

Formative Assessment: Tertiary Student Perceptions

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Abstract

It is often suggested that formative assessment should be the preferred mode of diagnostic assessment in all levels of education. Formative assessment is generally considered to constitute evaluation within educational programs while students are still learning, and it has many perceived benefits. However, formative assessment is perhaps not used as widely as it might be, possibly because it is not broadly practiced in the tertiary sector. The study described in this paper is based on a 'transformative assessment' model, the intention of which is to change teacher practice and student learning habits.

This paper reports on an interpretive study that investigated the perceptions and attitudes towards formative assessment of a first year cohort of pre-service teachers while they studied a core unit in their Bachelor of Education program that was taught and assessed using a transformative assessment model.

Data were generated from a questionnaire administered to the entire student cohort, as well as from semi-structured interviews conducted with a small sample of students. Data were then coded and sorted into emergent themes.

The study concluded that students generally favoured formative approaches with particular reference to constructive feedback and peer reviewing, though there were reservations expressed about factors which compromised the quality of peer reviewing. Personal reflection was seen as a useful component of the overall assessment, but it was not necessarily reliable. Thus, the implementation of the formative assessment process, including the development of relevant skills, was seen as critical.

Background

Formative assessment is a comparatively recent phenomenon having its origins in Scriven's (1967) paper about methods of evaluation in education. Scriven's perspective was that formative assessment constituted the evaluation of educational programs while they were still in their developmental stages in order to improve the eventual form of such programs. The name has likely derived from the evaluation while programs or strategies 'were being formed'. Much of the current debate about the merits of formative assessment could be attributed to the works of educators and researchers such as Black and William (1998), Fullan (2001), Brookhart (2008), and Popham (2008). Indeed, what is considered to constitute formative assessment today is considerably broader than what Scriven described.

In searching for a modern definition, Popham (2008) notes that educators need to be fully cognisant of what formative assessment entails. He describes current times as an era of 'enthusiasm for formative assessment' (Popham, 2008, p. 9) and says that it is important for educators to be well informed in order to properly assess claims of commercial interests seeking to profit from the interest in formative assessment. Popham claims that many assessment resources purporting to be based on formative practices are in fact not so and indeed 'may not deliver the instructional benefits accompanying appropriately implemented formative assessment' (2008, p. 9). The definition that Popham uses is as follows:

Formative assessment is a planned process in which assessment-elicited evidence of students' status is used by teachers to adjust their ongoing instructional procedures or by students to adjust their current learning tactics. (2008, p. 6)

Indeed, Popham takes the notion of formative assessment further and coins the term 'transformative assessment' which he describes as having the power to transform the teaching of teachers and the learning of students. Several levels of transformative assessment exist, beginning with individual teachers using assessment evidence to modify their teaching methods, and followed by individual students using feedback as evidence to change their learning tactics. The higher levels of transformative assessment are characterised by a 'classroom climate shift' where genuine learning communities develop, and ultimately, implementation across a whole school (Popham 2008).

Given the benefits of formative assessment as identified by Black and William (1998) and others, it might seem that such practices should be more prominent in our primary and secondary schools. However, the current climate in Australia characterised by national testing of all students has put teachers under greater pressure to ensure that their students meet the required benchmarks. Unfortunately, and in spite of the known benefits of formative assessment practices, such practices are generally under-utilised. The premise of this paper is that, if genuine formative (or transformative) assessment is valued, yet its use is stalling in our schools, it may well be because

we are not practicing what we preach in our tertiary classrooms. If we want the next generation of teachers to become strong advocates of formative assessment, then we need to demonstrate to them how well it can work by embedding it in our tertiary teaching.

It was decided to ascertain the attitudes of tertiary students to formative assessment by embedding the formative process in one of their core units. This paper describes a project that was based on the teaching of a first year Bachelor of Education unit, Introduction to Teaching. The unit assessment was based on formative practices. Students were given an authentic scenario that required them to develop a 'conference paper' about what contemporary teachers need to be, know, and do. Their 'paper' was progressively developed during the teaching period, with drafts being brought to class at regular intervals for the purpose of receiving tutor and peer feedback. The final version of the 'conference paper' was then presented at small group in-class seminars. Students were also required to complete a content analysis of a government policy on an aspect of education that supported their paper.

Methodology and data analysis

One research question was written for this study:

- What is the effect of formative assessment strategies on
 - a. student attitudes about assessment, and
 - b. their perceptions about how formative assessment can enhance their learning outcomes?

Two instruments were used to generate data. First, a questionnaire was administered to all students who completed the unit on campus. Questions asked in the questionnaire are described in the discussion that follows. There were 107 respondents, some of whom gave multiple responses to some questions. Thus the total responses recorded in the following analysis of data may, in some cases, be greater than the number of respondents ($n = 107$). Responses were analysed manually in order to generate thick data that could be used to answer the research questions at a comprehensive level. To achieve this, responses were categorised to identify key data themes that emerged for each question. This paper considers the combined data collected from the seven tutorial classes that studied the unit.

Second, seven case studies were conducted after data were generated from the questionnaire. Students involved in the case studies were those who gave formal consent to be involved in a post unit interview about the formative assessment processes used in the teaching of the unit. Questions asked during the interview were similar to those in the questionnaire but extensive probing was possible so that responses could be considerably elaborated. Consequently, a deeper understanding of student attitudes about formative assessment was able to be developed. The case studies were conducted in order to triangulate the analysis of data generated from the questionnaire and also to gain a perspective on student attitudes about strengths and weaknesses

of the formative assessment process used in the unit, with particular regard to how they felt that the process might be improved.

On the basis of preliminary data analysis, it appeared that there were a number of critical elements that constitute formative assessment. Specifically, these elements are peer review and feedback, tutor review and feedback, use of feedback by students, timing of feedback, and use of personal reflection. It is apparent that not all elements were viewed in the same way by student participants, that is, a number of them were viewed in an overwhelmingly positive way, yet students were ambivalent or non-committal about others, and generally negative about some. These critical elements are generally linked to particular questions in the questionnaire and interviews as is evident in the following discussion of results.

Results and discussion

Results from the questionnaire

Students were asked a number of questions about aspects of formative assessment and summaries of responses are provided here. Key theme words are emboldened and italicised.

Question 1: What do you think 'formative assessment' is?

Most responses indicated that students understood that formative assessment is something that occurs during the process of learning. The majority of responses (**70**) indicated that formative assessment involved the provision of **feedback** and that this occurred during the teaching of a unit, was on-going, provided immediate evidence of learning (or otherwise), was based on observation, and was often informal in nature. Another set of responses (**33**) considered that formative assessment was used to help **improve student learning** in that it was '*correction as you go*', and enabled students to '*redo drafts*', and '*fix problems there and then*'. Related to this theme, another set of responses (**12**) focused on **teacher information** in that formative assessment '*offers feedback to teachers*', and '*helps teachers to gauge learning*' and '*see how [student] work is progressing*'. These responses are interesting when considered alongside Popham's (2008) notion of transformative assessment in that the first two 'levels' of his model are where teachers glean formative data and use it to modify their instruction, and where students use feedback to modify their learning habits.

In contrast to the above responses, a relatively small number (**13**) equated formative assessment with more **formal** assessment and '*where assignments and assessments are marked by the teacher*'. However, a number of students did not participate fully in the formative process either by way of not attending tutorials on a regular basis, and/or not preparing drafts of work and having them available for peer and tutor review and discussion. Those factors may account for this set of responses.

Question 2: Ideally, how would you like to be assessed?

At least half of the students indicated that they prefer *on-going formative* assessment (54) where progress is monitored, clear rubrics are used, and where they receive feedback that they can use to improve their work. Another set of responses (27) favoured the use of *shorter and regular assignments over time*. Specific comments mentioned the use of smaller and separate assignments carrying different percentage weighting, constant assessment throughout a course or unit, regular assessments, and being assessed on the sum of all completed tasks. A third set of responses (18) stated a preference for a *balance of various ways of assessment* including a blend of 'traditional' and formative assessment, test and class work, and a mixture of summative assessment and assessment based on in-class participation.

Question 3: What do you think are the most important things about assessment?

The most common response related to the *provision of feedback to students* (62). Typical comments included *'Feedback! And that's about it!'* and focused on the use of constructive and positive feedback to allow students to gauge progress, make efforts to improve, develop their own learning plans, and to evaluate and learn from their mistakes. There is a strong link again to Popham's (2008) notion that assessment can transform learning when learners make use of feedback to modify their own learning habits. A second set of responses noted that assessment provided *important information for teachers about their students and about teaching* (22). Specifically, this would enable teachers to not only grade students and evaluate their learning, but to plan further teaching following diagnosis of what their students have learned. Again, this links to Popham's idea of 'transformative assessment' where teachers can use formative techniques to modify their instruction.

The responses to this question are closely linked to those for Question 1 in that they focus on the notions of providing useful feedback to help students learn, and the gathering of information to help teachers assess students and plan for future teaching. Responses to Question 3 were spread across a number of other themes as well, including *being linked to course content and outcomes* (19), *fairness* (16), *have clear guidelines* (9), and be *valid and reliable* (7). These could be described as what might generally be termed 'principles for best practice in assessment' such as those outlined in the *Curriculum Framework* (Department of Education and Training of Western Australia, 2004) and similar curriculum documents.

Question 4: What do you think 'feedback' is?

The idea of 'feedback' has been prominent in student responses and this question provides some indication of what students think that it constitutes. The largest group of responses were related to the theme of *indicates strengths and weaknesses* (59), whilst other themes including *provides constructive criticism* (23), *provides a reflective response to work done* (22), and *indicates*

performance (18) were prominent. Typical responses included *'gaining from others information on where you can improve, where you went wrong, things you did well, and why you received the given mark'* and *'a response before an assessment is due, that can be reviewed and incorporated into the work'*.

The source and nature of the feedback was seen to be varied. The following observations were extracted from the responses in addition to the theme based analysis above: specific mention of **teacher/tutor (15)**, specific mention of **written notes or comments on work (6)**, specific mention of **oral comments/spoken words (5)**, and specific mention of **peer or fellow student/s (5)**. These observations are significant when considering responses to the next question about the value of peer assessment.

Question 5: What do you think of the use of peer assessment as a formative assessment strategy?

This question provided the most polarised set of responses of all the questions asked. Overall, there were slightly more **positive responses (59)** than **negative responses (48)**. Positive responses focused on a number of themes. A number were **generally positive (16)** and contained comments like 'good' and 'very helpful' without any expansion being provided. The notion of **sharing ideas (16)** reflected responses made to the questions about feedback and comments made included *'it's good because you get more opinions'*, *'helps you to see where you're going'*, and *'it's good to share ideas and see how others structure work'*. Another theme that emerged was related to **reflection and promoting learning (14)** with specific comments such as *'can sometimes guide your thinking'* and *'helps because I missed vital things'*. Several respondents also noted that peer assessment was a part of a constructivist approach that incorporated constructive and collaborative learning. Another theme was that **a peer perspective is valuable (6)** because *'peers can see things from another perspective or can help us understand where a teacher cannot'* and *'it allows peers to ask questions and prove answers without teacher input'*. These comments are in direct conflict with other themes that emerged from the negative responses.

One negative theme focused on the idea that peer assessments were **unreliable and biased (11)**. Specifically, respondents noted that *'peers are usually biased and mark highly to avoid conflict'*, *'there are bias and confidentiality issues'*, and *'it's too hard to assess friends'*. Other negative themes focused on peer assessment being **of limited value (9)** and that students **prefer a teacher or tutor to review work (8)**. The limited value of peer assessment was also identified within another theme that **students lack the necessary knowledge (7)** to effectively review work of their peers. Specific comments included *'Students can offer advice but don't specifically know what is right or wrong'* and *'it is pretty useless as students don't have much of an understanding themselves and are unaware of how to assess'*. Other negative comments related to the **need for**

commitment from everyone (5) in that some students had not prepared a draft of their work for review and hence were not in a position to provide meaningful feedback to others.

Question 6: What do you think of the use of personal reflection as a formative assessment strategy?

Responses to this question were polarised in a similar but less marked way to those for the previous question. There were more generally **positive responses (53)** than generally **negative responses (23)** and there were also many **non responses (31)**. On the positive side, a number of respondents rated personal reflection as **generally effective (24)** in that it was seen as useful, handy, and that it worked effectively. A second theme to emerge was that it enabled **reflection for improvement (19)** and students noted that it was important to learn from experiences, to evaluate the way one works and then improve, and it helps one see how one can do better. This theme links well to responses to Question 1 about what constitutes formative assessment where a significant number of respondents noted an essential aspect of formative assessment was that students used the feedback gleaned to actually make improvements in their learning. Another positive theme to emerge was that personal reflection should be **used as one of a range of strategies (5)** in that it needed to be used in combination with feedback from more knowledgeable people such as tutors and teachers. Negative responses tended to focus on the **preference for teacher feedback (10)** in that personal reflection can be **unreliable (6)** in giving a false sense of understanding, as one is reviewing one's own work.

Questions 7 and 8 in the questionnaire related directly to the ways in which students perceived aspects of the formative process as having an effect on their learning outcomes. Responses to these questions follow here.

Question 7: Do you read or use feedback when you receive it? Please expand on your answer.

The responses to this question were overwhelmingly **positive (120)**, with only a relatively small number of **negative or non-committal responses (11)**. The dominant theme was that students **used feedback to improve their work (61)** in that they are able to identify strengths and weaknesses, identify problem areas and find solutions, learn from experiences, and incorporate suggestions into future work. A second theme focused on how students **use feedback to get better grades (20)**. This emphasis on achieving better grades is subtly different to the previous theme. A number of students simply responded 'Yes' in that they **use feedback (12)**, while another theme focused on the notions of reflection, constructivist approaches, dwelling on feedback, and adapting reasoning based on feedback. No clear theme emerged from the eleven negative or non-committal responses other than the use of feedback depended on the perceived or actual quality of the feedback and a student's progress in a course or unit at any given point. In general, it could be

said that students who responded to the question considered feedback to have a beneficial effect on their learning.

Question 8: Please give your opinion about the worth and use of rubrics and/or marking criteria in your unit.

The overwhelming view of respondents about rubrics was *positive* (87) with some *negative or non-committal* (20) responses. Apart from a set of responses stating that the rubrics used were *generally helpful* (19), the theme with the most responses was that rubrics *help with planning* (30). Typical comments related to rubrics making students aware of what the tutor wants, knowing assignment criteria to allow for better planning, knowing what to include, and using the criteria to help structure a piece of writing. Another theme related to *providing clear guidelines* (19) in that respondents felt that rubrics gave clear objectives, provided clear boundaries, and clarified exactly what was being sought. A further theme relating to rubrics being helpful focused specifically on how they *help students to attain a good grade* (16). Specific comments related to knowing what is needed to achieve well and attain a particular level or mark, knowing what each section of an assignment is worth, and *'knowing what we are to be marked on gives us guidelines to follow'*.

Conversely, the negative responses generally focused on a *lack of clarity and detail* (11) in the rubrics. Contrary to the positive responses, some students felt that rubrics could be too general and lacking in specific detail, and that they needed to be worded clearly in simple dot points, otherwise there was little point to them. A small group of respondents said that they *don't use them* (5) other than at the beginning of an assignment to gain an idea of what needs most work. One response took a balanced view and stated *'They [rubrics] are useful for achieving objectives but can also limit creativity or free thinking'*.

Results from case studies

The aim of the post unit interviews conducted with the seven case study students was to probe for a deeper understanding of attitudes about formative assessment. Specifically, the interview questions focused on the following ideas:

- What the students liked and didn't like about the formative assessment process used in the teaching of the unit;
- Whether or not they thought the process was effective;
- Whether or not they considered formative assessment to be beneficial; and
- How the formative process might be modified and improved.

A number of themes emerged from the analysis of responses to interview questions and the follow up discussions and these are described here. Apart from generally strong support for the use of formative assessment from the case studies and the value of peer feedback, the themes relate to what could be described as 'logistical' aspects of managing the formative assessment process. Comments related to each theme addressed the value of the particular aspect of formative

assessment, as well as suggestions for how it might be improved, and these have not been separated here.

Theme: Value of the formative assessment process

A number of comments that indicated the value of formative assessment were made during the interviews. Several focused on the notion that the quality of the written work produced at the end of the process was much enhanced by the receiving and use of feedback. One student compared the use of formative assessment to a more 'traditional approach' where work is not subject to feedback before it is submitted, noting that *'... if you hand it in, get some marks and some feedback, then have to hand it in again based on that feedback ... it actually deepens your understanding. I think that's the goal of formative assessment'* (Student 2 Interview). Another student commented that her final product was better than what would have been produced had feedback not been provided. Similarly, one student stated that she was happier with the end product for this unit than she was with similar work in other units where formative assessment wasn't used. In addition, the benefits of formative assessment for tutors and teachers were noted in the following comment: *'You could have a lesson that addresses the bits that people are missing so it would help with the planning'* (Student 5 Interview).

Theme: Value of peer feedback

As indicated in the previous theme, feedback was seen as the essential component of the formative assessment process. However, when the notion of peer feedback was raised and/or discussed in the case study interviews, a number of issues were evident. First, the value of peer feedback was seen to be questionable as peers generally lacked the necessary knowledge and experience to provide strong feedback and were often unsure about what was to be included or expected. Student 3 noted that feedback is not likely to be beneficial when the person providing it is not well informed about the content of what is being reviewed and stated that *'It didn't work because we didn't really know what we were looking for, even with the marking sheets'* (Student 3 Interview). Several students agreed that it would be useful to provide clear guidelines and specific training in how to give feedback, with one student noting *'... [it would be] a good idea to learn about what questions to ask'* (Student 7 Interview). Student 5 suggested, given the lack of experience and knowledge of the first year cohort, that fourth year students could work with them to model the feedback process. This would appear to be a good strategy that would benefit both groups of students.

Second, and closely related to the previous point, students remarked on the relative effectiveness of feedback provided by tutors and peers. They generally viewed tutor feedback as far more effective given the experience and knowledge of tutors compared to the inexperience of peers. As well, it was felt that peer feedback was less accurate as *'Peers are going to 'sugar coat' it a bit, and they won't be quite as realistic as a tutor would be'* (Student 6 Interview). The same

student also stated that, whilst she had received quite a lot of peer feedback, she was still not confident that she would receive a good mark from her tutor as she wasn't convinced that the peer feedback was necessarily accurate.

Third, peer feedback was seen to be more useful if it focused on structural aspects of the writing, rather than content. For example, '*. . . they can help by spotting spelling errors, grammatical errors or ways of saying things differently . . .*' (Student 4 Interview) as opposed to suggesting changes in content as they lack the knowledge and experience to do so. Student 5 also raised an interesting quandary related to what peers are capable of assessing, and should be assessing, in her comment, '*Do I correct their spelling mistakes? Do I correct their grammar? Even if I do correct those things, am I still missing the whole major point of the exercise?*' (Student 5 Interview).

Theme: Commitment of all students to the process

The quality of peer feedback is likely to be related to the level of commitment displayed by all students, which was another emergent theme. Student 5 noted that some students didn't attend tutorials when peer feedback was given. '*They hadn't done the draft so they didn't turn up for the lesson. Other people had only done a rough copy so when you're trying to give feedback, it just didn't quite work out*' (Student 5 Interview). Another student commented that students need to be at the same level in terms of having work prepared for feedback, noting that '*It definitely works better when everyone contributes by having work available*' (Student 7 Interview). Several other students noted the value of peer feedback but also that it was adversely affected by a lack of commitment from some students. '*Our peer assessment involved lessons when we were supposed to bring in our drafts, and talk to each other about it, make suggestions, which I thought was good, but a lot of people didn't bring in their work*' (Student 4 Interview).

Theme: Clarity of process and tutor modelling and commitment

Several students noted the importance of the tutor being committed to the process of formative assessment by modelling aspects such as the provision and use of feedback. It was felt that the requirements and associated benefits need to be established from the first tutorial session, that is, '*Make it clear at the beginning that it is a process [student emphasis] and it is not about having one assessment to hand in at the end, but rather the process that you go through to do the assessment piece*' (Student 7 Interview). The same student also commented that '*I should have taken more advantage of it because I didn't realise that the tutor was there all the time to give us feedback . . . I wasn't clear on that*' (Student 7 Interview). Student 5 specifically linked the formative assessment process to a constructivist teaching model and noted that successful implementation depends on the commitment of the tutor. It appears that the first year students in this cohort were largely unfamiliar with formative assessment and that it was necessary for the process to be made very clear by the tutors on an on-going basis in order for students to gain maximum benefit from it.

Theme: Allocating time for feedback and marks for drafts

Some students felt that the issues embedded in the previous two themes (student commitment and clarity of process) could be partly addressed by allocating a dedicated section of each tutorial for the provision of feedback, and allocating a portion of the available marks for reviews of draft work. As well, it was suggested that a timetable be set up showing the particular stages of the draft document that had to be prepared by a certain time. Students 5 and 6 thought that the allocation of marks would better motivate students to have work prepared for peer sharing and comment with Student 5 also noting that any marks awarded should be given by the tutor and not by peers. Another student linked this idea to the on-going nature of the formative process saying

'You do have to constantly work throughout which is what you want. Some of the people didn't come to class so if you gave marks for drafts and reviews, it would make them come and actually help them to learn, and when they come to the end [to submit their final product], they would have 20% of the assessment already done' (Student 3 Interview).

These comments can be considered in the light of William's (2005) paper about formative assessment when the quality of feedback is discussed. In a study of some two hundred primary school students, various kinds of feedback were given and it was apparent that 'those given grades and praise had made no more progress than those given absolutely no feedback throughout their learning of [the] topic' (William, 2005, p. 25). It is interesting to note that several of the tertiary students who were interviewed for this project considered that the allocation of marks together with feedback might be beneficial.

There were other noteworthy suggestions that don't fit readily into a particular theme. First, Student 1 acknowledged the value of students being involved in the process of constructing assessment rubrics based on the unit outcomes, as it gave them ownership which in turn, led to a greater level of engagement in the task. Second, Student 5 suggested, in order to maximise the effectiveness of feedback, that students submit a copy of written feedback received along with their final product.

Conclusions

A number of statements can be made based on summaries of data generated from the questionnaire and case study interviews, and these are listed here. These statements address the research question in highlighting student attitudes about the value of aspects of the formative assessment process, as well as their views of the value of formative assessment in enhancing their own learning outcomes.

- The majority of students understand that formative assessment is an on-going process that provides feedback to teachers and students.
- Feedback can be used by teachers to modify their teaching and by students to improve their learning.
- Feedback can indicate strengths and weaknesses and levels of performance against criteria, in a constructively critical manner.

- Peer assessment or review can be useful for sharing ideas and to provide another perspective, in order to promote and reflect upon learning.
- The quality of peer assessment and review can be compromised by personal bias, lack of content knowledge, and a lack of commitment from peers about the review process.
- Personal reflection is seen as generally effective when used as part of a range of strategies, but it can be unreliable.
- Tutor feedback is preferred to peer review and personal reflection.
- Students overwhelmingly use feedback they are given with the primary motivation being to improve their work, but also in order to attain better grades.
- Rubrics and marking criteria that are clearly designed and appropriately detailed are helpful to students when planning their work, as they can provide clear guidelines needed to attain high grades.

Recommendations

The evidence from this study suggests that the tertiary students involved are generally in favour of using a formative assessment process and that they appreciate the value of its main component, that is, quality feedback. However, there is also a clear indication of the need to develop a better climate for using formative assessment along the lines of the third level of Popham's (2008) development model. This should enable teachers and students to gain maximum benefit from the formative process. Particular measures that emerged from the data and which could be enacted include the following:

- Make the nature, operational stages, and specific content of the formative process abundantly clear at the beginning of a teaching and learning period.
- Provide training for students in peer reviewing and assessment.
- Provide training for students in self assessment and personal reflection.
- Ensure that all group members are fully committed to the formative process, and consider allocating a portion of marks for a unit for progressive submission of draft work for review.

These suggestions support the seven propositions about assessment in higher education put forward by Boud et al. (2010), in particular the propositions regarding the need for teachers to develop student expertise in providing feedback to others, and judging the quality of their own work, so that they may be responsible and effective partners in the learning process.

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