

Using Pedagogical Practices in an Online Learning Environment to Enhance Motivation and Self-directed Learning of Part-time Students

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Abstract: Part-time students, working full-time have many problems that need to be addressed while juggling work, study and home commitments. Assumptions about student motivation and how they handle their busy lifestyle need to be factored into study routines and curriculum structures. This research investigated the factors affecting full-time teacher progress in undertaking a tertiary part-time course. Using an action research methodology and an online learning management system to support pedagogical practices, two University of Hong Kong instructors attempted to help their students take responsibility for their own learning and develop appropriate self-directed learning abilities in two consecutive modules using a combination of flexible learning, face-to-face and e-learning strategies. The findings have verified the attempts to better tailor teaching and learning to meet students' needs and also have been informative for other part-time undergraduate programmes. The results support the need for strategies to accommodate an expected increase in part-time tertiary students who are also working full time.

Keywords: e-learning; social constructivist learning; Learner Management Systems; Part-time study.

Categories: TH.EV, TO.18, TO.20

1 Introduction

Universities are caught within a time of rapid political, socio-economic and technological change. The many internal and external pressures on universities have created the need to look at teaching and learning patterns and practices from a new perspective to meet the challenges created by knowledge-based societies [Pittinsky 2003]. These pressures include a larger 'clientele' of learners from varied backgrounds, with diverse needs, motivations, abilities, learning preferences, time availability and course content requirements [Bates 2005]; a demand for more client responsive and flexible courses [Ryan & Stedman 2002] and [McInnis & Hartley 2003]; and the drive to use effectively, information and communication technologies (ICTs) in teaching and learning [Allen & Seaman 2004] and [Challis, Holt & Rice 2005]. Within this context, developing and supporting strategies for part-time learners to help them become lifelong learners who can "grow and develop deciding upon

what he or she feels is good to contribute to the common good” of educating others [Jarvis 2000] report is especially relevant when these university learners are teachers in Hong Kong schools (p26). The demand for programmes necessary to revitalise and reform education in Hong Kong with a particular emphasis on learning to learn and lifelong learning has arisen out of a series of education reports highlighting the need for the transformation of schooling [CDC 2001] and [HKSAR 2001]. Significant funding has been provided to the school sector to enhance the use of ICT and information services, including the provision of computer laboratories and libraries, and the employment of information technology (IT) coordinators and teacher librarians in Hong Kong. Given this changing environment in education; namely curriculum reform, varying student motivations and needs, and the changing lifestyles of an increasingly part-time student population, it is important to fully understand these dimensions and further explore how innovative pedagogical practice might support lifelong learning through ICT. This has been especially heightened as a result of the atypical pneumonia (or SARS) outbreak in Hong Kong in 2003, when teachers and academics use of ICT accelerated [Fox 2004].

While schools and universities are currently grappling with a shift in paradigm where learning is being reconceptualised with the use of ICT, students are expected to be more self-directed in their learning, think critically and solve problems in a rapidly changing world. With the advent of web-based environments, students are encouraged to take a more active role in their own learning. Learner-centered education works on the premise that, in an information age, the learner has increased responsibilities for managing his or her own research and learning. Learning and teaching strategies that reflect learner-centred education and lifelong learning for an increasing population of students who are mature and studying part-time [Li, Lee & Kember 2000] is a critical part of this change. The present school system in Hong Kong is highly competitive, with a strong sense of hierarchy within the structure. Secondary schools are divided into 'bands' of ability. Students are chosen for schools based on the results of a normative referenced examination system, where students in the lower band can expect to fail. These students, therefore, are often more comfortable with materials that encourage the absorption of information, and essays or tests to see if they can regurgitate facts, as this has been the norm in their education system [Fox & Henri 2005]. As stated by [TEHE 2002] “Hong Kong students are often perceived as particularly exam-oriented in their study and that they prefer spoon-feeding in order to pass exams rather than learning for learning's sake”. But given the opportunity to experience different ways of learning, students can reach higher achievement targets that enable knowledge and skills that are important to know and do so with enduring understanding. This research intended to identify and enhance the learning approaches of students and help them become more self-directed, responsible learners who are better able to adjust to their learning environments by juggling their busy work and study lives.

The students involved in this study were enrolled in a Bachelor of Education degree specializing in IT in education or BEd(ITE). This programme used a combination of online and face-to-face approaches, making use of the in-house built Learner Management System, the Interactive Learner Network or ILN developed for

delivering materials and synchronous and asynchronous communication between students and instructors. Face-to-face lessons were enhanced with the integration of ICT and reflective practice strategies, which were both central to the core module objectives within this study.

2 Methodology

Both quantitative and qualitative data were collected in this study. The quantitative data (online questionnaire) enabled benchmarking of existing student characteristics and to map changes over the two years. Qualitative data (reflective journals and interviews) were collected to evaluate the success of the interventions. This research, investigating a select group of students, is part of a larger ongoing study examining part-time in-service teacher education needs at the University of Hong Kong [Trinidad et al. 2003] and [Henri et al. 2003].

A questionnaire was administered to these case study students (n=58). The response rate was 100%. The online questionnaire comprised of closed and open questions and was administered during Term 1 2003 in class then again in Term 1 2004 in class. Data from this questionnaire was used to benchmark learning styles, motivation, work and lifestyle habits of these part-time students and factors affecting studying such as time for traveling to and from classes. In order to study whether students' learning styles and time usage is related to factors such as teaching position, teaching experience, age and gender, a Pearson's R for correlations between the attributes that affect attitudes to student learning styles and a one-way ANOVA to compare means of discrete groups of students was used. Reliability analysis based on Cronbach alpha was used to study the consistency of measuring items. In both cases, SPSS 12.0 was employed to run the tests.

Pedagogical interventions were introduced in the two modules, firstly in the module BITE1109 that students completed as second year students in Term 1 2003 and then were repeated in BITE1111 with the same cohort of students as they completed as third year students in Term 1 2004. The researchers monitored motivation, participation, and performance of the students and used this data as a basis of evaluating the interventions trialed. The interventions were conducted within an action research paradigm. The action research framework according to [Hopkins 1985] is most appropriate for researchers who recognize the existence of shortcomings in their educational activities and who would like to adopt some initial stance in regard to the problem, formulate a plan, carry out an intervention, evaluate the outcomes and develop further strategies in an iterative fashion. The interventions involved the use of social-constructivist approaches to teaching and learning whilst encouraging students to reflect on, and attempt to improve their own learning within both modules.

In both modules the technology was used to support the process and the assessment tasks drove the learning [Albon & Trinidad 2002] and [Trinidad & Albon 2002]. Using the social-constructivist approach to teaching and learning, appropriate scaffolding and support was provided to the students to help them work

collaboratively in groups and as individual learners. Task-based learning activities supported by the technology (ILN) were used to build a community of learners and provide access to structured online materials and resources anytime, anywhere. The students had one of the instructors for both modules and therefore had 24 sessions to develop their own strategies for learning over a period of a year. The students completed a reflective e-journal of learning in both modules and participated in the social-constructivist learning environment that encouraged group-work and data sharing through the extensive use of online communications via ILN. Some sessions were conducted as online flexible sessions using asynchronous and synchronous communication while other sessions were face-to-face but supported through the use of materials housed on ILN. This meant that while students attended most sessions at the university some sessions were offered solely online. Specifically, through the BITE1109(Yr2) and BITE1111(Yr3) modules there was an attempt to:

- support part-time students through independent and online learning methods;
- support a range of learning styles;
- encourage students to be actively engaged with the subject matter to adopt a deeper approach to learning;
- encourage collaboration and higher order thinking skills, and discourage copying
- provide rapid feedback through sharing/group work and online methods; and
- encourage students to monitor their own progress and self-directed learning through the completion of an e-journal of learning.

This was achieved by providing a teaching and learning environment that, through pedagogical interventions, had:

- authentic tasks, projects and task-based investigations;
- student group sharing construction;
- interviewing, interpreting and applying research findings;
- simulations, case studies and real-world practice;
- sharing individual data (to encourage collaboration while discouraging copying);
- online reference material linked to support and encourage independent learning;
- computer based instruction sheets (to guide students through procedures [using video clips where appropriate], aid data capture, validate readings, check responses and suggest conclusions) providing both online and paper-based options for different learning styles;
- peer-reviewed forms of presentations; and
- reflections.

For example one of the assessment tasks used to help students develop their skills involved two parts. The group component consisted of answering the question “What strategies does your school have in place to encourage staff development and school change?”. To carry out this task each individual within the group of four was to gather data from their own school to present the current situation of the school. Each individual’s school data was then combined into a group table to compare and

contrast the four Hong Kong schools current situation. Then the group needed to compare and contrast this data to answer the question. Each group's effort was judged on participation within the group and the team's ability to gather, synthesise, analyse and evaluate information to form an accurate picture of the current situation. The results were presented to peer groups in class. This assessment task then assisted individuals in developing part 2 of the assessment task. Part 2 of the assessment was to answer the question "What professional development plan will you develop for your school to encourage staff development and school change?". Here each individual student needed to devise a plan for their school that might be followed to assist in professional development and school change. This plan was to be based on the data gathered in part 1. The format was negotiable but needed to build on part 1 of the assessment Task 1 and show evidence of readings and research in the area of staff development and school change. Individual students also reflected on and documented their learning in an "e-Journal of Learning" that emphasized metacognitive reflection and not just the regurgitation of class sessions. The two instructors met weekly to discuss class progress and the student's learning, and reflecting on what had worked and what might be changed.

3 Results

During the course of the data collection from the 58 students, a total number of four factors and 15 attributes were identified as having potential affect to the attitudes for the students' learning and hence, as being independent variables for subsequent statistical analysis. These factors included travelling, age, qualifications and digital connections.

It was found that it takes time for the students to travel from the schools where they worked to university classes and from the university to home. Time traveled ranged from less than 15 minutes to over 90 minutes. With the majority (55%) taking between 46-75 minutes each way showing students spent on average between an hour to an hour and half traveling to and from university classes.

The age of the students who participated in the questionnaire survey ranged from between 20-25 to 56-60 with the majority of students (68.9%) falling into the 25-36 year old category. The qualifications of students included certificate/diploma (50.4%); high certificate/diploma (29.8%); postgraduate certificate/diploma (4.1%); and masters degree (15.7%).

The current positions of those students within their schools included the majority of students as teachers (85.1%); panel heads (12.4%); with one teaching assistant, a deputy principal and one principal. Teaching experience of the students ranged from less than two to over 20 years with the majority falling into three groups with 2-5 years (30.6%) and 6-10 years (32.2%) and 11-20 years (27.3%) experience.

The quantitative data used Pearson's R and identified attributes that were positively correlated with the students' learning styles. Tables 1, 2, 3, 4, 5, 6 and 7 outline the positive correlations.

Table 1: Intercorrelations between Clarity and Confidence Variables with Age and Teaching Experience

| Variable | Age | Teaching Experience (Years) |
|--------------------------------------------------------------------------------------|-------|-----------------------------|
| 1. Knowing whether they are learning something worthwhile or not. | .198 | .357** |
| 2. Know when they need to learn more about something. | .169 | .319* |
| 3. Capable of learning for themselves almost anything they might need to know. | .251 | .362** |
| 4. If there is something they want to learn, they can figure out ways to learn them. | .220 | .348** |
| 5. Learning is fun for them. | .274* | .442** |

Note: ** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level

Table 1 shows the intercorrelations between the clarity and confidence variables are significantly higher with increasing years of teaching experience. “Learning is fun for them” was also significantly and positively correlated with age although not a large effect.

Table 2: Intercorrelations between Determination and Openness Variables with Age and Teaching Experience

| Variable | Age | Teaching Experience (Years) |
|-----------------------------------------------------------------------------------------|------|-----------------------------|
| 1. Prefer to take part in deciding what will be learned and how | .212 | .299* |
| 2. If they discover a need for information they do not have, they will find it somehow. | .020 | .288* |
| 3. Make themselves do what they think they should do. | .130 | .276* |
| 4. Love to learn. | .148 | .436** |
| 5. Have a lot of curiosity about things. | .059 | .310* |

Note: ** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level

Table 2 illustrates the intercorrelations between the variables determination and openness with age and teaching experience where they are significantly and positively correlated with teaching experience (although not a large effect). The strongest effect here is “love to learn”, which increases significantly with teaching experience (years).

Table 3: Gender and Self-Directed Learning

| | | ANOVA | | | | |
|------------------------------------------------------------------------|--------|-------|------|------|-------|------|
| | | N | Mean | SD | F | Sig |
| No one but themselves are truly responsible for what they learn. | Male | 31 | 3.68 | .702 | 5.564 | .022 |
| | Female | 27 | 4.15 | .818 | | |
| | Total | 58 | 3.90 | .788 | | |

Female students demonstrated a higher belief in being responsible for their own learning when compared to male students [$F(1,56) = 5.56, p < .05$] as shown in Table 3.

Table 4: Gender and the Importance of Learning how to Learn

| | | ANOVA | | | | |
|------------------------------------------------|--------|-------|------|------|-----|------|
| | | N | Mean | SD | F | Sig |
| Learning how to learn is important to them. | Male | 31 | 3.68 | .748 | 4.5 | .037 |
| | Female | 27 | 4.11 | .801 | | |
| | Total | 58 | 3.68 | .796 | | |

Table 4 illustrates female students demonstrated a higher belief in the importance of “learning how to learn” when compared to male students [$F(1,56) = 4.54, p < .05$].

Table 5: Learning how to learn and level of IT Qualifications

| | | ANOVA | | | | |
|---------------------------------------------------|-------|-------|------|------|-----|-----|
| | | N | Mean | SD | F | Sig |
| Learning how to learn is important to them. | None | 3 | 3.33 | .577 | 2.5 | .05 |
| | BIT | 3 | 3.33 | .577 | | |
| | ITT | 7 | 4.29 | .756 | | |
| | UIT | 37 | 3.95 | .743 | | |
| | AIT | 8 | 3.38 | .518 | | |
| | Total | 58 | 3.84 | .745 | | |

Note: BIT = Basic IT training; ITT = Intermediate IT training; UIT = Upper IT training; AIT = Advanced IT training.

Table 5 illustrates the level of computer training qualifications held by the students. All teachers in Hong Kong were required to participate in mandatory computer training with the majority of these students (37/58) achieving upper level IT training (UIT) qualifications. There was a significant difference in how important “learning how to learn is” depending on the level of IT qualifications [$F(4, 53) = 2.535, p < .05$]. By inspecting the mean and SD the intermediate group (ITT) rated this as more important than the other groups which appear fairly equivalent. A post-hoc Tukey’s HSD confirmed that the ITT group was significantly different from all other groups.

Table 6: Internet Access and Confidence to Acquire Relevant Learning Skills

| Confidence Statement | | N | Mean | SD | ANOVA | |
|--------------------------------------------------------------------------------|-----------|----|------|------|-------|------|
| | | | | | F | Sig |
| If there are things they want to learn, they can figure out ways to learn them | Broadband | 52 | 3.85 | .724 | 4.698 | .034 |
| | Dial-Up | 6 | 3.17 | .753 | | |

Table 6 illustrates the digital gap or those who had Internet access at home. Students with broadband internet access demonstrated a higher self-rated confidence in finding out new ways of learning material when compared with students who had dial-up internet access [$F(1,56) = 4.70, p < .05$].

Table 7: Internet Access and Enjoyment level in Seeking Answers to Questions

| Determination Statement | | N | Mean | SD | ANOVA | |
|-------------------------------------------------|-----------|----|------|------|-------|------|
| | | | | | F | Sig |
| Really enjoy tracking the answers to questions. | Broadband | 52 | 3.58 | .667 | 4.0 | .049 |
| | Dial-Up | 6 | 3.00 | .632 | 61 | |

Table 7 illustrates students with broadband internet access demonstrated a higher self-rated confidence in “really enjoying the tracking the answers to questions” when compared with students who had dial-up internet access [$F(1,56) = 4.06, p < .05$]

The major issues students reported (ranked in descending order) are provided below under the headings of time and time management, workload, quantity and quality of assignments, family, school fees and schedule of classes.

3.1 Time and time management

Students reported that they generally arrived in class tired, having spent a full day at work and then had to travel to university for the face-to-face sessions. Travel time was mostly not seen as appropriate for reading study materials and as their work demanded long hours, they had been unable to use their time at work for reading.

Students also stated that they found juggling their work, study and leisure time difficult. However, some students had succeeded in improving their time management skills due to necessity. As one student noted: “[Now] *I have a better way to manage my time ... I set the priorities for tasks needing to be completed.*” This allows some of the students more time for other activities in their study: “*I will spend more time on analyzing. Then I need to reflect on what I’ve found ... My way of thinking is different from before [I started the course]*”. The structure of the course and the tasks set

individuals and groups has stimulated some of the students to manage their time more effectively.

3.2 Workload

Students worked an average of 45 hours per week at school and a further average of nine hours preparing for their studies. They generally expressed difficulties in successfully handling the work load given, though most felt that group work alleviated this burden considerably. As one student noted: *“I like group work since we can share much of the workload.”*. Another student concluded that group work *“reduce(d) our workload”*.

3.3 Quality and quantity of assignments

Students stated that the practical nature of the assignments set, embedded as they were in their own work place and related to students’ own work, made it possible to carry out some of the set assignment work at school. Individual assignment tasks could then be compared with other group members to complete another component of the assignment. This collaborative group work was appreciated by students who felt that sharing and comparing their individual work with others and producing a common summary statement across the group, examining similarities and differences between workplaces and recommending further developments for improvements across their schools was very rewarding. As one student summarized, *“[with] group sharing I can learn more from interacting within a group.”*

3.4 Family

Long work and study time during the week, often left students limited quality family time. As one student reported: *“I usually work very late at night, especially when I have to do the assignment. It’s hard. I will not go out with the family during the holidays. It affects my family life.”* However, students who did spend proportionately more time with their family had a positive correlation with reflections on the course itself and on their own learning styles.

3.5 School fees

As with other full fee programmes, students complained that the cost of the BEd program was too high.

3.6 Schedule of classes

Weekday classes were scheduled from 6.30pm to 9.30pm in the evening. Taking into account the travel time for many students (averaging around one hour to/and from class), most students were not able to get home before 10.30pm or 11pm after class. At the same time, many students had great difficulty arriving to class on time, due to the long travel time and the need to have something to eat before class. Frequent discussions in class centred around adjusting the start and finish times of face-to-face classes. However, one single time was never satisfactory to the majority of the students, so class times were not changed. The online classes, however, were

particularly appreciated by some students who were able to successfully complete all tasks set without having to come to university the week online classes were held.

Overall, the feedback on the learning strategies used in these two modules were very positive. Below are representative comments made by students:

Social constructivist model is effective. Group learning gives us a chance to share, discuss and develop ideas.

This kind of learning model can help me reflect on the things I learnt.

I prefer learning alone but I know that learning in groups help me share experiences with others. I have learnt to learn more collaboratively and this strategy I will use in the future

Group work and group sharing. I can learn more from interacting within a group.

I like the clear objectives, the guidelines given, the scaffolding and support provided in the course ... this I feel makes every session more meaningful to me.

Feedback about the type of learning. Below are representative comments made:

I like to learn in groups. Group work makes us learn from one another. It also reduces our workload.

I prefer to self-learning.

I fully understand and agree with the benefits of collaborative learning. However, when put into practice, I note there are many problems that need to be addressed concerning inequality of group member input. For example, some classmates contributed little (due to a lack of ability or unwillingness) but they got a good mark as they shared the benefits of the entire group effort! This continually happens with group-based work, making me less inclined to join in group activities with certain students. Yet confronting the student who contributed little to the group ... created some conflict between us. Overall, I would prefer an option be created that allows tasks to be completed both in groups or by individuals ... this would provide the flexibility for us to choose whether we wanted to work with or without certain individuals in groups.

There was some hesitation regarding the use of the online delivery mode but the social constructivist learning environment encouraged students who had difficulty with the English language as evidenced by these comments:

Dependence on the teacher: If a teacher can explain to me individually when I don't understand, this works best for me. I need face-to-[face] teacher-led

lessons. I can raise my hand and get an immediate response from the teacher when I have problems.

Language issue: Working in groups has some advantages. In group work, my classmates can give me more and share the workload. However, when I work individually, I do not need to contact others and I can save a lot of time ... there is a language problem. Although the class is conducted in English, I need my classmates to interact in Chinese.

4 Discussion and Conclusion

This research was able to identify and document the busy work and study lifestyles of 58 part-time students while they undertook two consecutive modules at the University of Hong Kong. The study attempted to understand these dimensions and explore how innovative pedagogical practice might support learning through the use of a learner management system (ILN) over a two year period. It was found that students who were self-directed, responsible learners enjoyed learning and were better able to adjust and adopt certain learning approaches to assist them in their study. These practices included choosing group mates to economize on the use of time, using face-to-face meetings for group project completion and helping weaker students within their groups. The higher achieving students were more often the students who used class break time, and class time to work on group projects and enjoyed learning and researching answers, and had access to broadband internet at home. The identified attributes that were positively correlated with the students' learning styles clarity, confidence, determination and openness variables were found to be significantly higher with increasing years of teaching experience. "Learning is fun for them" was also significantly and positively correlated with age. Female students demonstrated a higher belief in being responsible for their own learning and learning how to learn compared to male students. There was a significant difference in how important "learning how to learn is" for those students with broadband access at home and higher computer training experience.

The use of the technology through ILN can be used to support and scaffold learning to better accommodate part-time tertiary students who are also working full time. Using social constructivist strategies where students are encouraged to be more self-directed, learn from each other, motivated to learn, apply learning to real world situations, and have a sense of belonging to a community helped many of the students in their learning experiences as evidenced by the comments collected in this study. The structure of the B.Ed. programme for such part-time students must allow for ample opportunities for them to share in both the flexible and face-to-face learning environments that are carefully structured to promote social constructivist learning. Through this project staff have been able to work together as a team to better develop the learning environment for part-time students based on their needs and to help mentor each other's pedagogical practices to support teaching and learning.

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