EXPLORING FLEXIBLE AND LOW-COST ALTERNATIVES TO FACE-TO-FACE ACADEMIC SUPPORT

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Abstract

In this paper we address some of the issues surrounding the use of educational technology solutions with first year net generation students in an introductory education studies unit. These issues include the need for more engaging learning experiences, the role of technology in supporting this need, and the possible mismatch between expectations and actual needs. The student usage and access of a low-cost, flexible alternative to face-to-face individual or group-based academic support was the focus of this case study. We describe our rationale and attempt to help students with their assignment requirements in a first year teacher education unit through the development of a small-scale self-directed intervention program, and report on student engagement with the model.

Analysis of the data brings to light findings that have implications for policy design and shows a need for timely research to better inform lecturers of their students' digital literacy, acceptance and access, and use of innovative learning designs. This also highlights the requirement for a greater awareness of the technologies that students embrace, the technologies that may pose a challenge and the differing needs of first year students to those of the more experienced learners.

Keywords: Self-directed flexible intervention, student engagement, learning design, net-generation, millennials, generation Y, Blackboard, LAMS, Camtasia

Introduction

The learning landscape is changing. This adds pressure to an already stretched present (and future) workforce to up-skill and demonstrate a capacity to stay in step with the growth in information and communication technologies, and respond effectively to the changing profile of their students (Parliament of Australia, 2007). The current debates about 'quality education' bring to the forefront the divergence of opinions, values and beliefs. The challenge of accurately measuring teachers' and students' information and digital literacy expectations and comfort

levels with established and emerging technologies, and the need to correctly assess teacher and student readiness to engage in a variety of teaching and learning experiences, which may have little relationship to the traditional 'chalk and talk' models and experiences from the past, is indeed in urgent need to be recognised and acted upon.

At Edith Cowan University, we have embraced the opportunities that innovative and creative learning designs present to improve student engagement and learning outcomes through enhanced service-focus. A major force in our attempt to develop a flexible, easy-to-use and low-cost model to support our students is the realisation that a great number of university students are suffering 'assignment anxiety' and study stress (Stallmann, 2008). We believe that the increasingly close connection between pedagogy and technology can be of particular assistance to students who suffer distress. Our central aim is to develop clear assignment help structures and therewith decrease the negative impact of psychological distress on educational outcomes.

In this paper, we firstly outline our vision and philosophical beliefs before turning our attention to the changing student profile. Recent research has shown that millennial learners' needs and expectations differ markedly from previous generations and this variable cannot be ignored. Secondly, we outline our understanding of 'millennial learners' and the adaptation we make to our learning design in response to our understanding of the needs and expectations of new generations of higher education students. Thirdly, we provide a case study of the development and implementation of a small-scale self-directed intervention program. Finally, we discuss possible further directions for improved learning design that provides flexible, low-cost, self-directed support and enables the extension of students' information and digital literacy through day-to-day practices.

Providing 'quality education' from a humanist-constructivist perspective

A humanist-constructivist philosophy of education is based on a holistic approach to learning and teaching. It is thus concerned with and pays particular attention to students' academic self-concept. It is often assumed that when teachers understand students' learning needs and motivation to (not) engage or only semi-engage with the teaching and learning materials or support structures provided, they will be in a better position to change learning designs to engage their students. However, the learning materials or support structures need to be perceived by students to 'add value' and thus be personally meaningful. In other words, as lecturers working

out of a humanist-constructivist perspective of education, we strive to better understand the particular characteristics of our students so that we can create a compassionate and encouraging but also challenging learning environment in which students are able to fulfil the requirements of demanding assignments. It is important for students to feel secure enough to challenge their existing beliefs and assumptions and begin to take increasing responsibility for their own learning and personal cognitive and emotional and growth (Barr & Tagg, 1995; Biggs, 2003; Maslow, 1970; Montessori, 1964; Ramsden, 1992; Rogers, 1983).

We believe that student agency, and a learning culture that promotes self-esteem and intrinsic motivation, will lead to better academic outcomes (Dobozy, 2004) as it is able to engage the 'whole person', not because they receive a reward (or mechanically fulfil a task requirement that will lead to the reward) but because they value the transformational effect of 'new knowledge'. Following in the path of European and American forbearers of humanist-constructivist conceptualisations of 'quality education' (Aloni, 1997; Conrad & Wyer, 1980; Donnan, 2007; UNESCO, 2005) we are prepared to take educational risks and stimulate educational reform in the quest to help students stay engaged and experience the meaning of intrinsic motivation. Despite its long history, humanist-constructivist philosophy of learning and teaching is not without its critics. Not long ago, Australia's most vocal and best-known 'back-to-basics' advocate, Kevin Donnelly (2004, 2007), proposed that humanist ideology was to blame for lower literacy and numeracy standards of Australian students. Theoretical debates about the effects of particular learning designs and pedagogical processes that are underpinned by particular philosophical positions will need to be extended by empirical research that can shed light on hypothetical arguments. Nevertheless, humanist-constructivist educational views and practices are seen as a viable alternative to the 'back-to-basics' argumentation (see for example Brown, Woods & Hirst, 2006; Marsh, Hau, Artelt, Baumert & Peschar, 2006).

Profiling students: Who is the millennial learner or – Gen Y?

The ability to profile students by mapping their characteristics and approaches to learning may be particularly valuable in a climate of high-stakes accountability and quality assurance. Generational profiling refers to selected characteristics of a particular group of people that are similar in age. Other commonly used demographics beside age include race, gender, income, mobility, education attainment, home ownership, employment status, location etc. Generational

profiling can be a valuable tool as one aspect of demographic data attempts to describe the changes in characteristics of a population over time. Arguably, any educational institution that wishes to maintain and improve their quality needs to address issues of how their students communicate, interact, learn and relate both to each other and across the generational 'gap'. It is a mistake to simply assume that generational similarities and differences can be ignored. Relationship-building' within and amongst the generations is seen as an important component for us as humanist-constructivist educators. The strategies that we employ to engage our students and test our assumptions about their needs and preferred practices are addressed below.

The terms 'millennial', 'generation Y' or 'net generation' (Oblinger, 2004) describe students who are born approximately between 1980 and 1994 (McCrindle, 2008; University of Wisconsin-Madison, 2008). Many of these students are now at or graduating from university. Characteristics of the millennial learner summarised by Diana Jonas-Dwyer and Romana Pospisil (2004, p. 200), together with the needs and wants of this particular student group, prove to be useful here, although we understand that the stereotyping of students is always problematic. The characteristics are:

- 'civic-minded' (in need of opportunities for community related learning);
- 'inclusive and team oriented' (in need for staying connected with others);
- 'confident' with 'zero tolerance for delays' (in need of opportunities for electronic communication);
- 'hopeful-optimistic' (in need of opportunities for experiential and authentic learning activities).

Further exploration of the learning needs of millennial students at ECU indicated that students prefer information connectedness, multitasking, and a focus on immediacy in their university studies. This is posing a challenge to educators who are trying to meet the expectations of millennial students by supporting experiences that are immediate in terms of their access and reliability, are sufficiently flexible to cross the boundaries of study, work, and social lives, and provide them with a connected and information rich environment in which to learn (McMahon & Pospisil, 2005).

Based on our understanding of effective learning and teaching at university discussed above, we aspire to provide ample opportunities for virtual and face to face collaboration, to encourage and support constructivist learning. It is now generally accepted that learning

management systems such as Blackboard, Moodle, and LAMS are not just administration tools to transmit or deliver information for large cohorts of university students; they also provide environments that allow for feedback, individual and joint discoveries.

However, not all technologies may be embraced enthusiastically by students in the learning setting. Kennedy et al (2008) established in a study of 2000 first year Australian students in 2006 that though many first year students are highly tech-savvy, they identify certain technologies as 'living technologies', for their own personal and social use (eg SMS, games), and others as 'learning technologies' and more research is needed to determine the specific circumstances under which students would like their 'living technologies' to be adapted as 'learning technologies'. Kennedy *et al.* (2008) further note:

> As university educators we must be attuned to the ever changing and often diverse characteristics of our student cohorts and that evidence of who our students are must remain an important factor in informing how we use the array of technological tools at our disposal to design rich and engaging learning experiences for all students. (p. 120)

Agreeing with Kennedy *et al.*'s views that also resonate with Laurillard (2002, p.202-4), we set out to test our hypothesis that our millennial students would readily embrace the opportunities that the self-directed assignment help (scaffolded virtual intervention program) would present.

Unit design

The unit, *Becoming a Teacher* (EDL1000), is a compulsory education studies unit in the Kindergarten through Primary program at Edith Cowan University. It is the first unit that students encounter if they follow traditional enrolment patterns. The unit design has changed since its inception in 2002, but its main aims have not. The purpose of the unit is for first-year teacher education students to get a sense of the 'life in schools and classrooms' and to introduce them to various teacher roles and teacher skills. Therewith, the unit is charged to begin the development of students' pedagogical content knowledge and for students to gain an awareness of what it means to become a 'reflective practitioner'. A major assignment task of this unit is the 'Learning about Teaching' report. Students enrolled in the Kindergarten through Primary program are early on engaged in workplace learning. So this assignment focuses on linking students' practical experience with the theory they are learning in this unit. As students observe the classroom practices in their practicum schools and engage with the theoretical elaboration about effective teaching and learning, students need to select a key feature (from a list of five or anything they

like) as focus point for their observations and reflections. This assignment task is designed to turn students' attention to features of school and classroom activities, which frames students' understanding and establishes a baseline for further development of their practice of teaching. This is a complex task, as for most students, the focused observations represent their first active investigation of school context and classroom teaching and learning from a vantage point of a teacher (or other than student). Adding to the complexity of the assignment task, students need to present their observations in an academic format that is foreign for most of our students. Therefore, this unit serves as an entry point and induction into two very different cultures: academic life as a university student and teacher life as a pre-service teacher. The support structure we developed for our students has taken on many different forms, but what seems to be the constant variable is the close relationship between pedagogy and technology. Since 2005, we have made all lectures available as audiofiles and they are provided in MP3 and WAV format via Blackboard (for a discussion of this topic see Dobozy 2007b). However, for the first time this year, we also introduced multi-modal assignment scaffolding; text-based, face-to-face and web-based (see Figures 1& 2).

Assignment 1 Part A Learning about Teaching Report

Writing of a report discussing your school and classroom

Think of your current practicum school and classroom and devise a plan to discuss 'life in this school and classroom'. What topics or issues come to your mind? They may include: morning rituals, student discipline, student council, the new music room, the way students work, the way your teacher teaches etc. What is it about these issues and topics that intrigue you? Is it because these issues and topics are similar/different to your past experiences as a primary student? **In short, you are asked to take an in-depth look at your first practicum classroom and school, so that you can focus on, and begin to think about, some of the issues involved in teaching today.** Observing your mentor teacher in unrehearsed situations during a 'typical school day' will give you the opportunity to connect the information provided in the lectures and text books with real-life situations and will provide you with the necessary confidence to discuss and experiment with approaches to teaching that are new and different from those you experienced as a student.

Process:

Carefully read through Chapters five and six of your main text. These chapters model possible ways of documenting 'life in schools and classrooms'.

Write an introductory paragraph **describing the context of the school**, discussing the physical environment, the people and the school culture.

Now move on to **describing and discussing your classroom**, again talking about the physical environment, the people and the classroom culture.

Select **one to two issues or topics** from the 'life in the classroom/school' as illustrative examples to discuss the points you are making.

Now that you have a good idea about the content, think about organising your ideas and the style of writing and **begin with your first draft**.

Additional Information (extract only)

c) Classroom Organisation - Procedures & Routines

Established procedures and routines are the key to organisational success in the classroom and elsewhere. "Knowing what to expect with regard to 'how we do things here' enables learners to act independently and reduce their reliance on teachers" (Jensen & Kiley, 2005, p. 160). For example, "meet and greet" routines, classroom clean up procedures, group building procedures, etc. are all prominent in K-7 classrooms and fulfil important functions.

Carefully read the following case examples ….

On your next school visit, **observe** the classroom procedures and routines carefully and note any that occur on a regular basis (daily or weekly). **Consult** with your mentor teacher and discuss the issue of classroom procedures and routines (negotiate a convenient time for the mentor teacher). List the classroom procedures and routines that are used in your professional experience class, using the three categories described in your unit textbook (p. xxxx). **Now you are ready to write** your report, discussing procedures and routines used by your mentor teacher. Analyse how children follow and, in your opinion, understand the purpose of these procedures and routines. Briefly describe the children who do not seem to follow the procedures or who display disruptive behaviours. Do these children have any characteristics in common? How could this issue be addressed? What classroom procedures and routines do you like particularly and what would you do differently? Why?

Figure 1. Assignment Task - *Becoming a Teacher* (EDL1000)

In addition to the extensive text-based and face-to-face explanation of the major assignment task of this unit, students are provided with a newly designed self-directed intervention strategy: the three online assessment development workshops constructed and implemented in the Learning Activity Management System (LAMS, version 2.0) and made available via the LAMS-Blackboard integration developed by Macquarie University's ELearning Centre of Excellence

(MELCOE) in 2007. The integration of LAMS and Blackboard allows single login access for students using LAMS. A 'blog-spot' is made available on Blackboard (Bb), the enterprise learning management system used at ECU, where students comment on issues surrounding their learning activities and share information.

We believe that the learning design of this unit (*Becoming a Teacher*) is closely aligned with humanist-constructivist conceptualisations of 'quality education' as described above (see also Dobozy, 2007a). New and emerging technologies such as Camtasia and LAMS enable lecturers to experiment with learning designs and activities that provide improved and flexible access to 'just-in-time' information. It provides a means by which lecturers can gradually place the responsibility for learning into the hands of university students, without adding an undue stress burden on them. Therewith the lecturer's role is not only visibly changing from a transmitter of information to that of designer of particular learning environments that enable the construction of knowledge, but the learner (particularly the pre-service teacher) comes to experience and may learn to appreciate the changing role of 'teachers'. Technologies to support humanist-constructivist lecturers' diversity awareness, promote greater inclusivity by virtue of learning design features, and therewith enabling the 'education' rather than the 'teaching' of students, are needed more not less in the preparation of classroom teachers (Carden, 2007, Williams & Jacobs, 2004).

The Pilot Study

This pilot study was designed to investigate the research question: "How effective is the provision of 'just-in-time' virtual assignment help for novice students?" The 2008 cohort of students as predominantly school leavers were representative of the millennial generation and likely to show some of the characteristics of net generation learners. The students were accessing their units in Blackboard, the enterprise learning management system at ECU, and LAMS activities with embedded media were introduced as embedded activities within the Blackboard environment (Figure 2).

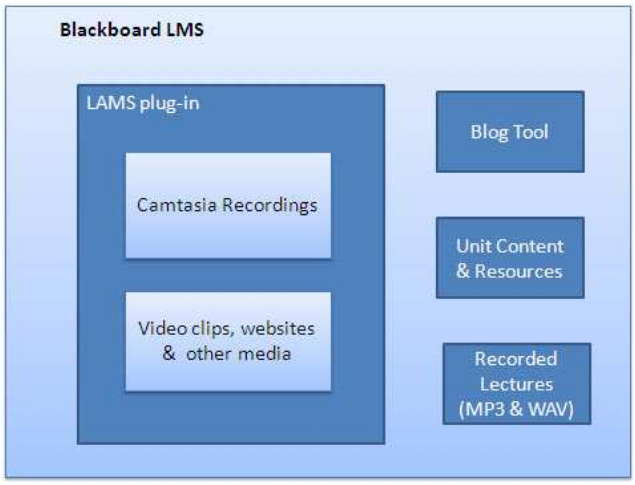

Figure 2. Embedded media in LAMS within a Blackboard unit.

The self-directed online intervention program (three assessment-development workshops) we developed was deliberately kept small in scale and simple in structure to assist students to gain familiarity with blended learning modes and learning objects presented in LAMS, and to reduce the students' cognitive load (see Figure 3). In all the assignment development workshops students were guided through four simple steps:

Step 1: students watch a short vodcast or video segment;

Step 2: students are invited to judge the usefulness of the vodcast or video segment through a voting activity;

Step 3: students are invited to engage in a multi-directional discussion through a forum activity;

Step 4: students provide feedback on the experience, including time requirements.

The basic LAMS sequence used in all three assignment help workshops is illustrated in Figures 3a & 3b.

Video segment (Noticeboard) – the lecturer models possible ways of approaching the assignment through decomposition and elaboration to reduce complexity

Voting activity – students are invited to 'take a stance' and provide feedback on the usefulness of this part of the online intervention program

Forum activity – students are invited to provide more personalised feedback on the helpfulness of the intervention to assist the further development of 'just-in-time' personalised assignment help models

Survey activity – students were asked about the usefulness, personal motivation and the time it took them to complete this intervention and if it helped to make the relationship between theory (work in unit – this assignment) and practice (their future teaching practice) explicit.

Figure 3a. Assignment help structure in LAMS.

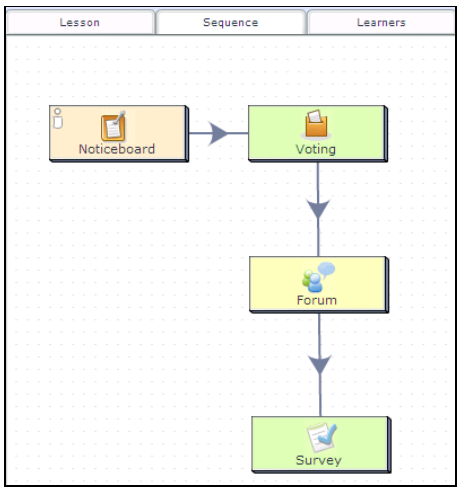

Figure 3b. Assignment help structure in LAMS

A series of short instructional videos were designed where students could view a video of the lecturer explaining the assignment tasks with the documents and relevant information appearing in the background as the lecturer highlights the key aspects for the students on screen. The basic Camtasia vodcast (video presentation) series was developed with Camtasia Studio version 4 and embedded into LAMS learning activities accessible via Blackboard. These represented a series of related and interdependent online workshops as follows:

Workshop 1: Researching your report – the lecturer guides students via a short video segment on how to research the topic and where to find relevant information in the unit handbook to prompt student thinking and engagement with a particular topic or theme of choice. This activity illustrates the focused search for information, navigating complexity and assist students with the development of conceptual and practical skills to start the assignment task (see Figure 4).

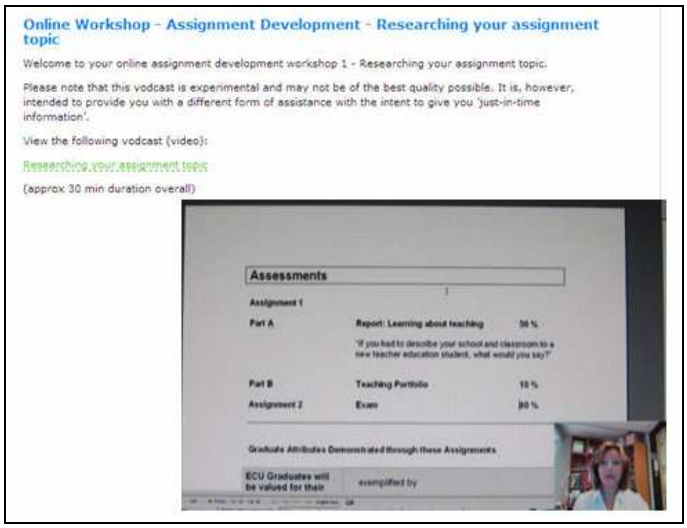

Figure 4. Workshop 1 - Researching your report.

Workshop 2: Structuring your report – the lecturer guides students via a short video segment on how the "learning about teaching" report should be structured, drawing particular attention to how the assignment is framed, explaining the marking rubric used and elaborating on the university grading scheme and its relationship to the demonstration of academic competence. Further information is provided on the importance of 'seeing' context and providing contextual information about the school and the classroom before proceeding with the exploration of a particular feature of the classroom or teaching strategy where students are invited to 'take a stance' and present their developing theoretical understand and their autobiographical experience and synthesise those into their personal viewpoint on the given issue or topic (see Figure 5).

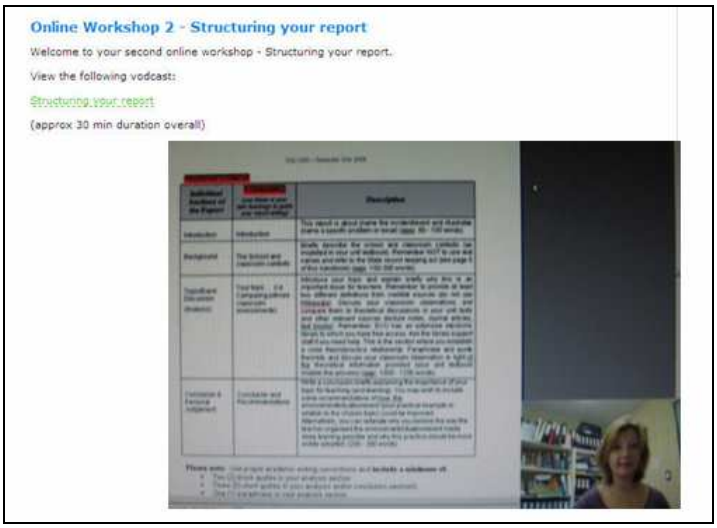

Figure 5. Workshop 2 - Structuring your report

Workshop 3: Submitting your assignment electronically – the lecturer walks the students through a step by step short video segment illustrating how students should submit their assignment when opting to submit electronically, locating the compulsory official assessment cover page, how to proceed to the unit Blackboard site and locate the 'digital dropbox' (see Figure 6).

Figure 6. Workshop 3 - Submitting your report.

Findings and discussion

As previously noted, multiple feedback loops were included into the design of the self-directed online intervention program to elicit students' views of the value-adding nature of the various parts of the assignment help model implemented. The first, a passive form of feedback, *the Voting activity* was followed by an invitation to provide a more open and active form of feedback, and so we thought, more specific and useful feedback strategy about this model, *the Forum activity*. The data shows that there was clearly interest from students (see Table 1a & 1b).

Table 1a. Student engagement with workshops.

	Workshop 1: Researching your assignment topic	Workshop 2: Structuring your report	Workshop 3: Submitting your report (online through Bb)
Attempted	186	128	82
Completed LAMS sequence	20	19	5
Voted	33	28	9
Forum replies	3	2	1
% of students that made use of this assignment help	75.91%*	52.24%*	33.47%*

n=245

*some students have withdrawn from the course, so this figure is only an approximation

Table 1b. Student engagement with workshops.

	Workshop 1: Researching your assignment topic	Workshop 2: Structuring your report	Workshop 3: Submitting your report (online through Bb)
Voting Total	33 (100%)	28 (100%)	9 (100%)
'Yes' for usefulness	25 (75.75%)	24 (85.72%)	9 (100%)
'No' for usefulness	1 (3.03%)	2 (7.14%)	0 (0%)
'undecided' for usefulness	7 (21.22%)	2 (7.14%)	0 (0%)

The results presented above illustrate that there is a general interest from students, but it may not be as strong as anticipated. The progressive drop in attempts to utilise the three online assignment help workshops may point to loss of interest or may reflect a pragmatic decision to not access the

workshop, because there was no need for it. The majority of students (93%) submitted their assignment as a hardcopy version, rather than opting to use the unit's electronic submission facility offered through Blackboard. A further important finding is students' way of utilising the self-directed intervention program. We may refer to it as students' 'semi-engagement' with the assignment help workshops. Although it was explained to students on numerous occasions that this is an 'experimental design', 'a beta-version' of a model of a possible low cost, self-directed just-in-time, personalised help and thus in great need of specific user feedback, the data clearly shows that only a few students felt an obligation to 'produce' feedback in form of a written comment, rather than simply 'consume' the information presented by the lecturer. Interestingly, many more students felt comfortable with the 'voting' option, where they were not required to identify themselves and did not need to actively contribute their opinion in a written feedback statement. In contrast, the forum discussion displayed students' actual names. This is a significant finding and needs further investigation. It may be possible to increase students' contribution by making the postings anonymous.

The Voting Activity

The 'voting' activity showed that all the workshops seemed to gain the approval of the majority of students who engaged with them (75.75-100%). However, seven students, representing 21% of voters, were undecided on the usefulness of *Workshop 1: Researching your report* and one student (3%) voted 'no'; two students, representing 7% of voters, were undecided on the usefulness of *Workshop 2: Structuring your report* and two students (7%) voted 'no'; dissimilarly, all nine students who engaged with *Workshop 3: Submitting your report electronically* found it useful. The LAMS monitoring function would allow us to investigate voting patterns further as it provides us with the names, dates and times of voters (see Table 1b and Figure 7).

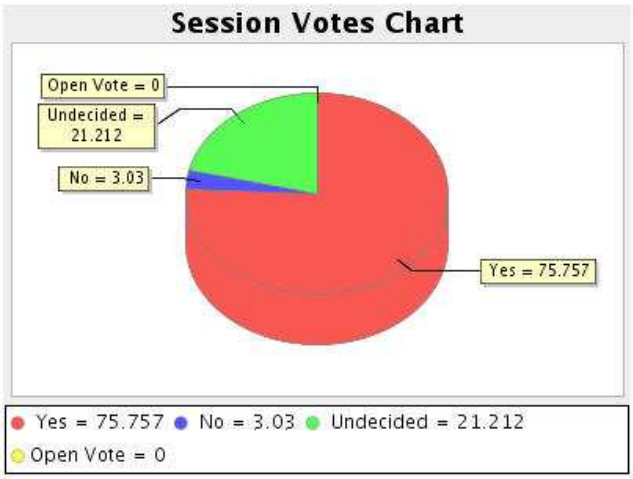

Figure 7. Workshop 1 - Voting activity.

The Forum activity

Only five students provided written feedback statements and only one student provided feedback for two workshops (Student B, see Table 2). We find it inopportune that so few students chose to leave written feedback about the three workshops, as student views are vital in our consideration of how we will adapt this model of self-directed assignment help intervention. All student comments are reproduced here:

Table 2. Students' written feedback.

Student responses to Workshop 1	
Student A	I enjoyed this vodcast as it did make it a lot clearer as to what is expected and does answer questions that arise as you are reading through [the unit handbook]. Little bit noisy and some thumping in the background.
Student B	The information was useful. However, I did think it was a little long so I didn't watch the whole thing, I only watched pieces. This is a whole new technological update for me: virtual seminars.
Student C	I found this very helpful. I have already chosen my topic but viewing this made things a lot clearer and I now feel a lot less panicked about the whole thing. I now feel confident that I will be able to go ahead and take things at a more step by step approach, and also related my reading (theory) to practice, which is great.
Student responses to Workshop 2	
Student B	It gave specific instructions on how to submit, which makes it super easy, no confusion.

Student responses to Workshop 3	
Student D	It was greatly helpful in the breakdown of the assignment and the expectations required by us all, especially by submitting it electronically, which sounds scary.
Student E	The vodcast was handy!!! It explained everything we needed to complete and write about in our report. It gave clearer guidelines of what is expected. Fantastic vodcast and great help!

Interestingly, a large number of students provided specific feedback on the self-directed assignment help intervention at the end-of-semester unit evaluation. When asked *What were the best aspects of the unit?* students commented as follows:

- "[The lecturer] has done extensive extra supporting workshops on LAMS"
- "[The lecturer's] podcasts and the step by step process for electronically sending assignments"
- "Great use of technology! I think I have accessed everything possible and it has helped me feel more confident in expectations for assignments and exam - as with podcasts I revisit and get a deeper dimension each time."
- I found [the lecturer] had scaffolded the unit and the assignment expectations for the unit well
- LAMS was definitely a great help for the assignments.
- The best aspect of this unit was the amount of help [we received] with the assignment.
- The help with the report.
- The report and the way it was set up. It helped me learn a lot and better understand the unit.
- Assignment easy to understand
- Having LAMS and BLOGS
- The extra help provided to us, mainly through the workshops
- The virtual workshops

There were also some negative comments made in the end-of-semester unit evaluation concerning the assignment for this unit, but specifically concerning the model presented here. When asked *What changes would you suggest for this unit?* A small, but not insignificant number of students commented as follows:

- I believe that there sometimes is not enough guidance with assignments and such. I prefer clear cut work that is easy to follow.
- More information needs to be given of what is expected of us in assignments
- Make sure all tutors watch [the lecturer's] how to write a report on LAMS, as my work was marked differently on what was explained in the video on LAMS
- More explanation of the assignment, in person, earlier.

The above comments are testimony of the diversity of our first year teacher education students and their needs. The critical comments provide great 'food for thought' and highlight the fact that there is an increased need for a systematic approach to the teaching of large student cohorts with six or more tutors whose digital literacy may also need attention. A significant number of students (and tutors) actively choose not to engage with emerging technologies for various reasons. These students may be in need of, and will seek out human-to-human interaction and specialised intervention that can be provided by trained academic learning advisors.

A (maybe not so) surprising discovery

Many of our students have to travel great distances to attend university and a constant chorus of comments in past years has been that they would prefer electronic submission provisions. Proving to be proactive in the integration of freedom of choice and flexibility in the assignment submission options, we were surprised that only 16 students chose to submit their assignments online through Blackboard. This figure constitutes approximately 6 % of all submissions. Inquiring about the reason for students' preference of hardcopy submissions, many commented that they do not 'trust technology' with something as important as their assignment. It is outside the scope of this paper to pursue this issue further, but it points to yet another issue that warrants closer inspection and investigation.

Conclusion

In this paper we described our attempt to help students with their assignment requirements in a first year teacher education unit through the development of a small-scale, self-directed assignment help intervention model. In this case example, first year teacher education students were first presented with a 25 minute vodcast segment recorded by the lecturer in Camtasia

(Workshop 1: Researching your report), which was designed to help student 'get started'. This practical introduction, which focused much on 'how-to-use the unit handbook' and provided assistance with 'research skills' was followed by a subsequent workshop of similar length that was designed to help students work through the organisation of text material and provided assistance with 'organisational skills'. This workshop focused on the importance of strategic linear thinking to trigger deep thinking and analysis to help students reflect on their autobiographical experiences as students and compare their experiences and observed teaching strategies with those documented in professional texts *(Workshop 2: Structuring your report)*. The final segment *(Workshop3:Submitting your report)* was designed to provide practical technical help with locating the required assignment submission cover and the subsequent online submission through Blackboard.

Our aim as teacher and research scholars was twofold: (a) to find ways to better assist our students navigate their way through complex assignments and lower the stress level of an increasing number of students who suffer from assignment anxiety, and (b) to embrace the challenges outlined by Kennedy *et al*. (2008) and others and begin to develop frameworks to measure the impact of particular intervention strategies for new generations of students. There is an increasing need to be explicit about the expectations of particular learning designs, their philosophical groundings as the current debates about 'quality education' bring to the forefront the divergence of opinions, values and beliefs. We will continue documenting the underlying beliefs that inform our experimentation and invite comments on our attempts to assist first year teacher education students increase their coping skills and educational outcomes through a close alignment of pedagogy with technology.

Based on these preliminary findings, we tentatively conclude that there can be a place for self-directed assignment intervention models similar to the one we described here. The model needs refinement and more elaborate testing. A next step will be to apply for research funding and gain institutional support. The political environment is conducive to this endeavor as large-scale engagement of people in higher education is currently high on the agenda in Australia and elsewhere.

Notes

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