tasks. S4 Practical reports were generally recorded accurately and presented in the correct format. Discussions included</p>	<p>This semester Year 9 Purple have completed an number of activities. Fon has been persistent and dedicated, showing a positive approach to each new topic. Fon has consistently produced work of a good standard. E3 A highlight for Fon would have been the fieldwork activity. Fon worked collaboratively in a small group while gathering field data. Observations from</p>	<p>The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1 Fon has been persistent and dedicated, showing a positive approach to each new topic. Fon has consistently produced work of a good standard. E3 Fon worked collaboratively in a small</p>

<p>field work were accurately recorded with neat diagrams and transect graphs. F4 Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 During practical work, Fon demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Fon's test results indicate a satisfactory understanding of the concepts taught this semester. T4</p>	<p>sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 Fon worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2 The written elements of the ecology and recycling tasks were informative and displayed with attention to detail. A2 Fon has been persistent and dedicated, showing a positive approach to each new topic. E3</p>	<p>field work were accurately described with detailed diagrams and transect graphs. Well done! F1 Practical reports were consistently written in the correct format, tense and voice, with detailed discussions and appropriate conclusions demonstrating a good understanding of the purpose of the experiment. P2 During practical work, Fon usually demonstrated safe and reliable behaviour and showed competence with chemicals and equipment. S2 Fon's test results indicate a good understanding of the concepts taught this semester. T3 The written elements of the ecology and recycling tasks were informative, well-researched and presented with creativity. A1</p>	<p>group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2 Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 During practical work, Fon showed an appropriate awareness of safety but was inattentive at times and consequently, needed to seek clarification about the tasks. S4 Fon's test results indicate a satisfactory understanding of the concepts taught this semester. T4</p>
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Student 7: Gar Whozit

Respondent 1	Respondent 2	Respondent 3	Respondent 4
<p>The written elements of the ecology and recycling tasks contained the required information organised into a logical format with a good standard of presentation. A3 Gar has been persistent and dedicated, showing a positive approach to each new topic. Gar has</p>	<p>Gar's test results indicate a good understanding of the concepts taught this semester. T3 During practical work, Gar demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Practical reports</p>	<p>This semester Year 9 Purple have completed an number of activities. Gar has been an enthusiastic member of the class often asking key questions, participating fully in all activities and completing all tasks on time and to the highest standard. E1 Gar worked collaboratively in</p>	<p>The written elements of the ecology and recycling tasks included relevant information but did not provide adequate detail to satisfy each of the criteria used to assess this work. A4 Gar has worked inconsistently this semester, putting satisfactory effort into many class activities and</p>

<p>consistently produced work of a good standard.</p> <p>E3 Gar worked collaboratively in a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs.</p> <p>F2 Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 Gar worked effectively with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph.</p> <p>F3 The written elements of the ecology and recycling tasks contained the required information organised into a logical format with a good standard of presentation.</p> <p>A3 Gar has been persistent and dedicated, showing a positive approach to each new topic but should ensure all homework is completed when set. E3</p>	<p>were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 Gar worked effectively with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph.</p> <p>F3 The written elements of the ecology and recycling tasks contained the required information organised into a logical format with a good standard of presentation.</p> <p>A3 Gar has been persistent and dedicated, showing a positive approach to each new topic but should ensure all homework is completed when set. E3</p>	<p>a small group while gathering field data. Observations from field work were accurately recorded with neat diagrams and transect graphs. F2 Practical reports were generally recorded accurately and presented in the correct format. Discussions included sufficient detail and the conclusions drawn were valid and showed some understanding of the purpose of the experiment. P3 During practical work, Gar demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Gar's test results indicate a good understanding of the concepts taught this semester. T3 The written elements of the ecology and recycling tasks were informative and displayed with attention to detail. A2</p>	<p>homework tasks, but failing to submit some tasks on time. E4 Gar worked with a small group while gathering field data. Some observations from field work were recorded with diagrams and a transect graph was attempted. F4 Practical reports adequately record the procedure followed and the results were well presented, however, the discussion and conclusion portions of the report were not completed in detail and did not show an understanding of the purpose of the task. P4 During practical work, Gar demonstrated a responsible and methodical approach to each task and handled chemicals and equipment safely. S2 Gar's test results indicate a satisfactory understanding of the concepts taught this semester. T4</p>
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Appendix 13 - Cross tabulation of Categories of Scores and Comment Ranking

An investigation of the relationships between marks as percentages and the allocated comment rank is shown below. Association is demonstrated with the scatter plot included as Figure 5.2. Further statistical analysis is provided in text.

		Averaged Test marks Crosstabulation							
		Percentage for topic tests							
		27	47	54	56	61	86	87	Total
Highest comment	Count						2	2	4
	%						50.0%	50.0%	25.0%
2 nd Highest comment	Count						2	2	4
	%						50.0%	50.0%	14.3%
Middle comment	Count			1	1	3			5
	%			25.0%	25.0%	75.0%			17.9%
2 nd Lowest comment	Count		1	3	3	1			8
	%		25.0%	75.0%	75.0%	25.0%			28.6%
Lowest comment	Count	4	3						7
	%	100.0%	75.0%						25.0%
Total	Count	4	4	4	4	4	4	4	28
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Cells containing zero were omitted.

		Assignment Crosstabulation							
		percentage for assignment							
		0	55	75	80	90	93	95	Total
Highest comment	Count					2	3	3	8
	%					50.0%	75.0%	75.0%	28.6%
2 nd Highest comment	Count			1	3	2		1	7
	%			25.0%	25.0%	50.0%		25.0%	25.0%
Middle comment	Count		2	2	1				3
	%		50.0%	50.0%	25.0%				10.7%
2 nd Lowest comment - Modified	Count		1						1
	%		25.0%						3.6%
2 nd Lowest comment	Count		1	1					2
	%		25.0%	25.0%					7.1%
Lowest comment	Count	3							5
	%	75.0%							17.9%
No comment	Count	1					1		2
	%	25.0%					25.0%		7.1%
Total	Count	4	4	4	4	4	4	4	28
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Practical work averaged score Crosstabulation

		Percentage score for practical work							Total
		20	45	70 (2)	70 (7)	74	83	91	
Highest comment	Count							3	3
	%							75.0%	10.7%
2 nd Highest comment	Count				1	1	2	1	5
	%				25.0%	25.0%	50.0%	25.0%	17.9%
Middle comment	Count			3	3	3	2		11
	%			75.0%	75.0%	75.0%	50.0%		39.3%
2 nd Lowest comment	Count		3	1					4
	%		75.0%	25.0%					14.3%
Lowest comment	Count	4	1						5
	%	100.0%	25.0%						17.9%
Total	Count	4	4	4	4	4	4	4	28
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Fieldwork score Crosstabulation

		percentage score for fieldwork						Total
		44	56	72	86	90	94	
Highest comment	Count				1	1	2	4
	%				25.0%	25.0%	50.0%	14.3%
2 nd Highest comment - modified	Count						1	1
	%						25.0%	3.6%
2 nd Highest comment	Count			2	2	3	1	8
	%			50.0%	50.0%	75.0%	25.0%	28.6%
middle comment	Count	1	3	1	1			6
	%	25.0%	37.5%	25.0%	25.0%			21.4%
2 nd lowest comment - modified	Count		1					1
	%		12.5%					3.6%
2 nd lowest comment	Count	1	2	1				4
	%	25.0%	50.0%	25.0%				14.3%
Lowest comment modified	Count	1						1
	%	25.0%						3.6%
Lowest comment	Count	1	2					3
	%	25.0%	50.0%					10.7%
Total	Count	4	8	4	4	4	4	28
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix 14 – Transcripts of Process Tracing Task and Respondents

Interview

This appendix includes the content analysis process followed for Respondent 3 only. Only one is included to minimise the length of this Appendix. The entire transcripts for all respondents follows the example of the content analysis followed.

Content Analysis Respondent 3 (Greyed out text is direct quote from database.)

Report 1 -Student 1(Zebo)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
¹ I think it needs an introduction ² I obviously don't know the kid well enough to do that ³ I don't even know ... I'll pretend they're year 9 ⁴ this information is not how I would usually use it. ⁵ I would work it out as a percentage so ⁶ I could cross compare the prac reports with the equivalency of the tests 'cause at the moment they are not cross comparable and ⁷ I would expect the ecosystems field work would be much more in depth than perhaps the test ⁸ requiring practical skills as well ⁹ the highlight of the semester would be the ecosystems fieldwork ¹⁰ .a great effort ¹¹ .works collaboratively in small groups ¹² .accurately described in diagrams (changed wording) ¹³ . with (changed wording) ¹⁴ .always accurately recorded (changed wording) ¹⁵ .overall, I'd agree with that ¹⁶ .can't see why not ¹⁷ .topic tests ... indicate excellent understanding (referring to scores?) ¹⁸ .the collage (?) (misreading ecology assignment?) ¹⁹ .the written elements ... assignments (interpreting the	¹ I think it needs an introduction ² I obviously don't know the kid well enough to do that ³ I don't even know ... I'll pretend they're year 9 ⁴ this information is not how I would usually use it. ⁵ I would work it out as a percentage so ⁶ I could cross compare the prac reports with the equivalency of the tests 'cause at the moment they are not cross comparable and ⁷ I would expect the ecosystems field work would be much more in depth than perhaps the test ⁸ requiring practical skills as well ⁹ the highlight of the semester would be the ecosystems fieldwork ¹⁰ .a great effort ¹¹ .works collaboratively in small groups ¹² .accurately described in diagrams (changed wording) ¹³ . with (changed wording) ¹⁴ .always accurately recorded (changed wording) ¹⁵ .overall, I'd agree with that ¹⁶ .can't see why not ¹⁷ .topic tests ... indicate excellent understanding ¹⁹ .the written elements ...	<u>Structuring / personalising the report:</u> ¹ I think it needs an introduction ⁴ this information is not how I would usually use it. ⁵ I would work it out as a percentage so ⁶ I could cross compare the prac reports with the equivalency of the tests 'cause at the moment they are not cross comparable and ¹¹ .works collaboratively in small groups ¹² .accurately described in diagrams (changed wording) ¹³ . with (changed wording) ¹⁴ .always accurately recorded (changed wording) ²⁵ .What I'm going to do is the bits that I modified at the beginning as an introduction I'm going to marry into the next student ²⁸ .then I might find and insert what's appropriate ²⁹ .I'll probably try and choose a format that is similar to what I have (describing approach to subsequent reports) <u>Issues with the Process tracing task:</u> ² I obviously don't know the kid well enough to do that ³ I don't even know ... I'll pretend they're year 9 ¹⁹ .the written elements ... assignments (interpreting the comment) ²⁰ .there isn't any sign of them ²¹ .perhaps the recycling poster could have been the assignment

<p>comment)</p> <p>²⁰there isn't any sign of them</p> <p>²¹perhaps the recycling poster could have been the assignment</p> <p>²²oh here we go</p> <p>²⁴high scores</p> <p>²⁵What I'm going to do is the bits that I modified at the beginning as an introduction I'm going to marry into the next student</p> <p>²⁶from there I'll... uh</p> <p>²⁷I can't comment</p> <p>²⁸then I might find and insert what's appropriate</p> <p>²⁹I'll probably try and choose a format that is similar to what I have (describing approach to subsequent reports)</p>	<p>assignments</p> <p>²⁰there isn't any sign of them</p> <p>²¹perhaps the recycling poster could have been the assignment</p> <p>²⁴high scores</p> <p>²⁵What I'm going to do is the bits that I modified at the beginning as an introduction I'm going to marry into the next student</p> <p>²⁸then I might find and insert what's appropriate</p> <p>²⁹I'll probably try and choose a format that is similar to what I have (describing approach to subsequent reports)</p>	<p><u>Interpretation of the assessment information:</u></p> <p>⁷I would expect the ecosystems field work would be much more in depth than perhaps the test ⁸requiring practical skills as well</p> <p><u>Interpreting the results for the report</u></p> <p>⁹the highlight of the semester would be the ecosystems fieldwork</p> <p>¹⁰a great effort</p> <p><u>Emotional character to comments:</u></p> <p>⁹the highlight of the semester would be the ecosystems fieldwork</p> <p>¹⁰a great effort</p> <p><u>Checking on the logic/ appropriateness of comment given:</u></p> <p>¹⁵overall, I'd agree with that</p> <p>¹⁶can't see why not</p> <p><u>Referring to grades/marks:</u></p> <p>topic tests ... indicate excellent understanding</p> <p>²⁴high scores</p> <p><u>Reflecting on Effort:</u></p> <p>¹⁰a great effort</p>
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Report 2 -Student 5 (Wod)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>³⁰from what I remember...</p> <p>³¹always aggravated so Wod is a quite agitated individual,</p> <p>³²puts satisfactory effort into the...</p> <p>³³no ... I think he fits into the bottom of the rank.</p> <p>³⁴That makes sense</p> <p>³⁵OK that's not too bad</p> <p>³⁶the tricky thing is that a kid that is misbehaving, then performs well in practical activities when they get to the outdoor probably tells me that they are an outdoorsy sort of kid</p> <p>³⁷so they're not stupid.</p> <p>³⁸They pick up on information but they prefer to be outside doing it ..</p> <p>³⁹but I have to be consistent with my initial statement</p>	<p>³⁰from what I remember...</p> <p>³¹always aggravated so Wod is a quite agitated individual,</p> <p>³²puts satisfactory effort into the...</p> <p>³³no ... I think he fits into the bottom of the rank.</p> <p>³⁴That makes sense</p> <p>³⁵OK that's not too bad</p> <p>³⁶the tricky thing is that a kid that is misbehaving, then performs well in practical activities when they get to the outdoor probably tells me that they are an outdoorsy sort of kid</p> <p>³⁷so they're not stupid.</p> <p>³⁸They pick up on information but they prefer</p>	<p><u>Trying to recall informal information:</u></p> <p>³⁰from what I remember...</p> <p><u>Inferring personal characteristics of the student from notes:</u></p> <p>³¹always aggravated so Wod is a quite agitated individual,</p> <p>³⁶the tricky thing is that a kid that is misbehaving, then performs well in practical activities when they get to the outdoor probably tells me that they are an outdoorsy sort of kid</p> <p>³⁷so they're not stupid.</p> <p>³⁸They pick up on information but they prefer to be outside doing it ..</p> <p>⁵⁰obviously can't be trusted and</p> <p>⁵¹is quite agitated in class</p> <p>⁵⁴quite a few issues</p> <p>⁵⁶evidently can't be trusted and</p>

<p>⁴⁰I would like to think that I would choose the third from the top</p> <p>⁴¹now truth of the matter is that they may have been able to achieve that but the</p> <p>⁴²likelihood would have been that it didn't work ...</p> <p>⁴³So that's the key word for me ...</p> <p>⁴⁴I'm going to choose the second last from the bottom</p> <p>⁴⁵I might modify...</p> <p>⁴⁶I'll have a blend of them both ...</p> <p>⁴⁷I'll state the third from the top but I'm going to take out 'worked</p> <p>⁴⁸Because to be honest</p> <p>⁴⁹that was one of his best performances in the ecosystem field work</p> <p>⁵⁰obviously can't be trusted and</p> <p>⁵¹is quite agitated in class</p> <p>⁵²really.... not submitted</p> <p>⁵³8 out of 20.</p> <p>⁵⁴quite a few issues</p> <p>⁵⁵I think they'd have to be bottom of the list if not next to bottom of the list.</p> <p>⁵⁶evidently can't be trusted and</p> <p>⁵⁷is not doing safe practice</p> <p>⁵⁸yes ... I'll agree with that</p> <p>⁵⁹disappointing at best...</p> <p>⁶⁰result in good understanding ...</p> <p>⁶¹no satisfactory understanding. I don't think</p> <p>⁶²poor understanding ... um ... right</p> <p>⁶³going back to</p> <p>⁶⁴I don't think so ... um ...</p> <p>⁶⁵11 out of 20 wasn't that bad of an effort though.</p> <p>⁶⁶I think ...</p> <p>⁶⁷needs to be modified</p> <p>⁶⁸now the issue I've got is, that this is very wordy and</p> <p>⁶⁹if Wod is, as he is in science as he is in English, LOTE and whatever other subjects he might take, his literacy may be quite low.</p> <p>⁷⁰If you understand...</p> <p>⁷¹the parents, their literacy might be quite low also,</p> <p>⁷²so a big flowery report is going</p>	<p>to be outside doing it ..</p> <p>³⁹but I have to be consistent with my initial statement</p> <p>⁴⁰I would like to think that I would choose the third from the top</p> <p>⁴¹now truth of the matter is that they may have been able to achieve that but the</p> <p>⁴²likelihood would have been that it didn't work ...</p> <p>⁴³So that's the key word for me ...</p> <p>⁴⁴I'm going to choose the second last from the bottom</p> <p>⁴⁵I might modify...</p> <p>⁴⁶I'll have a blend of them both ...</p> <p>⁴⁷I'll state the third from the top but I'm going to take out 'worked</p> <p>⁴⁸Because to be honest</p> <p>⁴⁹that was one of his best performances in the ecosystem field work</p> <p>⁵⁰obviously can't be trusted and</p> <p>⁵¹is quite agitated in class</p> <p>⁵²really.... not submitted</p> <p>⁵³8 out of 20.</p> <p>⁵⁴quite a few issues</p> <p>⁵⁵I think they'd have to be bottom of the list if not next to bottom of the list.</p> <p>⁵⁶evidently can't be trusted and</p> <p>⁵⁷is not doing safe practice</p> <p>⁵⁸yes ... I'll agree with that</p> <p>⁵⁹disappointing at best...</p> <p>⁶⁰result in good understanding ...</p> <p>⁶¹no satisfactory understanding. I don't think</p> <p>⁶²poor understanding ... um ... right</p> <p>⁶⁴I don't think so ... um ...</p> <p>⁶⁵11 out of 20 wasn't that bad of an effort though.</p> <p>⁶⁶I think ...</p> <p>⁶⁷needs to be modified</p> <p>⁶⁸now the issue I've got is, that this is very wordy and</p>	<p><u>Inferring characteristics of the student's performance from scores:</u></p> <p>³²puts satisfactory effort into the...</p> <p>⁴¹now truth of the matter is that they may have been able to achieve that but the</p> <p>⁴²likelihood would have been that it didn't work ...</p> <p>⁴⁹that was one of his best performances in the ecosystem field work</p> <p><u>Categorising student from scores:</u></p> <p>³³no ... I think he fits into the bottom of the rank.</p> <p>³⁵OK that's not too bad</p> <p>⁵²really.... not submitted</p> <p>⁵³8 out of 20.</p> <p>⁶⁰result in good understanding ...</p> <p>⁶¹no satisfactory understanding. I don't think ⁶²poor understanding ... um ... right</p> <p>⁶⁵11 out of 20 wasn't that bad of an effort though.</p> <p><u>Categorising student from notes and inferences:</u></p> <p>⁴⁴I'm going to choose the second last from the bottom</p> <p>⁴⁵I might modify...</p> <p>⁴⁶I'll have a blend of them both ...</p> <p>⁴⁷I'll state the third from the top but I'm going to take out 'worked</p> <p>⁴⁹that was one of his best performances in the ecosystem field work</p> <p>⁵⁵I think they'd have to be bottom of the list if not next to bottom of the list.</p> <p>⁵⁷is not doing safe practice</p> <p><u>Checking on logic of decision:</u></p> <p>³⁴That makes sense</p> <p>⁵⁸yes ... I'll agree with that</p> <p>⁶⁴I don't think so ... um ...</p> <p><u>Checking on consistency of decision:</u></p> <p>³⁹but I have to be consistent with my initial statement</p> <p>⁴³So that's the key word for me ...</p> <p><u>Personal response to student or checking on personal motivation (?)for decision of judgement about decision:</u></p>
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<p>to be wasted energy, in my opinion... um ... just because the parents can't read it. ⁷³If the parents don't respect it. ⁷⁴They're not going to actually give you anything ... ⁷⁵it's unlikely you're going to get useful feedback or ⁷⁶useful response from that student. ⁷⁷I suppose useful isn't quite the right word</p>	<p>⁶⁹if Wod is, as he is in science as he is in English, LOTE and whatever other subjects he might take, his literacy may be quite low. ⁷⁰If you understand... ⁷¹the parents, their literacy might be quite low also, ⁷²so a big flowery report is going to be wasted energy, in my opinion... um ... just because the parents can't read it. ⁷³If the parents don't respect it. ⁷⁴They're not going to actually give you anything ... ⁷⁵it's unlikely you're going to get useful feedback ⁷⁶useful response from that student. ⁷⁷I suppose useful isn't quite the right word</p>	<p>⁴⁰I would like to think that I would choose the third from the top ⁴⁸Because to be honest ⁴⁹that was one of his best performances in the ecosystem field work ⁵⁹disappointing at best... ⁶⁸now the issue I've got is, that this is very wordy and ⁶I think ... ⁶⁸now the issue I've got is, that this is very wordy and ⁷⁰If you understand... ⁷⁷I suppose useful isn't quite the right word</p> <p><u>Modifying comments to individualise report:</u> ⁴⁵I might modify... ⁴⁶I'll have a blend of them both ... ⁴⁷I'll state the third from the top but I'm going to take out 'worked ⁶⁷needs to be modified</p> <p><u>Appropriateness of comment for report context:</u> ⁶⁸now the issue I've got is, that this is very wordy and ⁶⁹if Wod is, as he is in science as he is in English, LOTE and whatever other subjects he might take, his literacy may be quite low. ⁷¹the parents, their literacy might be quite low also, ⁷²so a big flowery report is going to be wasted energy, in my opinion... um ... just because the parents can't read it. ⁷³If the parents don't respect it. ⁷⁴They're not going to actually give you anything ... ⁷⁵it's unlikely you're going to get useful feedback ⁷⁶useful response from that student.</p> <p><u>Inference about parents:</u> ⁷¹the parents, their literacy might be quite low also, ⁷²so a big flowery report is going to be wasted energy, in my opinion... um ... just because the parents can't read it. ⁷³If the parents don't respect it. ⁷⁴They're not going to actually give you anything ...</p>
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		⁷⁵ .it's unlikely you're going to get useful feedback
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Report 3 - Student 2 (Bop)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>⁷⁸.Yort ... Zebo ... Yort ...</p> <p>⁷⁹.Student 2 was... I think student 2 was the one with issues with the father</p> <p>⁸⁰.I don't know if that was student 2 or student 3.</p> <p>⁸¹.who else was there</p> <p>⁸².Fom was the nice kid</p> <p>⁸³. who really has low self esteem</p> <p>⁸⁴.really wants constant reassurance.</p> <p>⁸⁵.I might go to Bop next just because that a little more straight forward.</p> <p>⁸⁶.year 9 purple ... ah ... we'll go with that ... um ... ⁸⁷.presentation of written work is meticulous ... etc.</p> <p>⁸⁸. I believe this student is an enthusiastic member of class</p> <p>⁸⁹.I don't think...</p> <p>⁹⁰.it's not appropriate to mention</p> <p>⁹¹. you might mention ... um ...</p> <p>⁹².when talking about the light test. I might state ⁹³.a great effort, in light of current circumstances</p> <p>⁹⁴.works cooperatively</p> <p>⁹⁵.from what I can gather satisfactory</p> <p>⁹⁶.so it would be one of the bottom 2 or 3, sorry top 2 or 3 ...</p> <p>⁹⁷.blah blah</p> <p>⁹⁸.75% equivalent ... um ... alright,</p> <p>⁹⁹.I'm going to go with 3rd one down</p> <p>¹⁰⁰.Good, no issues with that.</p> <p>¹⁰¹.Good kid</p> <p>¹⁰².that's it a good understanding</p> <p>¹⁰³.ah, the test result ... test results ... ah the test result ... test results ...</p> <p>¹⁰⁴.a great effort considering ... a great effort considering ...</p> <p>¹⁰⁵.the test results were a great effort considering ... yep [typing]</p>	<p>⁷⁹.Student 2 was... I think student 2 was the one with issues with the father</p> <p>⁸⁰.I don't know if that was student 2 or student 3.</p> <p>⁸¹.who else was there</p> <p>⁸².Fom was the nice kid</p> <p>⁸³. who really has low self esteem</p> <p>⁸⁴.really wants constant reassurance.</p> <p>⁸⁵.I might go to Bop next just because that a little more straight forward.</p> <p>⁸⁶.year 9 purple ... ah ... we'll go with that ... um ...</p> <p>⁸⁸. I believe this student is an enthusiastic member of class</p> <p>⁸⁹.I don't think...</p> <p>⁹⁰.it's not appropriate to mention</p> <p>⁹¹. you might mention ... um ...</p> <p>⁹².when talking about the light test. I might state ⁹³.a great effort, in light of current circumstances</p> <p>⁹⁴.works cooperatively</p> <p>⁹⁵.from what I can gather satisfactory</p> <p>⁹⁶.so it would be one of the bottom 2 or 3, sorry top 2 or 3 ...</p> <p>⁹⁸.75% equivalent ... um ... alright,</p> <p>⁹⁹.I'm going to go with 3rd one down</p> <p>¹⁰⁰.Good, no issues with that.</p> <p>¹⁰¹.Good kid</p> <p>¹⁰².that's it a good understanding</p> <p>¹⁰⁴.a great effort considering ... a great effort considering ...</p> <p>¹⁰⁵.the test results were a great effort considering</p>	<p><u>Recalling/Difficulty recalling informal information:</u></p> <p>⁷⁹.Student 2 was... I think student 2 was the one with issues with the father</p> <p>⁸⁰.I don't know if that was student 2 or student 3.</p> <p>⁸¹.who else was there</p> <p>⁸².Fom was the nice kid</p> <p>⁸³. who really has low self esteem</p> <p><u>Inference about student from notes:</u></p> <p>⁸³. who really has low self esteem</p> <p>⁸⁸. I believe this student is an enthusiastic member of class</p> <p>⁹⁴.works cooperatively</p> <p>¹⁰¹.Good kid</p> <p>¹¹³.I'd state now those results, yes, you demonstrated a good understanding but I know you can do better</p> <p><u>Inference about student from oral information:</u></p> <p>⁹³.a great effort, in light of current circumstances</p> <p>⁹⁴.works cooperatively</p> <p>¹⁰⁴.a great effort considering ... a great effort considering ...</p> <p>¹⁰⁵.the test results were a great effort considering</p> <p>¹⁰⁶.these results are not necessarily an accurate representation.</p> <p>¹⁰⁷.He could have done better</p> <p>¹⁰⁸.had he been or she been there all the time like 100% attendance because obviously spent time away to visit or attend hospitals</p> <p><u>Categorising from scores:</u></p> <p>⁹⁵.from what I can gather satisfactory</p> <p>⁹⁶.so it would be one of the bottom 2 or 3, sorry top 2 or 3 ...</p> <p>⁹⁸.75% equivalent ... um ... alright,</p> <p>⁹⁹.I'm going to go with 3rd one down</p> <p>¹⁰².that's it a good understanding</p> <p>^{120, 121}.19 out of 20 ... that is much better than that</p>

<p>...</p> <p>¹⁰⁶these results are not necessarily an accurate representation.</p> <p>¹⁰⁷He could have done better</p> <p>¹⁰⁸had he been or she been there all the time like 100% attendance because obviously spent time away to visit or attend hospitals</p> <p>¹⁰⁹I think the way I'd give feedback there is, isn't the report.</p> <p>¹¹⁰I'd take that student aside,</p> <p>¹¹¹assuming I knew them well enough,</p> <p>¹¹²good enough for the report</p> <p>¹¹³I'd state now those results, yes, you demonstrated a good understanding but I know you can do better</p> <p>¹¹⁴so that's me providing feedback</p> <p>¹¹⁵and at a parent teacher interview I would probably make that more personable as well,</p> <p>¹¹⁶so I don't think it is appropriate to write that comment in the report</p> <p>¹¹⁷it is too formal</p> <p>¹¹⁸it is also a little bit um ... what would you call it ... ah, not arrogant looking down upon ... condescending</p> <p>¹¹⁹I don't think ... that's not appropriate.</p> <p>¹²⁰19 out of 20 ...</p> <p>¹²¹that is much better than that</p>	<p>¹⁰⁶these results are not necessarily an accurate representation.</p> <p>¹⁰⁷He could have done better</p> <p>¹⁰⁸had he been or she been there all the time like 100% attendance because obviously spent time away to visit or attend hospitals</p> <p>¹⁰⁹I think the way I'd give feedback there is, isn't the report.</p> <p>¹¹⁰I'd take that student aside,</p> <p>¹¹¹assuming I knew them well enough,</p> <p>¹¹²good enough for the report</p> <p>¹¹³I'd state now those results, yes, you demonstrated a good understanding but I know you can do better</p> <p>¹¹⁴so that's me providing feedback</p> <p>¹¹⁵and at a parent teacher interview I would probably make that more personable as well,</p> <p>¹¹⁶so I don't think it is appropriate to write that comment in the report</p> <p>¹¹⁷it is too formal</p> <p>¹¹⁸it is also a little bit um ... what would you call it ... ah, not arrogant looking down upon ... condescending</p> <p>¹¹⁹I don't think ... that's not appropriate.</p> <p>¹²⁰19 out of 20 ...</p> <p>¹²¹that is much better than that</p>	<p><u>Comment on the difficulty of the process tracing task:</u></p> <p>⁸⁵I might go to Bop next just because that a little more straight forward.</p> <p><u>Modifying report:</u></p> <p>⁸⁶year 9 purple ... ah ... we'll go with that ... um ...</p> <p><u>Checking the logic of comments written:</u></p> <p>⁸⁹I don't think...</p> <p>¹⁰⁰Good, no issues with that.</p> <p><u>Personal response to the reporting:</u></p> <p>¹⁰⁹I think the way I'd give feedback there is, isn't the report.</p> <p>¹¹⁴so that's me providing feedback</p> <p>¹¹⁵and at a parent teacher interview I would probably make that more personable as well,</p> <p>¹¹⁸it is also a little bit um ... what would you call it ... ah, not arrogant looking down upon ... condescending</p> <p><u>Checking the appropriateness of comments written:</u></p> <p>⁹⁰it's not appropriate to mention</p> <p>⁹¹you might mention ... um ...</p> <p>¹⁰⁹I think the way I'd give feedback there is, isn't the report.</p> <p>¹¹⁰I'd take that student aside,</p> <p>¹¹¹assuming I knew them well enough,</p> <p>¹¹²good enough for the report</p> <p>¹¹³I'd state now those results, yes, you demonstrated a good understanding but I know you can do better</p> <p>¹¹⁴so that's me providing feedback</p> <p>¹¹⁵and at a parent teacher interview I would probably make that more personable as well,</p> <p>¹¹⁶so I don't think it is appropriate to write that comment in the report</p> <p>¹¹⁷it is too formal</p> <p>¹¹⁸it is also a little bit um ... what would you call it ... ah, not arrogant looking down upon ... condescending</p> <p>¹¹⁹I don't think ... that's not appropriate.</p> <p><u>Reference to Parents:</u></p> <p>¹¹⁵and at a parent teacher interview I would probably make that more personable as well</p> <p>^{118, 119}it is also a little bit um ... what would you call it ... ah, not arrogant</p>
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		looking down upon ... condescending I don't think ... that's not appropriate.
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Report 4 - Student 3 (Yort)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>¹²²effort ... past ... participated in a number of activities ...</p> <p>¹²³probably should infer something to do with this subject is science</p> <p>¹²⁴not so ... effort 93%.</p> <p>¹²⁵84 and 85% is pretty good though. 17 out of 20, 16 out of 20. Field work is a bit light on though.</p> <p>¹²⁶Either the poster or the field work is probably the presentation let down.</p> <p>¹²⁷I think .. second off the top</p> <p>¹²⁸either couldn't work in a group or ...</p> <p>¹²⁹so then hang on. Which was the kid that? ... Fom? ...</p> <p>¹³⁰there was one kid that could not ... very intelligent but could not work in groups ...</p> <p>¹³¹ [Arrgh – expressing frustration]</p> <p>¹³²I can't remember now.</p> <p>¹³³Perhaps that was Yort.</p> <p>¹³⁴One of the kids is quite bright but can't work well in groups and that is different again to ...um... Wod because Wod is the aggravated one.</p> <p>¹³⁵Right we'll say it is Yort.</p> <p>¹³⁶now that makes sense.</p> <p>¹³⁷Field work was poorly done so</p> <p>¹³⁸did not work collaboratively</p> <p>¹³⁹Less than ... halfway</p> <p>¹⁴⁰this is unfortunate considering his wonderful effort in the tests...</p> <p>¹⁴¹ah ... ah ... that is probably not appropriate ...</p> <p>¹⁴²I think that's enough, rewording what's already been said.</p> <p>¹⁴³prac reports 16/17 out of 20.</p> <p>¹⁴⁴Middle of the ... upper and middle.</p> <p>¹⁴⁵ I can't see why although</p> <p>¹⁴⁶prac work does require some degree of working together.</p> <p>¹⁴⁷Methodical nature</p> <p>¹⁴⁸course we know that the prac</p>	<p>¹²²effort ... past ... participated in a number of activities ...</p> <p>¹²³probably should infer something to do with this subject is science</p> <p>¹²⁴not so ... effort 93%.</p> <p>¹²⁵84 and 85% is pretty good though. 17 out of 20, 16 out of 20. Field work is a bit light on though.</p> <p>¹²⁶Either the poster or the field work is probably the presentation let down.</p> <p>¹²⁷I think .. second off the top</p> <p>¹²⁸either couldn't work in a group or ...</p> <p>¹²⁹so then hang on. Which was the kid that? ... Fom? ...</p> <p>¹³⁰there was one kid that could not ... very intelligent but could not work in groups ...</p> <p>¹³¹ [Arrgh – expressing frustration]</p> <p>¹³²I can't remember now.</p> <p>¹³³Perhaps that was Yort.</p> <p>¹³⁴One of the kids is quite bright but can't work well in groups and that is different again to ...um... Wod because Wod is the aggravated one.</p> <p>¹³⁵Right we'll say it is Yort.</p> <p>¹³⁶now that makes sense.</p> <p>¹³⁷Field work was poorly done so</p> <p>¹³⁸did not work collaboratively</p> <p>¹³⁹Less than ... halfway</p> <p>¹⁴⁰this is unfortunate considering his wonderful effort in the tests...</p> <p>¹⁴¹ah ... ah ... that is probably not appropriate ...</p> <p>¹⁴²I think that's enough, rewording what's already been said.</p> <p>¹⁴³prac reports 16/17 out of 20.</p> <p>¹⁴⁴Middle of the ... upper and middle.</p> <p>¹⁴⁵ I can't see why although</p> <p>¹⁴⁶prac work does require some degree of working together.</p> <p>¹⁴⁷Methodical nature</p> <p>¹⁴⁸course we know that the prac</p>	<p><u>Effort:</u></p> <p>¹²²effort ... past ... participated in a number of activities ...</p> <p>¹²⁴not so ... effort 93%.</p> <p><u>Modifying report:</u></p> <p>¹²²effort ... past ... participated in a number of activities ...</p> <p>¹²³probably should infer something to do with this subject is science</p> <p><u>Inferences from scores:</u></p> <p>¹²⁴not so ... effort 93%.</p> <p>¹²⁵84 and 85% is pretty good though. 17 out of 20, 16 out of 20. Field work is a bit light on though.</p> <p>¹²⁶Either the poster or the field work is probably the presentation let down.</p> <p>¹²⁸either couldn't work in a group or ...</p> <p>^{137, 138}Field work was poorly done so did not work collaboratively</p> <p>¹⁴⁰this is unfortunate considering his wonderful effort in the tests...</p> <p>¹⁴⁶prac work does require some degree of working together.</p> <p>¹⁴⁷Methodical nature</p> <p><u>Inferences from informal information:</u></p> <p>¹⁴⁸course we know that the prac work relies on team work and this person can't work with somebody else.</p> <p><u>Categorising from scores:</u></p> <p>¹²⁷I think .. second off the top</p> <p>¹³⁹Less than ... halfway</p> <p>¹⁴³prac reports 16/17 out of 20.</p> <p>¹⁴⁴Middle of the ... upper and middle.</p> <p>¹⁴⁹Scores are quite good.</p> <p>¹⁵⁰I think that the scores may be supplementary to the topic</p> <p>¹⁵¹tests are excellent</p> <p>¹⁵²16 out of 20</p> <p>¹⁵⁵16 out of 20 ...</p> <p>¹⁵⁶3/4s of the way,</p> <p>¹⁵⁷I'd say that's top two</p>

<p>work relies on team work and this person can't work with somebody else.</p> <p>¹⁴⁹Scores are quite good.</p> <p>¹⁵⁰I think that the scores may be supplementary to the topic</p> <p>¹⁵¹tests are excellent</p> <p>¹⁵²16 out of 20</p> <p>¹⁵³ecology ... where's ecology ... ecosystems,</p> <p>it doesn't really talk about it much</p> <p>¹⁵⁴required information to be organised logically ... that's a strange sentence....</p> <p>¹⁵⁵16 out of 20 ...</p> <p>¹⁵⁶3/4s of the way,</p> <p>¹⁵⁷I'd say that's top two</p>	<p>¹⁴⁵ I can't see why although</p> <p>¹⁴⁶prac work does require some degree of working together.</p> <p>¹⁴⁷Methodical nature</p> <p>¹⁴⁸course we know that the prac work relies on team work and this person can't work with somebody else.</p> <p>¹⁴⁹Scores are quite good.</p> <p>¹⁵⁰I think that the scores may be supplementary to the topic</p> <p>¹⁵¹tests are excellent</p> <p>¹⁵²16 out of 20</p> <p>¹⁵³ecology ... where's ecology ... ecosystems,</p> <p>it doesn't really talk about it much</p> <p>¹⁵⁴required information to be organised logically ... that's a strange sentence....</p> <p>¹⁵⁵16 out of 20 ...</p> <p>¹⁵⁶3/4s of the way,</p> <p>¹⁵⁷I'd say that's top two</p>	<p><u>Recall of informal information:</u></p> <p>¹²⁹so then hang on. Which was the kid that? ... Fom? ...</p> <p>¹³⁰there was one kid that could not ... very intelligent but could not work in groups ...</p> <p>¹³¹ [Arrgh – expressing frustration]</p> <p>¹³²I can't remember now.</p> <p>¹³³Perhaps that was Yort.</p> <p>¹³⁴One of the kids is quite bright but can't work well in groups and that is different again to ...um...Wod because Wod is the aggravated one.</p> <p>¹³⁵Right we'll say it is Yort.</p> <p><u>Checking logic:</u></p> <p>¹³⁶now that makes sense.</p> <p>¹⁴⁵ I can't see why, although</p> <p><u>Checking appropriateness of comments:</u></p> <p>¹⁴⁰this is unfortunate considering his wonderful effort in the tests...</p> <p>¹⁴¹ah ... ah ... that is probably not appropriate ...</p> <p>¹⁴²I think that's enough, rewording what's already been said.</p> <p><u>Issues with process tracing task/information:</u></p> <p>¹⁵³ecology ... where's ecology ... ecosystems,</p> <p>it doesn't really talk about it much</p> <p>¹⁵⁴required information to be organised logically ... that's a strange sentence....</p>
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Report 5 - Student 4 (Meba)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>¹⁵⁸effort ...</p> <p>¹⁵⁹alright so we've got no poster submitted, ¹⁶⁰middle of the range ecosystems report ...</p> <p>low report ... middle report</p> <p>¹⁶¹I would suggest that perhaps Meba could spend more time attending to work</p> <p>¹⁶²oh, hang on ...</p> <p>¹⁶³at best</p> <p>¹⁶⁴some class activities</p> <p>¹⁶⁵I think that's right</p> <p>¹⁶⁶20 out of 25, I think that's</p>	<p>¹⁵⁸effort ...</p> <p>¹⁵⁹alright so we've got no poster submitted, ¹⁶⁰middle of the range ecosystems report ...</p> <p>low report ... middle report</p> <p>¹⁶¹I would suggest that perhaps Meba could spend more time attending to work</p> <p>¹⁶²oh, hang on ...</p> <p>¹⁶³at best</p> <p>¹⁶⁴some class activities</p> <p>¹⁶⁵I think that's right</p> <p>¹⁶⁶20 out of 25, I think that's</p>	<p><u>Focus on effort:</u></p> <p>¹⁵⁸effort ...</p> <p><u>Categorising from scores:</u></p> <p>¹⁵⁹alright so we've got no poster submitted, ¹⁶⁰middle of the range ecosystems report ...</p> <p>low report ... middle report</p> <p>¹⁷⁴whoo ... satisfactory? No, its not good enough</p> <p>¹⁷⁵not even submitted</p> <p><u>Inferences from scores:</u></p>

<p>middle of the range ¹⁶⁷but able to work as a team ¹⁶⁸did submit the work ¹⁶⁹that's very disappointing ¹⁷⁰I think ¹⁷¹yep ... practical work, now. ¹⁷²Meba's field work indicates he can work as part of a team. ¹⁷³I think so [?] in topic tests ... ¹⁷⁴whooh ... satisfactory? No its not good enough ¹⁷⁵not even submitted ¹⁷⁶that one's easier. ¹⁷⁷Bops been done.</p>	<p>middle of the range ¹⁶⁷but able to work as a team ¹⁶⁸did submit the work ¹⁶⁹that's very disappointing ¹⁷⁰I think ¹⁷²Meba's field work indicates he can work as part of a team. ¹⁷³I think so ¹⁷⁴whooh ... satisfactory? No, its not good enough ¹⁷⁵not even submitted ¹⁷⁶that one's easier.</p>	<p>¹⁶¹I would suggest that perhaps Meba could spend more time attending to work ¹⁶³at best ¹⁶⁴some class activities ¹⁶⁶20 out of 25, I think that's middle of the range ¹⁶⁷but able to work as a team ¹⁶⁸did submit the work ¹⁷²Meba's field work indicates he can work as part of a team. <u>Checking logic of comments:</u> ¹⁶²oh, hang on ... ¹⁶⁵I think that's right ¹⁷⁰I think ¹⁷³I think so <u>Personal response:</u> ¹⁶⁹that's very disappointing <u>Response to process tracing task:</u> ¹⁷⁶that one's easier. [this report had no notes]</p>
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Report 6 -Student 6 (Fon)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>¹⁷⁸Fon requires clarification ¹⁷⁹so low self esteem ¹⁸⁰Paste that in ¹⁸¹Effort ... ¹⁸²answers are confused and detail is mixed up is not able to correctly write ANY chemical formulas ¹⁸³alright so that's Fon ... ¹⁸⁴is a nice kid who works very hard. Persistent and dedicated ... ¹⁸⁵I'll agree with that. ¹⁸⁶field work 45 out of 50 that's brilliant! ¹⁸⁷highlight has been the field work activity ¹⁸⁸Well done! ¹⁸⁹My reason for including that information is the student has low self esteem. ¹⁹⁰They really need to have the positive behaviours that they have demonstrated reinforced ¹⁹¹and I would have made an effort to state that as I was giving back the feedback, ah sorry, the assessment</p>	<p>¹⁷⁸Fon requires clarification ¹⁷⁹so low self esteem ¹⁸¹Effort ... ¹⁸⁴is a nice kid who works very hard. Persistent and dedicated ... ¹⁸⁵I'll agree with that. ¹⁸⁶field work 45 out of 50 that's brilliant! ¹⁸⁷highlight has been the field work activity ¹⁸⁸Well done! ¹⁸⁹My reason for including that information is the student has low self esteem. ¹⁹⁰They really need to have the positive behaviours that they have demonstrated reinforced ¹⁹¹and I would have made an effort to state that as I was giving back the ... assessment ... ¹⁹²and observations during</p>	<p><u>Inference from notes:</u> ¹⁷⁸Fon requires clarification ¹⁷⁹so low self esteem ¹⁸⁴is a nice kid who works very hard. Persistent and dedicated ... ¹⁹⁹attempting to the best of her ability ... ²⁰¹before a question ²⁰⁵and I would try and reinforce the positive behaviour as far as being a little bit more autonomous. ²⁰⁶Being more autonomous in the class in <u>Effort:</u> ¹⁸¹Effort ... <u>Checking logic of comments:</u> ¹⁸⁵I'll agree with that. ¹⁹⁴I think that seems to be safe <u>Checking appropriateness of comments:</u> ²⁰⁰not for any particular good reason ²⁰²the issues and I've got ... ²⁰³I think it may not be appropriate to</p>

<p>...</p> <p>¹⁹².and observations during the time of the course work sorry during the ecosystems field work activity</p> <p>¹⁹³.Ah three-quarters of the way through I think</p> <p>¹⁹⁴.I think that seems to be safe</p> <p>¹⁹⁵.good understanding</p> <p>¹⁹⁶.18 out of 20 - that's good.</p> <p>¹⁹⁷.right up the top there.</p> <p>¹⁹⁸.Alright I'm going to add something</p> <p>¹⁹⁹.attempting to the best of her ability ...</p> <p>²⁰⁰.not for any particular good reason</p> <p>²⁰¹.before a question</p> <p>²⁰².the issues and I've got ...</p> <p>²⁰³. I think it may not be appropriate to put that in a report</p> <p>²⁰⁴.but it is definitely something I would include in a parent teacher interview</p> <p>²⁰⁵.and I would try and reinforce the positive behaviour as far as being a little bit more autonomous.</p> <p>²⁰⁶.Being more autonomous in the class in ²⁰⁷.And at parent teacher interview I think I could convey that more personally</p> <p>²⁰⁸.so I think that it just sounds a little ... again it sounds condescending to put it in a report ,</p> <p>²⁰⁹.in a written report</p>	<p>the time of the ... ecosystems field work activity</p> <p>¹⁹³. Ah three-quarters of the way through I think</p> <p>¹⁹⁴.I think that seems to be safe</p> <p>¹⁹⁵.good understanding</p> <p>¹⁹⁶.18 out of 20 - that's good.</p> <p>¹⁹⁷.right up the top there.</p> <p>¹⁹⁸.Alright I'm going to add something</p> <p>¹⁹⁹.attempting to the best of her ability ...</p> <p>²⁰⁰.not for any particular good reason</p> <p>²⁰¹.before a question</p> <p>²⁰².the issues and I've got ...</p> <p>²⁰³. I think it may not be appropriate to put that in a report</p> <p>²⁰⁴.but it is definitely something I would include in a parent teacher interview</p> <p>²⁰⁵.and I would try and reinforce the positive behaviour as far as being a little bit more autonomous.</p> <p>²⁰⁶.Being more autonomous in the class in ²⁰⁷.And at parent teacher interview I think I could convey that more personally</p> <p>²⁰⁸.so I think that it just sounds a little ... again it sounds condescending to put it in a report ,</p> <p>²⁰⁹.in a written report</p>	<p>put that in a report</p> <p>²⁰⁴.but it is definitely something I would include in a parent teacher interview</p> <p>²⁰⁸.so I think that it just sounds a little ... again it sounds condescending to put it in a report ,</p> <p>²⁰⁹.in a written report</p> <p><u>Inferences from scores:</u></p> <p>¹⁸⁶.field work 45 out of 50 that's brilliant!</p> <p><u>Categorising from scores:</u></p> <p>¹⁹⁵.good understanding</p> <p>¹⁹⁶.18 out of 20 - that's good.</p> <p>¹⁹⁷.right up the top there.</p> <p><u>Individualise report:</u></p> <p>¹⁸⁷.highlight has been the field work activity</p> <p>¹⁹⁸.Alright I'm going to add something</p> <p><u>Personal response to student:</u></p> <p>¹⁸⁶.field work 45 out of 50 that's brilliant!</p> <p>¹⁸⁷.highlight has been the field work activity</p> <p>¹⁸⁸.Well done!</p> <p>¹⁸⁹.My reason for including that information is the student has low self esteem.</p> <p>¹⁹⁰.They really need to have the positive behaviours that they have demonstrated reinforced</p> <p>¹⁹¹.and I would have made an effort to state that as I was giving back the assessment ...</p> <p>¹⁹².and observations during the time of the ecosystems field work activity</p> <p>²⁰⁵.and I would try and reinforce the positive behaviour as far as being a little bit more autonomous.</p> <p>²⁰⁶.Being more autonomous in the class in</p> <p>²⁰⁷.And at parent teacher interview I think I could convey that more personally</p> <p><u>Parents:</u></p> <p>²⁰⁴.but it is definitely something I would include in a parent teacher interview</p> <p>²⁰⁷.And at parent teacher interview I think I could convey that more personally</p> <p>²⁰⁸.so I think that it just sounds a little ... again it sounds condescending to put it in a report ,</p>
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Report 7 - Student 7 (Gar)		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>²¹⁰Effort so</p> <p>²¹¹15 out of 20, 36 out of 50, 15 out of 20 OK upper middle range.</p> <p>²¹²Arrows wrong way round ... [laughs] that's quite amusing</p> <p>²¹³effort in class is great</p> <p>²¹⁴field work is just a little bit more than just satisfactory work</p> <p>²¹⁵so obviously could work collaboratively</p> <p>²¹⁶I think that's the right one</p> <p>²¹⁷what did it say homework not done on 3 occasions</p> <p>²¹⁸OK that's not practical work though.</p> <p>²¹⁹unless it was the write up but then again it would have shown.</p> <p>²²⁰Usually demonstrated safe and reliable behaviour</p> <p>²²¹I wouldn't take issue with this boy, or girl</p> <p>²²²ah the test, 58, 70 % 54%</p> <p>²²³light test indicates excellent understanding</p> <p>²²⁴excellent understanding of the concepts taught</p> <p>²²⁵Oh no. Middle - good understanding</p> <p>²²⁶assignments were satisfactory I think.</p> <p>²²⁷now I think I'm done. OK, that's it.</p>	<p>²¹⁰Effort so</p> <p>²¹¹15 out of 20, 36 out of 50, 15 out of 20 OK upper middle range.</p> <p>²¹²Arrows wrong way round ... [laughs] that's quite amusing</p> <p>²¹³effort in class is great</p> <p>²¹⁴field work is just a little bit more than just satisfactory work</p> <p>²¹⁵so obviously could work collaboratively</p> <p>²¹⁶I think that's the right one</p> <p>²¹⁷what did it say homework not done on 3 occasions</p> <p>²¹⁸OK that's not practical work though.</p> <p>²¹⁹unless it was the write up but then again it would have shown.</p> <p>²²⁰Usually demonstrated safe and reliable behaviour</p> <p>²²¹I wouldn't take issue with this boy, or girl</p> <p>²²²ah the test, 58, 70 % 54%</p> <p>²²³light test indicates excellent understanding</p> <p>²²⁴excellent understanding of the concepts taught</p> <p>²²⁵Oh no. Middle - good understanding</p> <p>²²⁶assignments were satisfactory I think.</p>	<p><u>Effort:</u></p> <p>²¹⁰Effort so</p> <p>²¹³effort in class is great</p> <p><u>Categorising from scores:</u></p> <p>²¹¹15 out of 20, 36 out of 50, 15 out of 20 OK upper middle range.</p> <p>²¹⁴field work is just a little bit more than just satisfactory work</p> <p>²²²ah the test, 58, 70 % 54%</p> <p>²²³light test indicates excellent understanding</p> <p>²²⁴excellent understanding of the concepts taught</p> <p>²²⁵Oh no. Middle - good understanding</p> <p>²²⁶assignments were satisfactory I think.</p> <p><u>Issues with the process tracing task:</u></p> <p>²¹²Arrows wrong way round ... [laughs] that's quite amusing</p> <p><u>Inferences from scores:</u></p> <p>²¹⁵so obviously could work collaboratively</p> <p>²²⁰Usually demonstrated safe and reliable behaviour</p> <p><u>Categorising from notes:</u></p> <p>²¹⁷what did it say homework not done on 3 occasions</p> <p>²¹⁸OK that's not practical work though.</p> <p>²¹⁹unless it was the write up but then again it would have shown.</p> <p><u>Checking the logic of statements:</u></p> <p>²¹⁶I think that's the right one</p> <p><u>Personal statements:</u></p> <p>²²¹I wouldn't take issue with this boy, or girl</p>

<i>Comments prior to Process Tracing task</i>		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>²²²I can't get a hold of those can I?</p> <p>²²³Because that is background knowledge that I should read, that I should call on.</p> <p>²²⁴I realize that but it is usually something that I've got in my head.</p> <p>²²⁵Those sorts of things, if they're not recorded here.</p> <p>²²⁶Does that make sense?</p> <p>²²⁷If I've heard it once that is completely alien to the reality of me teaching those students.</p> <p>²²⁸I would still say that that knowledge is held within faculties or year level teams. ²²⁹We would still talk about these students.</p> <p>²³⁰I understand.</p> <p>²³¹OK, I can do this.</p> <p>²³²So I can go in any sequence for these categories?</p>	<p>²²²I can't get a hold of those can I?</p> <p>²²³Because that is background knowledge that I should read, that I should call on.</p> <p>²²⁴I realize that but it is usually something that I've got in my head.</p> <p>²²⁵Those sorts of things, if they're not recorded here.</p> <p>²²⁷If I've heard it once that is completely alien to the reality of me teaching those students.</p> <p>²²⁸I would still say that that knowledge is held within faculties or year level teams.</p> <p>²²⁹We would still talk about these students.</p>	<p><u>Difficulty with the process tracing design:</u></p> <p>²²²I can't get a hold of those can I?</p> <p>²²⁴I realize that but it is usually something that I've got in my head.</p> <p>²²⁵Those sorts of things, if they're not recorded here.</p> <p>²²⁷If I've heard it once that is completely alien to the reality of me teaching those students.</p> <p><u>Significance of teachers knowledge:</u></p> <p>²²³Because that is background knowledge that I should read, that I should call on.</p> <p>²²⁴I realize that but it is usually something that I've got in my head.</p> <p>²²⁵Those sorts of things, if they're not recorded here.</p> <p>²²⁷If I've heard it once that is completely alien to the reality of me teaching those students.</p> <p><u>Significance of collective knowledge within the faculty:</u></p> <p>²²⁸I would still say that that knowledge is held within faculties or year level teams.</p> <p>²²⁹We would still talk about these students.</p>

<i>Interview comments</i>		
Units of general meaning	Units of relevant meaning	Grouped by categories of meaning
<p>²³³I converted them all into percentages and I talked to that.</p> <p>²²⁴I said it is difficult to compare because ²²⁵usually I would work them out so that they could be equated to one another.</p> <p>²²⁶[what percentage would you say is excellent]. The top 5%</p> <p>²²⁷Minimal mistakes. It's close to perfect.</p> <p>²²⁸Good would be somewhere above 50%, between 50 and 60%.</p> <p>²²⁹Satisfactory would be depending on what evidence I'd</p>	<p>²³³I converted them all into percentages and I talked to that.</p> <p>²²⁴I said it is difficult to compare because ²²⁵usually I would work them out so that they could be equated to one another.</p> <p>²²⁶The top 5%</p> <p>²²⁷Minimal mistakes. It's close to perfect.</p> <p>²²⁸Good would be somewhere above 50%, between 50 and 60%.</p>	<p><u>Difficulties with the process tracing task – the way the data was structured:</u></p> <p>²³³I converted them all into percentages and I talked to that.</p> <p>²²⁴I said it is difficult to compare because ²²⁵usually I would work them out so that they could be equated to one another.</p> <p>Written notes ²⁴²Ah, to a degree. - ²⁴³It helped me remember the personalities ^{255, 256}..it gave me insights especially related to the trying to set fire to thing.</p> <p>²⁵⁷I'd actually forgotten at one stage.</p> <p>²⁵⁸I'd misplaced one of the students whose information you did give me in my</p>

<p>got from a student – ²³⁰anywhere between 40 and 50%, that might be satisfactory ²³¹depending on how they can demonstrate their competency. I could not record as far as information. ²³²Um generally less than 40% ²³³I think less than 40% demonstrates that they either cannot settle in to class, they choose not to concentrate, they choose to be disruptive or they chose to do no work and ²³⁴if that's the case then I've less sympathy for them. ²³⁵Now I did talk through those and ²³⁶I wanted to write something in the report which I chose to take out, because ²³⁷I felt that if it was in a formal report it sounded condescending and ²³⁸I stated that I would either communicate directly with the individual and say that's a fantastic effort in light of the present circumstances ²³⁹in a parent teacher interview I would describe that information. ²⁴⁰It is a more personal. ²⁴¹I've got a face and ... yeah ... my body language and facial expressions can convey more sympathy more empathy than the words on a page. ²⁴²Ah, to a degree. ²⁴³It helped me remember the personalities but as far as ²⁴⁴the information relating to 'needs to memorise chemical symbols', I didn't use any of that. ²⁴⁵Confused diverging and converging lenses - I found that subsidiary... its ... ²⁴⁶it's the values in what it, so ²⁴⁷light 49% on the test that indicates they are within that good level and ²⁴⁸depending on the effort that they've shown it says the kid is a</p>	<p>²²⁹Satisfactory would be depending on what evidence I'd got from a student – ²³⁰anywhere between 40 and 50%, that might be satisfactory ²³¹depending on how they can demonstrate their competency. I could not record as far as information. ²³²Um generally less than 40% ²³³I think less than 40% demonstrates that they either cannot settle in to class, they choose not to concentrate, they choose to be disruptive or they chose to do no work and ²³⁴if that's the case then I've less sympathy for them. ²³⁵Now I did talk through those and ²³⁶I wanted to write something in the report which I chose to take out, because ²³⁷I felt that if it was in a formal report it sounded condescending and ²³⁸I stated that I would either communicate directly with the individual and say that's a fantastic effort in light of the present circumstances ²³⁹in a parent teacher interview I would describe that information. ²⁴⁰It is a more personal. ²⁴¹I've got a face and ... yeah ... my body language and facial expressions can convey more sympathy more empathy than the words on a page. ²⁴²Ah, to a degree. ²⁴³It helped me remember the personalities ²⁴⁴the information relating to 'needs to memorise chemical symbols', I didn't use any of</p>	<p>mind ²⁶²Low percentage so that jogged my memory ... ²⁶³I was able to connect the evidence with what I was told. ²⁶⁴it's a process. ²⁶⁵I don't mind a process ²⁶⁶it was a bit more time consuming than what I realised initially</p> <p><u>Meaning of achievement descriptors – excellent, good, satisfactory, poor:</u> Excellent: ²²⁶The top 5% ²²⁷Minimal mistakes. It's close to perfect. Good: ²²⁸Good would be somewhere above 50%, between 50 and 60%. ²⁴⁷light 49% on the test that indicates they are within that good level ²⁴⁸depending on the effort that they've shown it says the kid is a really good student.</p> <p>Satisfactory: ²²⁹Satisfactory would be depending on what evidence I'd got from a student – ²³⁰anywhere between 40 and 50%, that might be satisfactory ²³¹depending on how they can demonstrate their competency. I could not record as far as information. Poor: ²³²Um generally less than 40% ²³³I think less than 40% demonstrates that they either cannot settle in to class, they choose not to concentrate, they choose to be disruptive or they chose to do no work and</p> <p><u>Inferences from grades:</u> ²³³I think less than 40% demonstrates that they either cannot settle in to class, they choose not to concentrate, they choose to be disruptive or they chose to do no work ²⁴⁷light 49% on the test that indicates they are within that good level ²⁴⁸depending on the effort that they've shown it says the kid is a really good student.</p>
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<p>really good student. Now ... um ... ²⁴⁹I think that more often than not, students ²⁵⁰understand what is going on but they mix up their words. ²⁵¹you know especially if they've been doing something practical. Um ... and ²⁵²it's a matter of their literacy, ²⁵³their explanations. ²⁵⁴They're less well versed than their actual comprehension. ²⁵⁵it gave me insights especially related to ... yes... ²⁵⁶the trying to set fire to thing. ²⁵⁷I'd actually forgotten at one stage. ²⁵⁸I'd misplaced one of the students whose information you did give me in my mind ²⁵⁹that was the individual that um was very bright but that also couldn't work in groups ²⁶⁰that worked out quite easy because good scores all through except field work ²⁶¹field work requires you to work in teams. ²⁶²Low percentage so that jogged my memory ... um ... so yes in that sense ²⁶³I was able to connect the evidence with what I was told. ²⁶⁴it's a process. No, ²⁶⁵I don't mind a process ... probably ²⁶⁶it was a bit more time consuming than what I realised initially, but now for me ²⁶⁷when I write my own report. I do write my own automatic comments and I adapt and modify them accordingly. ²⁶⁸The first few, so this many here, does take the most time and then ²⁶⁹after that, as you are more familiar with your words and how they fit together, ²⁷⁰using those automatic ones much more. And ²⁷¹know where to modify ²⁷²it just becomes much more quick over time ²⁷³some of my</p>	<p>that. ²⁴⁵Confused diverging and converging lenses - I found that subsidiary... its ... ²⁴⁶it's the values in what it, so ²⁴⁷light 49% on the test that indicates they are within that good level ²⁴⁸depending on the effort that they've shown it says the kid is a really good student. ²⁴⁹I think that more often than not, students ²⁵⁰understand what is going on but they mix up their words. ²⁵¹you know especially if they've been doing something practical. Um ... and ²⁵²it's a matter of their literacy, ²⁵³their explanations. ²⁵⁴They're less well versed than their actual comprehension. ²⁵⁵it gave me insights especially related to ... yes... ²⁵⁶the trying to set fire to thing. ²⁵⁷I'd actually forgotten at one stage. ²⁵⁸I'd misplaced one of the students whose information you did give me in my mind ²⁵⁹that was the individual that um was very bright but that also couldn't work in groups ²⁶⁰that worked out quite easy because good scores all through except field work ²⁶¹field work requires you to work in teams. ²⁶²Low percentage so that jogged my memory ... um ... so yes in that sense ²⁶³I was able to connect the evidence with what I was</p>	<p>²⁴⁹I think that more often than not, students ²⁵⁰understand what is going on but they mix up their words. ²⁵¹you know especially if they've been doing something practical. Um ... and ²⁵²it's a matter of their literacy, ²⁵³their explanations. ²⁵⁴They're less well versed than their actual comprehension. <u>Inferences from notes:</u> ²⁴³It helped me remember the personalities ²⁴⁶it's the values in what it <u>Inferences from informal comments:</u> ²⁵⁵it gave me insights especially related to ... yes... ²⁵⁶the trying to set fire to thing. ²⁵⁷I'd actually forgotten at one stage. ²⁵⁸I'd misplaced one of the students whose information you did give me in my mind ²⁵⁹that was the individual that um was very bright but that also couldn't work in groups ²⁶⁰that worked out quite easy because good scores all through except field work ²⁶¹field work requires you to work in teams. ²⁶²Low percentage so that jogged my memory ... um ... so yes in that sense ²⁶³I was able to connect the evidence with what I was told. <u>Personal response:</u> ²³⁴if that's the case then I've less sympathy for them. ²⁴³It helped me remember the personalities ²⁷⁶{responding to comment that some schools require teachers to only use a common data base} I'd hate that. It takes away the personality of the teacher. ²⁶⁹after that, as you are more familiar with your words and how they fit together ²⁷³some of my colleagues do spend ages writing every report individually <u>Strategic leniency:</u> ²³⁵Now I did talk through those and ²³⁶I wanted to write something in the report which I chose to take out, because ²³⁷I felt that if it was in a formal report it</p>
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<p>colleagues do spend ages writing every report individually</p> <p>²⁷⁴I think I can convey efficient information if I spend a lot of time on the first few and then once I understand the in and out of it, I can modify appropriately.</p> <p>²⁷⁵It's very quick once I get going.</p> <p>²⁷⁶{responding to comment that some schools require teachers to only use a common data base} I'd hate that. It takes away the personality of the teacher.</p>	<p>told.</p> <p>²⁶⁴it's a process.</p> <p>²⁶⁵I don't mind a process</p> <p>²⁶⁶it was a bit more time consuming than what I realised initially</p> <p>²⁶⁷when I write my own report. I do write my own automatic comments and I adapt and modify them accordingly.</p> <p>²⁶⁸The first few, so this many here, does take the most time and then</p> <p>²⁶⁹after that, as you are more familiar with your words and how they fit together,</p> <p>²⁷⁰using those automatic ones much more. And</p> <p>²⁷¹know where to modify</p> <p>²⁷²it just becomes much more quick over time</p> <p>²⁷³some of my colleagues do spend ages writing every report individually</p> <p>²⁷⁴I think I can convey efficient information if I spend a lot of time on the first few and then once I understand the in and out of it, I can modify appropriately.</p> <p>²⁷⁵It's very quick once I get going.</p> <p>²⁷⁶{responding to comment that some schools require teachers to only use a common data base} I'd hate that. It takes away the personality of the teacher.</p>	<p>sounded condescending and</p> <p>²³⁸I stated that I would either communicate directly with the individual and say that's a fantastic effort in light of the present circumstances</p> <p>²³⁹in a parent teacher interview I would describe that information.</p> <p>²⁴⁰It is a more personal.</p> <p><u>Appropriate comments for report:</u></p> <p>²³⁶I wanted to write something in the report which I chose to take out, because</p> <p>²³⁷I felt that if it was in a formal report it sounded condescending and</p> <p>²³⁸I stated that I would either communicate directly with the individual and say that's a fantastic effort in light of the present circumstances</p> <p><u>Parents:</u></p> <p>²³⁹in a parent teacher interview I would describe that information.</p> <p>²⁴⁰It is a more personal.</p> <p>²⁴¹I've got a face and ... yeah ...my body language and facial expressions can convey more sympathy more empathy than the words on a page.</p> <p><u>Value of the written notes:</u></p> <p>²⁴²Ah, to a degree.</p> <p>²⁴³It helped me remember the personalities but as far as</p> <p>²⁴⁴the information relating to 'needs to memorise chemical symbols', I didn't use any of that.</p> <p>²⁴⁵Confused diverging and converging lenses - I found that subsidiary... its ...</p> <p>²⁴⁶it's the values in what it, so</p> <p>²⁴⁷light 49% on the test that indicates they are within that good level and</p> <p>²⁴⁸depending on the effort that they've shown it says the kid is a really good student.</p> <p><u>Writing reports:</u></p> <p>²⁶⁷when I write my own report. I do write my own automatic comments and I adapt and modify them accordingly.</p> <p>²⁶⁸The first few, so this many here, does take the most time and then</p>
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		<p>²⁶⁹after that, as you are more familiar with your words and how they fit together,</p> <p>²⁷⁰using those automatic ones much more. And ²⁷¹know where to modify</p> <p>²⁷²it just becomes much more quick over time ²⁷³some of my colleagues do spend ages writing every report individually</p> <p>²⁷⁴I think I can convey efficient information if I spend a lot of time on the first few and then once I understand the in and out of it, I can modify appropriately.</p> <p>²⁷⁵It's very quick once I get going.</p> <p>²⁷⁶{responding to comment that some schools require teachers to only use a common data base} I'd hate that. It takes away the personality of the teacher.</p>
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Transcripts

Respondent 1

Student 1

Student 1 has pretty consistently good marks. If I just work down these sub-categories, the first one is assignments.... 'Written work was informative, well researched and presented with creativity' is fine because they were high marks for the field work ... Because the marks are high it would be reasonable to say they'd be studious and interested ... and the next one is field work. Again, the mark is high ... so the first category for that.... Pracs... again, very high marks, so 'accurately recorded and always written in the correct format and voice' ... yes, so... 'excellent understanding'. In this case, there isn't a lot of information on the card so ... the test marks indicate the highest comment.

Student 2

Presentation of work is meticulous. Marks are very middling ... She is attentive, gets it confused, asks very good questions. So if I start with assignments ... the work is meticulous, so I'll give her a very good comment ... 'Informative, well researched and presented with creativity' which is fair and reasonable. Effort? ... well, she is attentive and a good kid so, 'enthusiastic member of the class', 'asks key questions' is a good one ... And the field work mark was fairly good, so I'll give her 'accurately records', 'neat diagrams'. It says 'presentation of written work is meticulous' so that is a good one ... but she didn't get a really high mark, so the second comment is more appropriate ... Prac work is above average but not great, so 'generally recorded accurately, consistently written in the correct format tense and voice with detailed discussion and appropriate conclusions'. 'A good understanding'? ... Yes I think it's fair to say good understanding at about C / B standard ... Always followed instructions meticulously? Yes, It says she is

attentive, asks great questions, beautiful work so I'll give her a good comment for that and ...

Student 3

Very high marks across the board. Ecosystems field work no ... and needs more effort in presentation. So because the marks are overall very good I'm going to go for a fairly high comment on assignments. 16/20 marks are excellent therefore the student must make a fairly good effort but the notes say more effort in presentation so I'm going to select the third comment with 'positive approach'. Work is of a good standard as opposed to excellent standard. Because the field work mark was ... not a pass the comment 'worked with a small group while gathering field data'... 'field work was attempted' is a more moderate comment. Pracs are OK, so ... 'consistently written'... 'appropriate conclusions', 'good understanding' goes with a mark of about 16. Responsible, methodical ... very good understanding ... Yes ... Very good understanding makes sense because the marks are certainly well above an A.

Student 4

This student has no comments and a fairly poor outline of ... grades and work is not submitted. So they are all very low marks and some are not passing. Some relevant information in the field work, little effort ... definitely, it's inconsistent ... and there isn't a lot of effort if you are going to end up with low marks and failing to submit work when due is obvious because there is no marks ... on the recycling poster ... 'working in small group when gathering field data' is fine. I don't know anything about the field work but he must have done it if there is a mark recorded. 'Simple transect graph' is OK 'Adequately recorded, procedure followed'. Prac reports ... Yes ... one's not a pass and one is, so presumably ... A low mark in a prac report generally comes when the data is recorded but there isn't much or any analysis ... I suppose the comment that says the first parts are covered but didn't show an understanding of the task – because he didn't pass ... Inattentive at times ... he must have been inattentive at

times if he wasn't passing the chemistry prac report ... that is a reasonable one to pick ... 'Indicate a satisfactory understanding' ... you could even say poor, but two of them were passing, so I'd pick the fourth comment.

Student 5 Wod

Has really low marks. Things not handed in, the pracs are not passed, the field work mark is OK the poster is OK so he has handed in the assignment work but it says in the notes that he behaved dangerously in the lab, submitted unfinished work, poster was unfinished and the field work was copied. So ... You can't really comment on whether it was copied in the report and on the basis of the mark you would have to say it was a satisfactory mark ... If I start with assignments...hmm some relevant information but little effort in ... presentation so... incomplete ... unfinished taps into that. Didn't really do the work in the field work ... then you can't talk about understanding, but if it was a pass though ... and that can't really feature on a report... it is something you would deal with one on one with the student... in terms of effort, the mark is abysmal so I'd definitely pick ... and he didn't submit work... so the fifth comment 'failed to submit some tasks' would be the one to pick for that So the field work ... well he must have worked effectively with the group or he wouldn't have been able to use their work.... 28 is OK so I'd go for 'a simple transect graph' the middle one. Prac reports, well there is only one and it's not a passing mark so ... 'not completed', 'doesn't show an understanding'. 'Some results were recorded, discussions' ... I think because only one was handed in I have to use 'incomplete and insufficiently detailed' and prac work ... because of dangerous behaviour... so 'often needed to be reminded about the importance of safety' would be a key comment that I would pick that quote for and ... because the test marks were very bad ... I'd have to say 'the level of understanding was poor'.

Student 6

Has test marks ranging from 66 to 48, so just above a pass, so not great, satisfactory, prac work is pretty good, ecosystem fieldwork mark is really high and the poster mark is really high and it says that she seeks clarification about prac work and assessment tasks but there is some mix ups in understanding, so understanding will be something you would have to be careful with in the report. 'Tries really hard though' , takes up a lot of work, nice kid, lacks confidence ... the mark for the assignment work is really high so I would pick the first comment and she works really hard, she is ... trying really hard. I don't think I can say studious though with these marks and it doesn't... couldn't say asks key questions because she is clarifying the steps. I have to pick the third comment which still sounds positive – consistently produces work of a good standard'... field work mark is quite good so ... pick a good comment for that...If you were going to say 'accurate and detailed'...I'd need to check the actual task to say that. The word neat is ... a more subjective word so it is easy to pick the comment with the word neat rather than accurate and detailed.... About 75% in the prac work... that isn't really high. I would say that again the last marks that come in tend to be the ones that go for discussion and conclusion you can penalise them for specific things like graphing but I don't have any information on that so I don't know if I can, so it's a reasonable assumption to talk about understanding the purpose, so some understanding at 75%. The prac work ... 'responsible and methodical'. Well, I suppose asking questions is responsible and methodical Because she hasn't passed Chemistry I don't think I can say good. I'd have to say satisfactory.

Student 7

Has 58%, 70%, 54% average prac marks, fairly good field work ... consistent marks, the comment says always attentive, work is fine, so ... Assignment ... 'good standard of presentation'. I can't say anything more than a middle comment because I

don't have any evidence of that and 36 is about a B. In terms of effort is says that class work is fine and is always attentive so ... I could say.... I couldn't say 'high standard of work' but I could say good, so the third comment. Field work ... 36 out of 50, so.... It doesn't say anything about the accuracy.. so I could say 'neat diagrams, transect graph'. 36 is still a fairly good mark. Prac Reports ... 'some understanding of the purpose'.. the third comment is about right for that. Well if he's attentive in class and his work is fine, I can say 'safe and reliable' behaviour ... hmm ...as homework's not done ... I couldn't pick the highest comment in effort either. Test mark is fine. I wouldn't say satisfactory at 70% I'd say good.

Interview

Most Interview Comments were not recorded due to failure of the recording device.

Well I felt that the ones where there were additional notes made all the difference, you could tie the comments to the written words and it made you more confident.

In the first student all the marks appear good so it is a straightforward....

-[end]-

Respondent 2

Student 1

First student is Zebo Bloggs. 80s, 90s ... so the tests look pretty good, so if I select tests ... I guess ... they're 'A's but not really 'A+' 'sl, so I'll give that the second level. Prac reports seem pretty good ...um ... I guess, if you were going to lose a mark or 2 marks it is going to be errors in graphs or maybe lack of detail, so ... 'demonstrating a good understanding' ... yep ... Ah field work is the next one, It's a very good mark so I'll give him the top one and ... Recycling poster is

pretty good ... um ... I guess ... the ecosystems one is very good and the recycling one is ... yeh ... I'll give it the top one. Um ... Effort ... ah ... 'persistent'? ... um ... I don't know ... I don't know anything about the way they behave in class ... so ... I might just leave that one out ... and not put effort in, 'cause it's a long enough paragraph anyway.

Student 2

OK, next one is Bop Smith. OK. Marks are poor ... to OK. Right, test ... good understanding ... hmmm ... I wouldn't say good. I'd say satisfactory, and ... presentation of work is particularly ... recycling poster is fantastic. Works hard in the lab, asks great questions, seems attentive, confused (can't understand) needs to memorise the common chemical symbols Beautiful work though ... beautiful work, so she's obviously hard working. This was the student whose father was ill therefore has to... right(write?) so, you'd probably ... that would have an impact on ... maybe the test mark but I think satisfactory is still right for that. Chemistry prac report ... 14 ... pretty consistent ...um ... presentation is outstanding ... 'well presented'. OK ... well, I don't know enough about the presentation in the pracs because I haven't seen them, so ... um ... I'll save a comment like that for the assignment work because it specifically refers to that, so we'll look for what the marks indicate which is kind of average ... um ... field work ... well behaved in the lab. I could put ... um ... applied, for the second level because it says she's well behaved ... and effort? It says she asks great questions so maybe I'll give her a really good response there ... um ... field work ... OK, we want something which indicates great quality of work, although ecosystems were 43/50, still pretty consolidating (?) and ... ah ... written elements were ... it says presentation of written work was meticulous so hard to say whether or not ... um ... the content is there other than the mark ... but ... maybe this one - 'attention to detail' ... OK..

{From student 4: COPY What about Yort? What have we got in effort, because if more effort is necessary in presentation ... well I can't say 'they've failed to submit some tasks on time' because I don't know that. 'Inconsistently' ... and I can't say anything about persistent and dedicated, actually I might just change this second one because 90% is studious so Yort has been 'studious 'and 'completed a range of class activities on time' ... but 'should make more effort in the presentation of assessed work' }

Student 3

Really excellent marks in tests. Says more effort in presentation of work is necessary ... um ... and this was the student that had a fight in the field work so ... we'll start with test – an excellent understanding is fair I think ... um ... prac reports are OK ... um ... 17 / 16 ... certainly not the highest. You'd be expecting better marks than that, but it [the comment] says good presentation ... 'more effort in presentation' ... 'in the correct format' ... 'the purpose of the experiment' ... actually, I might actually change that ... OK, So I've changed down the prac reports ... if presentation is an issue. Field work ... ah ... so he had an altercation and the mark for field work is dreadful ... OK, so I'm going to give him the worst one for that and ... ah ... OK, well down to the third one [comment] specifies a good standard of presentation but this one wasn't a pass, the recycling poster was, so I'm going to go for the second last one where it says 'doesn't satisfy all the criterion'. OK Next one.

Student 4

OK, failing in the tests, borderline failing, work not submitted, so this one is probably pretty straight forward because it is quite consistent.. ah, Tests ... um ... actually I'm going to go back and look that second student ...

{and just see if I did write something on ...oh, yes, yes, I've got an attitude one for that. What about Yort? What have we got in effort, because if more effort is necessary in presentation they should be put in ... well I

can't say 'they've failed to submit some tasks on time' because I don't know that ... 'Inconsistently' ... and I can't say anything about persistent and dedicated, actually I might just change this second one ... because 90% is studious so Yort has been 'studious 'and ... [typing] 'completed a range of class activities on time' ... but 'should make more effort in the presentation of assessed work.' } ...

OK, so 4 was Meba Meggs ... OK... low marks for test ... test s were satisfactory. Um... Yeah... there was only one that was really low, so we'll put ... ah, poor? ... it was only 50% ... 'poor understanding'. OK, pracs. One's OK and one's not passing, 'well planned out Discussions, conclusion' ... I don't know if they were incomplete ... um ... I'll put the second last one because I can't confidently say what's very bad ... now ...we've got ... um ... (can't distinguish) ... I can't say anything about prac work ... um ... so ... ah ... effort - worked inconsistently, failing to submit some tasks ... that one's 'when due', 'worked inconsistently, putting ... And failing to submit tasks when due' ... OK and then field work ... well it's a pass ... um ... so we'll put the second last one there and I'll just see if there are written elements. Well I don't know anything about it so better leave them out. OK.

Student 5 Wod Johnstone

There we go [typing]... OK ... tried to set fire!... OK, naughty kid ... poster is unfinished, field work is copied and he's the child who is a pain and his parents don't come to Parent-Teachers and meetings and the marks are really bad. OK ... so ... ah ... maybe I'll start with effort, OK, I think we can say the last one – "little effort, failing to submit tasks when due" because the prac work wasn't submitted. Topic tests are just way down the bottom ... ah ... prac work is ah... 'reminded about the importance of safety' and I'll put that one in ... ah ... report ... well the one he submitted was OK, but it wasn't a pass. OK, let's put the bottom one there and field work ... the recycling poster was submitted unfinished ... um ... field work was copied from

another student. You can't say he didn't work collaboratively because he must have collaborated otherwise he wouldn't have the results, so ... the second last one for that and written work ... ah ... little effort in presentation, contains some ...ah ... actually we'll go for the 'didn't provide adequate detail'. OK.

Student 6

"Seeks a lot of clarification about prac work and about all assessed tasks, answers are confused the details are often mixed up. Was not able to correctly write any chemical formulas, she tries really hard and asks the teacher to check work that is handed in. She's a nice kid and she lacks confidence"... OK ... so topic tests ... ah ... on the borderline but again I can't say a good understanding because she's not passing. Um ... answers are confused and details are mixed up. Ah ... Prac work? She asks a lot of questions ... OK, um... well that one says she needs to seek clarification but it doesn't ... there is no suggestion that she's inattentive because she's a nice kid so actually, I'll select that one and take out 'was inattentive'. Needed to seek clarification ... 'often needed' ... um ... (sigh) prac reports are OK ... and the middle sort of one seems fine for that. Field work was good and the poster was good, so, um ... well I'll give her the second top for field work and 'informative and attention to detail' .. often mixes up ... lack confidence .. um ... yeah I'd give her the second top one again for that, but we'll see if there is something in effort ... studious and interested?, Persistent and dedicated? ... 'consistently' .. I might put the third one in ... 'showing a positive approach to each new topic' but I'd take out 'consistently produces work of a good standard' because I can't say that.

Student 7 The last student in Gar Whozit. Middle of the road marks, Yep middle of the road marks. Always attentive. Work is fine, homework not done, How often? ... OK ... um ... test, well they 're passing so I can't give him good and prac work ... actually, that's just middle of the road ... it doesn't allow ... work is fine. lets just say the second top one ... prac report

looks the same too. 'Consistently written in correct voice' ...'appropriate...' I'd give him the middle one for that because 15 and 16 aren't great ... ecosystems ... simple transect graph and ... 15/20 is pretty good, so ... Written elements good standard of presentation ... so, OK ... middle of the road one ... Should be something about homework ... 'Consistently produces work of a good standard'. 'Failing to submit work'. Well it doesn't say anything about failing to submit work so we could ... always attentive in class ... so... we'll pick 'persistent and dedicated' again um ... but I'll add 'should ensure all homework is completed when set'. OK. [typing]

Interview questions

The students that had only formal scores were ... well it was fine. It doesn't really make any difference if there is percentages or marks. You just mentally put it into percentages anyway and they fit with a grading a mental grading. Um... Where it was consistent percentages it was pretty easy but I think the comments don't have a lot of character. They make it plain. If the marks are all over the place, well then I think it makes it a little bit more difficult and you also can't select comments that give too much information because it may or may not be correct and you don't have any evidence of that.

It made a difference to have the informal comments down because you could use more informing kinds of comments. Things that talked about attentiveness ... um ... is better than sort of just having a set of marks. If you know they're attentive then you are inclined to maybe make it reflect better ... what the marks say ...

In the case of the kid who had a fight I think that made a difference and ... because you know .. although the tricky bit was his percentages were very high, so I think I sort of traded that off. But the girl whose father was sick, well, then you have to actually and fairly have to allow leniency and it wouldn't be appropriate to be too heaved handed with that information.

I think that Yes, that it does have ... it certainly does make you feel more lenient and um ... I think the boy , you know, who sets fire to things yes that allowed me to feel OK ... I would be comfortable giving him a mark or a comment that had words like poor and failed and unsatisfactory in it and um ...
yeah its not easy to do this when you don't know the students and although reports can be difficult anyway um ... but I think ... um ... yeah, the hardest ones are the one that were not consistent marks really ... um ... and the easy ones are probably ones that are consistent and had comments.
-[end]-

Respondent 3

R: I can't get a hold of those can I? Because that is background knowledge that I should read that I should call on.

S: But that is just informal knowledge

R I realize that but it is usually something that I've got in my head

S: Ahhh

R: Those sorts of things if they're not recorded here. Does that make sense?

S: Yes it does.

R If I've heard it once, that is completely alive to the reality of me teaching those students.

S: Yes, Yes Ummm. The task is kind of like a situation where although it doesn't happen very often, because you know your own students very well, but just occasionally you end up having to do reports when you don't, for example, if someone goes on leave and you are a relieving teacher or if they become sick or there has been a problem, so it is modelling a situation where you don't have a great knowledge of them only the formal records and minimal written notes.

R: I would still say that that knowledge is held within faculties or year level teams. We would still talk about these students.

S: Ah, but that would fulfil a different purpose if I give it to you.

R: I understand.

S: It would give it the same authority as the written ones but I'll reiterate them for you if you like. Bop the second one – Dad was ill. Yort had a punch up during the field work. Wod misbehaves continuously and Fom was the student who seeks a lot of assistance, That one fits with the notes there anyway.

R: OK I can do this

R: So I can in any sequence for these categories?

S: Anything you line

R :[Indistinct]

R: So what I'm going to go with ...um ... I'm going to start with um ... I think it needs an introduction ... but I obviously don't know the kid well enough to do that ... um ... right and ... "This semester" ... I don't even know ... I'll pretend they're year 9 ... " Ah year 9 purple (typing) complete a number of tasks many of which Zebo has achieved to a high level" ... um ...has been a studious. He has been studious and interested... interested in class activities completing a range of tasks on time and to a high standard ... that is basically what I said ... um ... a number of activities... [typing] full stop. Zebo has completed ... class activities. Completing a range of tasks on time ... good... alright the semester would be basically this information is not how I would usually use it. I would work it out as a percentage so I could cross compare the prac reports with the equivalency of the tests cause at the moment they are not cross comparable and I would expect the ecosystems field work would be much more in depth than perhaps the test requiring practical skills as well ... um ... so I'm going to go on and state that the ecosystems field work [typing]so the highlight of the semester would be the ecosystems fieldwork ... [?] ... a great effort ... OK ... works collaboratively in small groups ... um ... Zebo was able to demonstrate ... gathering field data ... [?] Zebo was able to demonstrate that he could work ... straight ... [typing] could work

collaboratively in a small group while gathering field data. Observation from field work were accurately described in diagrams and transect .. with detailed diagrams and transect graphs ... OK .. prac reports ... ah .. prac reports were always accurately recorded and written in the correct format... tense and voice. Zebo was able to analyse data obtained and integrate the information .. excuse me theoretical knowledge to make inferences and draw reasoned ... conclusions... overall I'd agree with that ... practical work ... can always follow instructions meticulously focussed on task completion and use chemicals and equipment confidently ... can't see why not ... ah .. topic tests indicate excellent understanding of concepts taught this semester ah ... assignments the written the elements of the collage (?) and recycling task were informative and presented with creativity ... the written elements ... assignments ... there isn't any sign of them ... perhaps the recycling poster could have been the assignment . um ... oh here we go ... um ... attention to detail ... high scores alright what I'm going to do is the bits that I modified at the beginning as an introduction I'm going to marry into the next student so that is "this semester year 9 purple complete a number of activities ... um and then from there I'lluh ... I can't comment Um .. then I might find and insert what's appropriate I'll probably try and keep a format that is similar to what I have.

Um ... when .. here we go .. so that's fine ... um .. Wod ... from what I remember... always aggravated so Wod is a quite agitated individual, puts satisfactory effort into ... no ... I think he fits into the bottom of the rank. So Wod has worked inconsistently at best throughout [typing] the semester putting little effort into class activities, homework tasks ... when due. That makes sense ... ah ... field work, OK that's not too bad ... um ... worked with a small group ... the tricky thing is that a kid that is misbehaving, then performs well when they get to the outdoor probably tells me that they are an outdoorsy sort of kid so they're not stupid. The pick up

on information but they prefer to be outside doing it .. but I have to be consistent with my initial statement .. but my ... um ... I would like to thank that I would choose the third from the top which is worked effectively with a small group gathering field data observations of field work were described with some diagrams and simple transect graphs ... now truth of the matter is that they may have been able to achieve that but the likelihood would have been that it didn't work ... um ... was not able to work effectively with a small group. So that's the key word for me ... I'm going to choose the second last from the bottom ... so the work was ... I might modify... I'll have a blend of them both ... I'll state the third from the top but I'm going to take out 'worked effectively' ... um ... so 'Wod worked with a small group while gathering field data. Observations from field work were described with some diagrams and a simple transect graph'. Because to be honest that was one of his best performances in the ecosystem field work um ... prac reports ... obviously can't be trusted and is quite agitated in class so ... um ... practical reports were insufficiently detailed ... really... not submitted 8 out of 20. They'd have to be "insufficient detail with some results" ... um ... quite a few issues ... "were cursory and did not show" Yeah, I think they'd have to be bottom of the list if not next to bottom of the list. Practical work evidently can't be trusted and is not doing safe practice ... failed to use time and resources constructively. Needed to be reminded about the importance of safety ... yes ... I'll agree with that. Topic tests ... disappointing at best... Ah, tests ... result in good understanding ... no Satisfactory understanding again. I don't think so ... poor understanding ... um ... right so Wods test results indicate a poor understanding of concepts taught this semester ... so going back to assignments ... Ah, the written elements of the ecology and recycling tasks were informative ... I don't think so ... um ... 11 out of 20 wasn't that bad of an effort though included relevant information on both did not

provide adequate detail to satisfy each of the criteria to assess this work.... Um.

Interview questions

S Cool. Um, did you find the um the student information sheets that had written notes helpful?

R Ah, to a degree. It helped me remember the personalities but as far as the information relating to 'needs to memorise chemical symbols', I didn't use any of that. Confused diverging and converging lenses - I found that subsidiary... its ...it's the values in what it, so light 49% on the test that indicates they are within that good level and depending on the effort that they've shown it says the kid is a really good student. Now ... um ... I think that more often than not, students understand what is going on but they mix up their workds. you know especially if they've been doing something practical. Um ... and it's a matter of their literacy, their explanations. They're less well versed than their actual comprehension.

S Cool and briefly back to the one where you are given oral information. Do you think that has any weight?

R Um...

S would it have an impact on what ...

R well it gave me insights especially related to ... yes... the trying to set fire to thing. I'd actually forgotten at one stage. I'd misplaced one of the students whose information you did give me in my mind ... um ... and that was the individual that um was very bright but that also couldn't work in groups, but that worked out quite easy because good scores all through except field work and felid work requires you to work in teams. Low percentage so that jogged my memory ... um ... so yes in that sense I was able to connect the evidence with what I was told.

S Right OK and then the only other thing I was going to ask was a general impression about the task?

R Um it's a process. No, I don't mind a process ... probably it was a bit more time consuming than what I realised initially, but now for me when I write my own report. I do write my own automatic comments and I

adapt and modify them accordingly. The first few, so this many here, does take the most time and then after that, as you are more familiar with your words and how they fit together, using those automatic ones much more. And know where to modify and it just becomes much more quick over time so I'd just say some of my colleagues do spend ages writing every report individually whereas I think I can convey efficient information if I spend a lot of time on the first few and then once I understand the in and out of it, I can modify appropriately. It's very quick once I get going.

S Just to give you an idea of something different, at my school we have a comment database and you're not allowed to change anything.

R Oh, Really! [laughs]

S and we're not the only school like that. I've come across of couple of others.

R I'd hate that. It takes away the personality of the teacher. -[end]-

Respondent 4

N: Choose one of the comments. What is it you want me to do?

S: Yes it is as if you were writing a report for the particular student so you would look at the marks and say OK this is their report. What would I select in those categories? You can change or write alternatives if you didn't like them anyway.

N: Uh hum. Now It is fine with me. Now I'm thinking about this as a parent and what I would like to see as a parent. And in this case she has a little bit less having 80% for all of these. 80% would be more accurate you know because 18.5 out of 25 is about 80%. You know not everybody can quickly find percentages Um and that would give me a little bit more 'ah, so' and maybe these could have been broken into topics but then you know I would feel like I would want to see the tests themselves because you can see that you know how they really understood. Yes, you know?

S: No, Yes I understand that and I think when we were putting it together just occasionally you get stuck writing some one's reports for them and you don't know the kids and just how possible is it...

N: ...to write them. Again, something you know if you have to write the comments for students to never taught and you have only the grades, I don't think you can make a statement. I think you can only give the grades by themselves. You can't have any input, I mean, because you have these you know comments which don't tell me anything, if they you know what I'm saying?

S: I do.

N: You can't go even when you know the students, you have to be very careful about what you say about so I would still like to say about somebody that they waste their time talking too much, but you have to be careful with the report because it is a little bit aggressive, you know on the one side and I think of the others as well. You need to practically, you know, say what you can, yeah, so to write a comment. Oh you are recording me?

S: Yes – because that's what I have to transcribe

N: Oh right If I have to write a comment only one

S: I'll just let you do it. I'll go away. Any other questions?

N: No not really. Then I won't talk anymore now because I will do this here.

S: What it is trying to capture is your thinking as you do it, so you can say what you are thinking. I know it feels a bit uncomfortable because it is trying to, tap into the cognition that goes into making the decisions which is what it is about.

N: Uh huh. And this one is an example, yeah?

S: No that is some additional comments. Most teachers would record in paper or in their minds how they informal notes. So these are the grades and the informal notes.

N: All right. I will be able to look at these and say a few things.

Student 1 Zebo Bloggs

This student does particularly well in the [pause] tests so for the test it is to me also showing effort in the topic test so I can say something there....alright and what did she do with the others... [pause] formal practical reports are quite good – in the 90s, which translate in practical terms to really solid. So the teacher would give that 'one' probably and then field work is just good [pause] and these things are for the next student. Alright we are settled with this because I haven't any other things to comment on you know.

Student 5 Wod Johnstone

Now for this one I can see based on the results presented it is lower. Hmm. It's a very naughty boy. Look at effort because it might be linked. See lack of communication with parents. All is quite bad . Alright with this he's the one he's copied from someone else this one is not authentic so I give him um because it mentions that I am going to punish him, so it is not high comments for this.

Student 6 Fon West Tests might be a little bit weak and low. What he presents ... what he presents for everything else is fine. Asks a lot of questions though so for that comment... [Pause]

Student 3 Yort Jones You know, this one it is strong with the test... it says more effort in presentation is necessary but he has 80% on the poster. How is that?...a little bit low there.... can see this mark for field work . hmmm this was the student who wouldn't do the group work yet his practical reports are quite good [long pause]

Student 2 Bop Smith.

Hmmm. [Pause] I don't know.... alright now. It's right. That goes with that one. It is alright.

"Presentation of written work is meticulous." The marks there... it is there good. Test is OK, Makes a lot of mistakes. [long pause]

Student 4 Meba Meggs This one there is no notes but the marks are all very low. [long pause] Almost done.

Student 7 Gar Whozit. These marks are not so good. There is one that is quite good. There is homework not done [long pause] Alright, I'm done.

Interview questions

I don't know what I did but you know the ones with a description are tricky. The ones that don't have anything you just copy the comment for the grade but when you see that, like this one that more effort on presentation in necessary but then he got 80% on the poster . It says that he hates group work but he does quite well on the practical reports, and the field work is generally woeful because he failed pretty dismally, and so I think it was hard to give him comments for that one. Some of the comments don't match the description so to be safe you then decide not to write anything about that bit, or if you write half of the comment you leave the other half out. So this way, I found with these comments I couldn't use the comments unless you can change them slightly like this. You are a little bit, you know. It is difficult.

S: The thing that freaks me out is that we do 150 of these every semester and they are all as complicated and even more so because we know the students.

N: That's right. But you know the students, as I said. I have my comments. We make our own comments go on. Because sometimes I might not be able to use these. The thing is, you know, if I have to tell you about a kid then it has to say something. I can't comment on that kid (referring to student 3). Not in the same way. So I will..... If I know they have problems with writing in the practical reports I will make sure to include that when writing comments, because "working on the presentation" is what part of the document or something. You know?

s: One thing that can come up a lot is the word good. For different people it varies as to what is called good.

N: It is hard to give it a specific value. I have written "good" for 15 out of 20 or for higher, you know. For some students it was halfway through. The learning outcome is in a different bracket than for the grades and so on. I think it is quite right. In mathematics to me it is quite high but it isn't that for everyone. It's like you know just because you know them. You gave the

percentage to each one you judge because for students it gets lower and lower in mathematics and I think you have to be clear with your standards and consistent. Here we have very high, high, medium and low and the percentages are set and agreed on. You have to give the one or the other but pastorally you feel ... you feel you have to acknowledge the students pastorally. So if you gave a student for low, you feel "is it very negative pastorally?" I think it is fifty-fifty you know. I have to agree that it can be true and fair but also it may be negative.

S: Going back to our conversation the other day what we started this conversation on was the idea that sometimes teachers tweak the weighting of things...

N: If you know the weighting of assessment in advance you can plan and gauge how the students are going. You can tweak weightings or scale tests so that it reflects the student's real achievement. If you know the student is an A+ I couldn't accept giving a C+. It isn't fair on the student. She did the test but she did so many other examples since then. She moved on she learned. You use that practically. We comment on the exam but you need to say something about the trip of the student. Do they progress or do they digress?

You use what you know. You can practically observe the students and you know what they can do. Once of my very good students she got low marks on her test and I know she is much brighter than that. She does better than that. She just had a bad day and I can't really apply it in this way but I was a little bit more, you know, because I felt that she was an A+ student in my class. I've taught her in year 7. I've taught her in year 9. I know. Based on my knowledge of her and you know something else to consider in what the class is like. My student who is A+ to this class but I don't know the other classes. There are criterion at that year level that will allow me to say she is A+ student because she has the concepts specified for that year level. She works very hard.

S: Is that the advantage of knowing students is it that it allows you to make sure what is there is fair?

N: You know recently I think particularly in this school it is easier to do better in mathematics than in other subjects. It is the culture of the school. I think also in science that they are encouraged by good marks but you have to be careful because of their understanding. Sometimes you need to go back in this way.

-[end]

Transcripts of teacher interview for narrative

Interview Transcript:

I: You said that ¹the report is a reflection of you against an ²arbitrary scale.

S: that's right yeah, ³something you have in your mind as like a top, ⁴what it could be, what the essay could be. ⁵that's actually a reflection of what I could do, ⁶that's actually the problem, you've been taking the kids to where you want to with the topic and then ⁷can anyone get that high, so in many ways, ⁸being very good at your discipline is really, really important.

I: Yeah I can see that.

S: ⁹You have to know the stuff really, really deeply and then almost, ¹⁰there has to be a real excitement about the knowledge. ¹¹I always say a good teacher is in love with something and wants you to fall in love with something.

I: I agree yeah.

S: ¹²I think good teaching will look at all the material and say how can I teach all that material ¹³but come in differently? Like from the centre.

¹⁴The moment will come. ¹⁵They have to trust that the moment will come and ¹⁶trusting that their teacher is excited by the journey is very important I think, yeah. ¹⁷Which comes back to the other thing that emotions are part of it. ¹⁸They have to have confidence, ¹⁹they have to have trust, yeah in the teacher. ²⁰yeah, that you can put the thing together.

I: So, with the report writing thing, do you think that that is an end point. What do you think the point of the report is ...[Pause]... What is the whole point of writing a report?

S: Well, ²¹you're not going to like what I am going to say, but anyway this is my opinion. ²²I think a report is actually, almost a description of the deficit.

I: The way we do them at our school?

S: ²³I think, this is going to sound really weird, but ²⁴I think that the best report in the world is a string of A pluses right across, yeah and ²⁵where the child has had the ability to move to the absolute top level the child can move to themselves, and that's a string of A pluses. ²⁶So the report is a description of why that is not the case. So ²⁷it is actually a reporting on the deficit.

I: Right, yep

S: Right yeah, ²⁸in many ways if you are looking at the tasks, because ²⁹we have been led so much towards task description, you know, it is ³⁰why is this not a superb piece of work?

So what is the report? ³¹The report is a description of the sorts of things the child can do but is not yet up to the absolute optimum point. ³²I believe that our reports have lost a lot of that, you know, ³³personal stuff and ³⁴if there is any word that is a little bit personal, you know, "well done" or "you've tried really hard", blah, blah, blah, blah, ³⁵it comes back to you. ³⁶We don't, we can't. ³⁷So I do my reports from a data bank. ³⁸When I correct the kids work, ³⁹I write in my book. ⁴⁰I have little sort of symbols and things and I write GR for grammar, T for tenses, C for content ST for structure, blah, blah, blah, blah ⁴¹So I know the kid by the end of five pieces of assessment. ⁴²I know what that child can do and ⁴³I know where the deficit is, ⁴⁴whys she's not at first year Melbourne university in a kind of why, Yeah? Yeah?

⁴⁵That is my framework. ⁴⁶[It is] actually quite high. ⁴⁷Is it nebulous where that place is? ⁴⁸Yeah, it really is nebulous. ⁴⁹You have offered the child an opportunity to reach this point (gestures). ⁵⁰There is something arbitrary about that point. ⁵¹There is something arbitrary about it, yeah?

I: So that one of the things that came up in the thesis a lot was "I know my kids, I know my students". So how do you know?

S: How do you know? [pause]... you know ... ⁵²We have the problem that if we get any of the work done at home you might actually be getting the tutor's work, so ⁵³I actually had a problem first term ⁵⁴because of the time constraints ⁵⁵I said to the kids, that's OK you can do it at home and ⁵⁶I got false views of what ... of ⁵⁷who they were, yeah? ⁵⁸The stuff needs to be done in the classroom and then you start to get a bit of a sense of who they are. ⁵⁹It's a tricky one. ⁶⁰Its tricky because ⁶¹if you're not careful ⁶²you'll equate things like how often kids answer in class ⁶³if they're talkative, if they're blah, blah, blah, blah and ⁶⁴then you might be judging something else. ⁶⁵You might be judging the extrovert and the introvert and ⁶⁶you can be judged very harshly and wrongly. ⁶⁷Just because someone is speaking in class doesn't mean they are saying anything intelligent and ⁶⁸just because someone is quiet

doesn't mean they're not thinking⁶⁹ and that's a real issue at the moment. How do you know them?⁷⁰ Because you see patterns, but again,⁷¹ as I said, I made this mistake initially,⁷² I was a bit naive.⁷³ Because there are cultural forces and⁷⁴ things I realised at the parent teacher interviews.⁷⁵ How important that A was and that A plus was.⁷⁶ It's a number, so⁷⁷ if the tutor is doing the work, so that the number can be on the report what's the point of that.⁷⁸ Now to loosen the kids from that kind of idea has been very hard.

I: yeah I agree

S: Really, really hard, so⁷⁹ I suppose seeing little patterns. I'm not.⁸⁰ I'm not prepared to make judgements on whether kids respond verbally in class very much. I'm not particularly, because⁸¹ our high Asian population and⁸² they are very quiet.⁸³ Like my top student would be XXX,⁸⁴ she hardly says boo. She hardly says boo.⁸⁵ There is something in her writing.⁸⁶ I gave them an essay last...⁸⁷ There was enough width and breadth. when I think about that,⁸⁸ What was I using as a bench mark?⁸⁹ I don't know there's a vagueness there.⁹⁰ See the criteria sheets or the rubrics⁹¹ which I think are nonsense,⁹² they try to capture that.

I: Yes, exactly.

S:⁹³ They try to capture it and⁹⁴ in my opinion it didn't work, yeah? In my opinion⁹⁵ it's because prescriptive.⁹⁶ It actually told the child what to do and⁹⁷ could only produce a medium, a...an average piece of work.⁹⁸ It is impossible to prescribe to that level,⁹⁹ because language and content are so intricately connected.¹⁰⁰ You can't count, yeah?¹⁰¹ If you make the assumption then that¹⁰² over a period of time,¹⁰³ you have put together a picture of the student.

I: Do you keep records other than the symbols in your mark book, or do you keep it in your head?

S: Hmm.¹⁰⁴ That's hard.¹⁰⁵ If the class is really big I probably don't get to that stage.¹⁰⁶ With the small classes, um it is kind of in me.¹⁰⁷ There's a vagueness in it,¹⁰⁸ I just kind of know and it is kind of ...¹⁰⁹ I get to know the student and¹⁰⁹ say this is what she...¹¹⁰ this is how she is going to come in Yeah?

I: So then when you get to actually sit down and write reports, using a data base, how do you decide what to put in it? Like do you start with the progression points? do you start with work habits? The actual process?

S: Oh.¹¹¹ Yes I do work habits and classroom things¹¹² so that I can do control C. doot, doot, doot

,doot¹¹³ Do it quickly yeah? and¹¹⁴ this is also a really interesting thing that you ask because¹¹⁵ XXXX had some problems the other day and¹¹⁶ this became a point of discussion and that is¹¹⁷ that I do that effort one.¹¹⁸ I do a control C for 5 and¹¹⁹ then I change some, Ok¹²⁰ so that is my entry point.¹²¹ XXX doesn't. She does a control C for 2 which is satisfactory and then she changes a few.

I: Oh, isn't that funny because I do 4, control C for 4 which allows me to reward... I like to move kids up not take them down. So I start on 4 which gives me three or five and then there's XXXXX.

S: Yeah no, then¹²² you've always got the odd kid that just goes off the graph, but then¹²³ that I think in itself is interesting.¹²⁴ XXXX approached XXXX and said, "look I get a picture of the whole report.¹²⁵ You're going to have trouble" and¹²⁶ she did the right thing because¹²⁷ who wants to hear 60 parents saying "¹²⁸ why is it that in your subject it is satisfactory and everyone else its very good?"¹²⁹ I mean who wants to do that to themselves you know?¹³⁰ So I think XXXXX did the right thing, but¹³¹ it was a real point of discussion,¹³² because I was sitting there.¹³³ It is your entry point.¹³⁴ [Be]cause XXXX said how can you give a kid excellent¹³⁵ when they got you know Cs and Ds.¹³⁶ Well she says you know¹³⁷ you're making a call on¹³⁸ what you think she can do and¹³⁹ I said and "so are you".¹⁴⁰ We're all making a call there.¹⁴¹ We're kind of, I am, assuming the best.¹⁴² You are assuming the worst.¹⁴³ I am assuming that the kid has put in all she can and¹⁴⁴ that's a really interesting thing.¹⁴⁵ That's really, really interesting.¹⁴⁶ Now why do I do that?¹⁴⁷ Because I cannot risk and¹⁴⁸ be able to get up in the morning. Ok¹⁴⁹ I cannot risk that I've written one of those and¹⁵⁰ the kid has put in 100% effort and it's not an excellent.¹⁵¹ I won't take that risk, so I work the other way.¹⁵² You know, I've got the XXXXXX now I know that¹⁵³ I can comfortably drop that down to "needs to be...blah, blah, blah" but¹⁵⁴ that little quiet kid sitting in the corner that gets a C.¹⁵⁵ I'm not prepared to take that risk now.¹⁵⁶ XXXX's coming in differently,¹⁵⁷ she's coming in and she's saying you don't actually know what the kid is actually capable of.¹⁵⁸ You're selling the kid short.¹⁵⁹ In it is a whole lot of our own stuff.¹⁶⁰ It is really interesting.

I: absolutely

S:¹⁶¹ It's our own stuff.¹⁶² I have a tremendous compassion for the kid that has just done the best and that's what she can get.¹⁶³ Where does it come from?¹⁶⁴ Probably a shocking primary school¹⁶⁵ where we used to get lined up according to how we were in the tests and stuff¹⁶⁶ and I was very lucky because I was always at the top¹⁶⁷ but I used to look at the faces of everybody else and¹⁶⁸ some

of those people I still know and they're good friends of mine and¹⁶⁹ I know how it has affected them.¹⁷⁰ So I'm not prepared to take that risk,¹⁷¹ ever.
¹⁷² Because, look and I think this is a very, very tricky thing with teaching...¹⁷⁴ you can't forget the child is a person.¹⁷⁵ Sometimes I will say to the kids, girls you've got 25 errors.¹⁷⁶ I'm not judging you¹⁷⁷ it's that piece of work, right.¹⁷⁸ And I do mark in red so that you can see it.¹⁷⁹ So that you can justify it,¹⁸⁰ I do like to justify my mark.
¹⁸¹ Whenever I write a comment on any kids work I will write.¹⁸² I will always start off with a positive statement and¹⁸³ then "however...".¹⁸⁴ Always.
¹⁸⁵ Like you can look at all my stuff.¹⁸⁶ You know "great effort" or "I enjoyed the first paragraph, however...", "lovely conclusion, however..." because¹⁸⁶ what happens with a piece of work is¹⁸⁷ there is a relationship between the person and the piece of work.¹⁸⁸ There is.¹⁸⁹ We've all studied and¹⁹⁰ you can get quite irate and¹⁹¹ you want an explanation as to why that wasn't judged at the level you expected.

¹⁹² And then I write this in my book and¹⁹³ I see if next time.¹⁹⁴ I say girls it takes me a long time to mark your work and¹⁹⁵ every piece of work is a little note to you¹⁹⁶ not a bunch of clichés, yeah.
¹⁹⁷ It's not, "ah, great effort, continue working nonsense – C"¹⁹⁸ What does that mean?¹⁹⁹ I talk the deficit language.²⁰⁰ I'm going to tell you why it's not an A+,²⁰¹ so then²⁰² and I look in my book²⁰³ and I see that she's fixing up with the structure thing,²⁰⁴ which was the problem last time,²⁰⁵ so she's learning and²⁰⁶ then if I see that the pattern isn't breaking²⁰⁷ I'll come in and I say, "now we've had this problem three times".²⁰⁸ I have this little kid and she doesn't finish the work, you know?
²⁰⁹ Unfinished, unfinished, unfinished, {gesturing writing in her book}²¹⁰ Writes beautifully but doesn't finish.²¹¹ Too slow and long winded.²¹² So then I'll see a pattern and²¹³ I'll come in on that.²¹⁴ "Let's think of a way to actually fix this problem."
²¹⁵ You can't forget that there is two things.
²¹⁶ When you produce a piece of work,
²¹⁷ particularly when your hearts in there,²¹⁸ it feels like an attack on you so²¹⁹ you've got to be really, really careful that when you talk about the work²²⁰ there is some objective language there.²²¹ You need to structure this like this,²²² this idea could have been linked to this idea here,²²³ could have been linked to this idea²²⁴ so that you are talking about the idea.²²⁵ Because, ultimately, we are teaching children.²²⁶ These are people,²²⁷ we're not really teaching science.²²⁸ I heard this thing once where they asked a teacher "What do you teach?" and he said "children".²³⁰ His answer

wasn't maths, science.²³¹ This is that.²³² That's really not true.²³³ The subject is the vehicle.²³⁴ This person is going to leave school and do you know what?²³⁵ They're not going to remember the semi colons they're going to remember how they felt about themselves.²³⁶ So I think you have got to be really, really careful and²³⁷ going back to XXXX's thing, I think that is really worth thinking about.
²³⁸ What's your entry point?²³⁹ What risks are you prepared to take in terms of your commenting?

I: Yeah, yeah...

S: and²⁴⁰ see the number of kids in a class and the number of classes you have²⁴¹ makes what you are saying really, really hard.²⁴² My notes are a lot of them about the actual work, but²⁴³ I do believe how you attack the work,²⁴⁴ when we mark we are in attack mode.²⁴⁵ It is a deficit model. A "why isn't it an A+?" and²⁴⁶ it's sad in many ways but that's the way of the world because²⁴⁷ at the end of it they are going to say "why am I not a 99.75?"
²⁴⁸ No-one's going to say "what do you know?"
²⁴⁹ they are going to say "what do you not know?"
²⁵⁰ It's really bad, actually.²⁵¹ To keep a balance of the respect for the child and the person,²⁵² the relationship between the child and the work and²⁵³ to be realistic about the model that we use psychologically etc. etc.²⁵⁴ to keep all of that going²⁵⁵ is really tricky and²⁵⁶ to maintain a kind of integrity around it.

I: Um, you know a report is something that is a communication between you and parents and employers and scholarship people and stuff so do you go through a validation process. So that you're investing in that model of maintaining integrity and respect for the child in that document. Are your writing the report for the kid or for other people? Your feedback in class goes to the kid, your write feedback on their work, but the actual report is that...

S: I think that yeah...

I: who are you directing it to?

S: Yeah,²⁵⁶ I never think of anyone outside the parent and the child actually but²⁵⁷ in a funny way, by the time I write the report²⁵⁸ the child knows all of that.²⁵⁹ there's nothing in the report that hasn't been on the child's work, yeah, because²⁶⁰ when I put the little notes in my book they're on the little paragraph²⁶¹ so I've got that and what the child already knows.²⁶² It is to the parents and I've...²⁶³ I hate to say this,²⁶⁴ but it's a justification for why the child doesn't have an A plus.²⁶⁵ For the parents.²⁶⁶ This is why your child isn't an A plus yet²⁶⁷ but if we play with all these things and²⁶⁸ if your child stays with me you know,²⁶⁸ we'll move that along. Yeah.²⁶⁹ That's kind of the model in my head rightly or wrongly and then²⁷⁰ but there

would be nothing in a report that the child wouldn't know. You know, for example,²⁷¹ we did some orals and things and the girls were too nervous and girls you speak too fast, relax, so²⁷² in the report will be things like, needs to develop her confidence in her own ability to speak to an audience²⁷³ but I've already said that in the class,²⁷⁴ Lets take three deep breaths girls, you know and they say "oh Miss I was so nervous, so nervous" there's nothing new about that but²⁷⁵ when you as a parents, you see a particular mark and you say²⁷⁶ well you know, my child speaks really beautifully why hasn't she got an A plus?²⁷⁷ Well because she's standing there and she's fumbling and carrying on because she is really nervous,²⁷⁸ well we have to develop this. And in some of the things in my reports and²⁷⁹ I'm very fortunate that I've got a lot of positive things in my classroom.²⁸⁰ a lot of the kids will be able to come up with a good mark²⁸¹ because of the kinds of things we have done in the classroom.

I: There's just one more thing and that is context. How do you think the school shapes what you write?

S: Ah, Oh,

I: My thing was the submission of work policy. I found that difficult because if you didn't act on it straight away you can't send out the non-submission of work letters and then you can use non-submission on the report. That really annoyed me because it is up to me to give an extension. it's not up to...

S:²⁸² Yeah I've never used it. I've never used the submission of work²⁸³ because it is too much work to do it.²⁸⁴ There's too much.²⁸⁵ I don't have time and²⁸⁶ I have been reasonably lucky where I can actually say to the kid, you know.....²⁸⁷ I don't have a tremendous amount of trouble in this kind of area and²⁸⁸ to be honest I am starting to do a lot of their assessment in class, so that I can avoid that,²⁸⁹ in fact I have become such an avoider of that because²⁹⁰ my sense with that submission of work procedure is that²⁹¹ you end up screwed as the teacher²⁹² all of the time.²⁹³ You end up having to do more work yourself, um , and²⁹⁴ I always get the sense, that you are being kind of judged.²⁹⁵ There's been a culture at the school where if the kid hasn't been doing things properly, blah, blah, blah, well²⁹⁶ it is kind of your fault. Yeah? And²⁹⁷ there's a kind of avoiding of that.²⁹⁸ I will avoid those scenarios as much as I can and²⁹⁹ work at a low level³⁰⁰ where it is a personal and³⁰¹ so occasionally it has gotten me into trouble³⁰² because I've given that³⁰³ benefit of the doubt and I shouldn't have.³⁰⁴ it has but going the other way can kind of drive me nuts too. And³⁰⁵ I kind of

forget that stuff, see³⁰⁶ I get so involved in how to teach something that³⁰⁷ that stuff is really trivial for me and³⁰⁸ I kind of forget it.

I: but anything else about the school context?

S:³⁰⁹ I don't mind the dot points system because it³¹⁰ does allow me to work in that deficit mode, which is kind of³¹¹ what I believe the report is um,³¹² where you've got a basically a description of the thing because³¹³ what I was doing before was³¹⁴ "she was able to write ... in an effective way" - I mean really - "in a very effective way", "in a less effective way."³¹⁵ What does that mean?³¹⁶ What happens in my VCE reports is there is a description of the piece and a modifier and then a general comment on... You know,³¹⁷ "Mary should however..." , "Whilst Mary has, da, da, da she should however pay attention to blah, blah, blah, "³¹⁸ so in a lot of ways my VCE report is the same because it has a description of the things that the child has done³¹⁹ with a modifier and³²⁰ then it has the patterns are again.³²¹ Why it's not an A plus so³²² I don't mind that dot point, I've actually I actually don't mind it.³²³ Because the school has insisted on the report being about the work.³²⁴ I had an interesting experience last year, was XXXX there last year or the year before?

I: Year before

S: Yeah,³²⁵ I wasn't a homeroom teacher and then I became a homeroom teacher quite suddenly. And³²⁶ they wanted that report you know the, the classroom one, the pastoral report and³²⁷ I thought finally we write something intelligent³²⁸ that isn't about a piece of work and so I wrote them and³²⁹ I used the active voice as opposed to the passive voice³³⁰ being a more personal voice all those things, well³³¹ she approached me with all my reports because³³² she didn't actually have the language of the passive voice but she wanted them all written in the passive voice.³³³ Now the passive voice has a real sense of detachment, where³³⁴ the subject is not the doer of the verb³³⁵ immediately there is a removal of any kind of life really.³³⁶ I think that is has its place but I don't think it has its place in this report.³³⁷ had to redo all of them.

I: pastoral is about relationship

S:³³⁸ exactly and I wrote things like, "the class has so enjoyed Mary's jokes every morning and dah, dah, dah".³³⁹ that all came out,³⁴⁰ because the intellectuals at the school don't like that. But anyway³⁴¹ so this is a real problem at the school³⁴² you have different levels of understanding of language, of language use, of purpose.³⁴³ I can understand if you want me to write a report on the child's ability to write a literary essay yeah,³⁴⁴ agree, it shouldn't be about the child's personal self but³⁴⁵ when we are writing something else

that is quite different and³⁴⁶ it's about that child's engagement with the group, then out of interest.³⁴⁷ You know St XXXX's use to always have that as the front page and³⁴⁸ that was the only one I read.³⁴⁹ The others were all exactly like my reports, a modifier.³⁵⁰ Obviously if he has a C for Maths he has a satisfactory understanding of algebra.³⁵¹ I'm not stupid,³⁵² but I don't blame those teachers because I wrote the same thing. Right? Now,³⁵³ but, that first report[the pastoral report], for me as the parent³⁵⁴ that was the only one that mattered.³⁵⁵ It told me how the child interacted or didn't interact,³⁵⁶ how the child was seen by the teachers,³⁵⁷ was seen by the school you know and yet³⁵⁸ they were always positive and³⁵⁹ maybe if they hadn't been positive I would have said you know...³⁶⁰ what do you know about my kid, but³⁶¹ there has to be a tremendous sensitivity.³⁶² Every child has a special gift. Now,³⁶³ when I did those reports I also had very, very quiet students in the class³⁶⁴ but you know what those quiet students kids go to them and ask them for advice and stuff and³⁶⁵ I used to see that in the morning and they used to help a little kid with her maths or something you know³⁶⁶ they were my class that are now year 11 and³⁶⁷ they were beautiful children and³⁶⁸ I think it is really important and I also taught them RE so³⁶⁸ I knew them in a different capacity so³⁶⁹ I have to write something, not positive,³⁷⁰ I don't like the cliché of positive.³⁷¹ Something that acknowledges the child's³⁷² individuality and³⁷³ humanity you know and³⁷⁴ being the little quiet kid who isn't in all the fun well people trust those kids.³⁷⁵ Often they're the

kids who don't, you know, go around bitching about everyone else.³⁷⁶ People trust them with all their problems and³⁷⁷ they will make great whatevers, great nurses great lots of things. So there I think,³⁷⁸ the school I really thought, they gave me the shits...³⁷⁹ Another thing that the school has done in the past ...³⁸⁰ that really gives me the shits about assessment and³⁸¹ that's when the work is being proof read by the coordinators.³⁸² Now when I'm the first one...³⁸³ I can't type to save my life and³⁸⁴ I can't see spelling mistakes on the computer., I'm the first one to say that so³⁸⁵ I'm very happy for someone else to be reading but³⁸⁶ I don't understand why someone that's a coordinator can tell me what a semicolon is used for.³⁸⁷ I've had arguments on the semi colon and³⁸⁸ I don't understand the relationship between being a coordinator and understanding a semi colon or the use of verb or noun or whatever.³⁸⁹ People have different areas and there has to be an acknowledgement of that. It's not because you are a coordinator so the context there can get ... and³⁹⁰ that's why you have a very irate staff at the time of the year, you notice that, and³⁹¹ everyone's nerves are really going and³⁹² it's because there is a confusion³⁹³ a total confusion.³⁹⁴ I don't mind if I've written something and the coordinator says³⁹⁵ look, can you soften this because you don't know the big picture and we can't tell you the big picture.³⁹⁶ Fine, your job is to know the big picture but not when it is out of place.