

“All at sea”: An Activity Theory analysis of first year nursing students learning to write academic essays

Wendy Madsen, CQUniversity Australia, w.madsen@cqu.edu.au

Abstract

Learning to write an academic essay can be a daunting experience for a first year undergraduate student. This paper explores this experience using data collected from a survey of sixteen first year nursing students as part of a small teaching and evaluation project. It uses Activity Theory to guide my reflections on the process students undertake when learning to use the library and the protocols of academic writing, and to analyse comments made by students regarding the resources they accessed throughout their first term, and their perceived levels of confidence in this process. Activity Theory allows various aspects influencing the students in this process to be explored separately, as well as highlighting potential tensions within the system that need to be considered. In this instance, two internal tensions were revealed: individual ways of doing things versus prescribed process; and expectations of student participation in their own learning versus student behaviour accessing and using resources. This analysis provides insight into the process students work through during their initial months undertaking tertiary study.

Keywords: activity theory, first year, nursing

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Introduction

They seem to be everywhere these days – in the staff room, in examiners’ meetings, in casual conversations with other academics – murmurings about falling student literacy levels. It was for this reason I volunteered to coordinate a first term, first year nursing course. *I* was going to do something about the problem. Now in the fourth year of teaching this course, Foundations of Professional Nursing, I am perhaps no closer to “solving the problem,” but I have come to appreciate better the complexity of the process first year students experience as they learn to write academic essays. This paper uses Activity Theory as the framework for analysing that process. It draws on evidence gathered as part of a small learning and teaching evaluation project as well as my own reflections over the past four years. This analysis highlights two key internal tensions regarding first year undergraduate students learning to write academic essays: individual ways of doing things versus prescribed process; and expectations of student participation in their own learning versus student behaviour accessing and using

resources. These internal tensions, while not resolved in this paper, provide insight into the processes students work through during their initial months undertaking tertiary study, and challenge academics to consider the way we support students during this time.

Foundations of Professional Nursing was first offered in 2005 as part of the revised Bachelor of Nursing curriculum. It is a core course offered to first year nursing students in their first term at CQUniversity. The declarative knowledge of the course is related to the history of nursing over the past 150 years; however, a number of outcomes relate to procedural knowledge, particularly with regards to literacy and information literacy. In 2008, Foundations of Professional Nursing was taught via flexible delivery to over 300 students. It consisted of a print Study Guide which was also available on the Learning Management System, Blackboard; a variety of online resources to assist with literacy and information literacy aspects of the students' work as well as their understanding of the history of nursing; Blackboard discussion board and course journal; and a one hour videoconference lecture per week for students who could attend on-campus. In the final week of term, students were mailed a survey seeking information on the resources the students used throughout the term; and their perceptions and confidence levels regarding their use of the library and writing academic essays. The survey consisted of 50 closed questions as well as space for students to write comments. Sixteen students returned the survey. Such a small number of respondents limited the usefulness of statistical analysis so the qualitative data forms the basis of this paper. The comments provided by the students resonated strongly with my own observations of student experiences, not only in 2008 but in previous years as well. Activity Theory has provided a suitable framework to examine these experiences more closely.

Literature review

Although there is a perception that the literacy standards of undergraduate students have been declining in recent decades (Booth, 2005), it would appear the situation is by no means straightforward. Hannon (2000) points to evidence in the UK that the literacy levels of school leavers did not decrease over the 20th century. Rather, they remained the same while demands became higher. Flavell (2001) also notes the perception of falling standards of academic writing, but suggests that writing is different from expectations because students are different. While expectations regarding what counts as an "argument" or "evidence" is historically based, significant changes in the demographics of students attending universities have occurred over the past 20 years. Thus, there is a fundamental tension being revealed within the tertiary system; that expectations regarding academic writing and 'standards' no longer match the skill levels inherent in students commencing university studies for the first time. As such, academics have to choose between two options: change our expectations or try to change the students' skills and knowledge (Flavell, 2001). The first option would be unpalatable to most academics, thus leaving the second as the only alternative. This literature review considers the efforts and understandings of academics and educational researchers as to how better to prepare undergraduate students to meet the expectations associated with academic writing.

There are two approaches to teaching literacy and information literacy evident within the literature. The first is a more traditional one that teaches these skills separate from the course content. This approach has been used extensively to introduce students to the library – initially with face-to-face sessions, often in

orientation week or drop in sessions – but more recently via online environments (Manual, 2001; Markauskaite, 2006; Salisbury & Ellis, 2003; Silver & Nickel, 2007). There are a number of advantages of using an online environment, including increased flexibility for students so they can work at their own pace, at a time and place that suits them, and they can revisit their work at anytime to reinforce their learning, all of which can increase motivation (Cooney & Hay, 2005; Freebody, McRae, & Freebody, 2006; Hagston, 2005; Reece, 2007). Thus, students can fit their study lives in with their other obligations. Indeed, some students prefer online tutorials (Silver & Nickel).

The second approach is one that integrates the literacy and information literacy skills into the course content and assessment. Again, this can be done within an online environment whereby the academics work closely with library and other support staff to design materials that address both procedural and declarative knowledge. This approach is strongly recommended in the literature as encouraging students to contextualise the learning of literacy and information literacy skills and increasing critical thinking (Barnard, Nash & O'Brien, 2005; Bielema et al., 2007; Bond, 2004; Haines & Horrocks, 2007; Harley, 2001; Masters & Oberprieler, 2004; Meola, 2004; Shorten et al., 2001; Wallace et al., 1999), particularly if these skills are integrated into assessment pieces (Kinsey & Cameron, 2005; Scott et al., 2000; Willmer, 2005). It is this approach that is taken when teaching Foundations of Professional Nursing. Furthermore, there are a number of studies that indicate no learning differences for information literacy skills between face-to-face and the online environment (Salisbury & Ellis, 2003; Silver & Nickel, 2007). This has important implications for teaching Foundations of Professional Nursing, as approximately 50 percent of the students are not within an easy distance of a CQUniversity campus, making face-to-face sessions impossible to attend.

The importance of contextualising literacy and information literacy skills is highlighted by Flavell (2001), who suggests writing is not a fixed notion; that the production, reading and judgement associated with writing academic essays is a formative and dynamic process for both lecturers and students, that is, academic writing is essentially a socio-cultural activity that is influenced by the writing skills, experience and understanding of the process by academics and students alike. Flavell argues writing is “situated” in a particular context (particular course, in a particular university, in a particular country), encompassing social, cultural, historical and psychological factors at play. As such, he suggests Activity Theory offers a means of analysis to understand this dynamic process better.

Activity Theory has its origins in the writings of a 1920's Russian psychologist, Vygotsky. Roth and Lee (2007, p. 188) suggest Activity Theory is academia's “best kept secret” but it has gained considerable attention in the past decade, particularly in teaching and learning contexts, as it takes a more holistic approach and therefore addresses a number of deficits evident in other educational theories. Indeed, they suggest Activity Theory is at its best in “messy” situations – at analysing poorly understood processes of developmental transformations over time. Roth and Lee provide an extensive review of the literature in regards to Activity Theory, as does Daniels (2001) and Flavell (2001). This brief overview of Activity Theory, rather than reiterate these works, aims to highlight those aspects within the literature that are particularly pertinent to this paper.

Flavell (2001) outlines the various generations of Activity Theory as it has become more comprehensive. For the purposes of this paper, the second generation model

has been used as the basis of the analysis (see Figure 1). Subsequent generations take this simple model and extrapolate into more complex situations, which are not necessary for this analysis, although it is acknowledged the contexts within which this model is used here will have various levels of influence. Fundamentally, Activity Theory attempts to illustrate the relationships between various factors within a human activity system, in this case the system associated with academic writing.

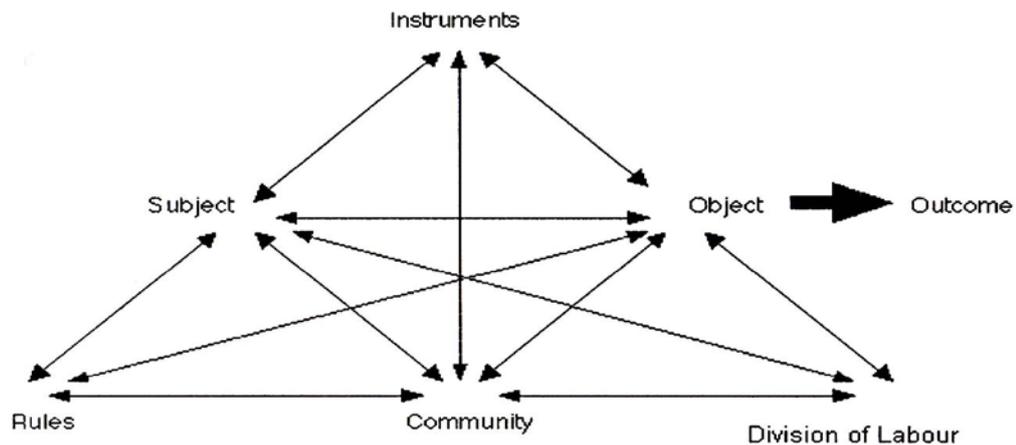


Figure 1 Model of a human activity system (Engestrom, 2000, p. 962)

Brine and Franken (2006) have used Activity Theory as the basis of their analysis into students' perceptions of a computer mediated academic writing program, coding reflective journal entry data according to the components of the model. This allowed the researchers to more fully appreciate the tensions and difficulties negotiated by students when using an online tool to learn the processes associated with academic writing. Hew and Cheung (2003) looked at the triads within the model as the basis of their evaluation of online learning communities using asynchronous discussion forums. Joyes (2006) has used Activity Theory as the basis of devising questions for a preparatory tool for tutors – the Learning Activity Analysis Tool – to help them with learning to teach and interact with students in an online learning environment, but suggests the tool can also be used as the basis of research.

Other studies have focused on a particular aspect of the model. For example, Gordon, Petroxy, and Reid (2006) focused on the use of tools or instruments within a variety of learning contexts, noting there was a commonality among those teachers who used Activity Theory; they have a philosophical approach that is non-dualist in understanding the formation of the human mind and society. Indeed, these teachers used tools to help students make connections that have social relevance. In particular, they saw tools as helping to establish a community when teaching in an online context, but note the problems associated with this environment, especially the lack of emotion usually associated with Web based text. Finally, Jonassen and Rohrer-Murphy (1999) note that Activity Theory can be used as the basis of educational design allowing the context of the community to be incorporated into the designs.

Discussion

Activity Theory demonstrates a number of factors influence the final outcome. Each of these factors will be explored separately here using the comments students provided on the survey and my own reflections. An important aspect of Activity Theory is to identify inherent tensions between the various factors or components of the model. These will be identified and discussed after the individual components have been examined.

Subject

The subject of this activity system is the student. Although the students who responded to the survey were slightly older and more experienced with the higher education sector than would be expected in a CQUniversity undergraduate course, in most respects they typified nursing students. They were mostly female (94%), with many (37%) studying away from a main campus. In keeping with the increasing focus of using the Internet as a teaching medium within CQUniversity, 80 percent had access to Broadband at home.

Instruments/tools

Instruments or tools are a significant focus for those teaching in an online environment. The tools identified for Foundations of Professional Nursing include the Blackboard resources, the Study Guide, and example assessments. In many respects, the tools made available to students consist of one of the few components of the Activity Theory model the teacher has any real control over; the other components being more strongly influenced by external factors. How teachers view these tools depends very much on an individual philosophy of teaching. Gordon, Petoxz, and Reid (2006) contend that tools (the structures and artefacts that are introduced) can help students learn and are consistent with a philosophy that learning is something the student does, rather than the teacher being the tool, “filling an empty vessel” (Biggs, 1999, p.). As such, the tools offered to students need to address a range of learning styles if the student is to engage with the material. It is not possible to meet the learning styles and needs of all students; however, the resources offered for Foundations of Professional Nursing catered to a number, including the textbook, the Study Guide activities, PowerPoint slides (photographs) with voiceovers, and a videoconference lecture. Thus students who preferred or engaged better with text, visuals, audio or activity should have found something that suited them in the study materials. This is reflected in comments made by students, including:

I found the set up and content on Blackboard extremely helpful. Content, such as lecture powerpoints, was well organised and constantly updated.

Once I learnt my way around Blackboard, I accessed it most days. I found it an essential means of find out a host of information regarding the assignments for NURS11146. I found the communications, resources and study materials folders necessary for what I required.

I am a very visual learner and [the lecturer’s] examples of essays and plans were the best help. Better than the audios.

However, because of the online nature of Blackboard, not all students utilised it to the same extent.

As a mature age student not well skilled in computers, I have found the online aspect of the subject less rewarding than attending lectures.

I only have access to dial up, so computer use very slow. For me, even spending > 12 hours per week on the subject didn't allow time to access Blackboard lectures etc.

A number of researchers have identified the main threat to student learning within an online environment relates to the technology used to create this environment. In particular, the useability of the interface, access to computers and networks (including slow connections associated with dial up), and reliability of platforms create the biggest technological upsets (Bury & Oud, 2005; Freebody, McRae & Freebody, 2006; Reece, 2007; Manuel, 2001; Silver & Nickel, 2007; Snyder, Jones, & LoBianco, 2005;). However, most of these studies do not identify unfamiliarity with computers as a factor. As many of the students undertaking Foundations of Professional Nursing are not 'technologically-savvy', this can create a significant barrier to their learning, and is one that is generally addressed on a one-to-one basis between the Course Coordinator and the student.

With regards to literacy and information literacy skills, the students in the sample overwhelmingly found the assignment preparation segments at the end of each module of benefit, with 87 percent indicating they were very or mostly useful. These segments outlined various skills needed to complete assessments throughout the term and consisted of text, an audiovisual (could be downloaded as film or audio only), and an activity. The segments covered: Brainstorming; Search Strategies; Databases and Catalogues; Evaluating Information; Taking Notes; Organising Thoughts; Writing a Thesis Statement and Plan; Constructing Paragraphs; and Introductions and Conclusions. Assessment activities focused on using library online databases and planning an essay, respectively, throughout the term and the end of term essay brought all skills together. These segments were constructed with significant input from library and Communications Learning Centre (CLC) staff, and reflected information normally provided to students by these staff in formal and informal sessions. The advantage of this information being online relates to increased accessibility for more remote students, and being able to play the segments repeatedly; however, not all students felt sufficient details were provided.

The step by step guide to writing the essay in Assessment 1.1 – 1.3 really great. I would never have gotten the grades without them.

Essay preparation – definitely helped by the Assessment 1.1, 1.2 and 1.3.

I don't think I could have done this subject without Blackboard and the audiovisuals. The prompt reply and examples shown by [the lecturer] were a lifesaver. I had no idea coming into uni how to write essays etc. so I really appreciated the examples on the discussion board and the steps along the way to guide me.

Assignment preparation not detailed enough on what to expect.

The success of these segments may partly explain why the students surveyed did not indicate extensive contact with library and CLC staff. Furthermore, library and CLC staff made anecdotal comments they had had fewer enquires overall compared to previous years.

Community

Within Activity Theory, ‘community’ can be viewed from a macro and micro perspective. With regards to Foundations of Professional Nursing, one of the aims is to prepare students to enter the professional nursing community; however, on a daily basis, the community these students interacted with over the term are each other, the Course Coordinator and other CQUniversity staff, librarians, CLC staff, other students and their friends and family. As the students are scattered over a wide geographical area, their sense of community was very much centred on Blackboard, and in particular the discussion forums. Holt, Smissen, and Segrave (2006) suggest teacher modelling and attitude is an important influence in constructing an environment conducive to student learning in an online context. As Course Coordinator and therefore, the main correspondent on the Blackboard discussion board, I needed to be aware of my own behaviour and attitude in constructing that community for students.

Knowing that everyone was going through the same thing as you, was reassuring. Even though I was unable to participate, probably due to lack of computer knowledge, it was very useful. Sometimes I felt sorry for the lecturer with some of the questions that were asked, if people could just read.

Creating that sense of community within a short time frame, whereby students feel comfortable to ask questions of staff can be difficult, but it is essential in order to optimise student outcomes. Students who were closer to campuses possibly had an advantage over their more remote colleagues, as they were able to meet librarians and CLC staff personally, and were perhaps more likely to engage with the literacy and information literacy skills; however, many students living away in more remote areas did make the effort to contact various staff to help them.

The organised sessions regarding the library databases were invaluable for my assignment in NURS11146, as well as other internal subjects (internal student).

At first I was completely ‘at sea’ using the library, now I have a lot more confidence in my ability to search through the library’s databases. When I did have problems accessing information, I emailed the librarian who promptly answered my query with the relevant information I needed (external student).

I spent a morning in the library to print off a dozen journal articles. The staff were v. helpful (internal student).

Still having some trouble with finding specific information but will ring [the librarian] if I get stuck on something. My problem is I can’t be on the phone and computer at the same time due to the remote area I live in. No land line and patch arials [sic] to the roof for mobile phone and wireless broadband can only be on one at a time (external student).

I feel the good back up help is needed to do this course by distance ed.
The lecturers also need to be approachable and the student needs to
feel this is so.

The friendly response students received when they did access their available
community helped make them feel more comfortable and confident with their
progress. Students did use other people (Course Coordinator, other first year
students, and other students) to help them with their library and writing skills, but
these were not accessed as frequently. Building that sense of community will
continue to be a challenge when teaching in an online environment.

Rules

Learning the expectations of academic writing is one of the biggest challenges
students face when first entering the tertiary sector. Traditionally, students were not
told what these ‘rules’ were and were left to work them out themselves. With the
changing demographics of the student population, and the realisation that academic
writing should not be ‘secret’, a more overt approach to academic writing is now
apparent in the literature. This means that academics themselves need to know
what these rules are, but as Flavell (2001) suggests, many do not. Instead, there is a
tendency to leave these things to librarians and CLC staff, an approach consistent
with the traditional isolated rather than integrated view of teaching literacy and
information literacy. However, while CLC staff can provide feedback regarding
structure, they are restricted in their ability to comment on content, but it is the
integration of content with structure that creates the essay. Thus, the ideal situation
is to have academic staff work closely with library and CLC staff so the marking
and feedback provided to students is consistent with advice provided by these staff.
This is very beneficial for students who are still ‘learning the ropes’.

Assignment writing was scary at first since its been a long time since
doing one. But due to the interest and enjoyment of this subject that I
have found it challenging but somewhat easy. I wanted to write and
write well.

This course, the way it is laid out, was a great introduction to nursing
and assignment writing and university in general. I hope the rest of my
studies are this interesting.

At the beginning of term, I was quite concerned regarding my ability
to write assignments. Now the term is close to conclusion, I have a lot
more confidence in assignment writing, due to the information I have
read through this course, this information has helped me with writing
assignments for my other courses.

Found the model for Essay Prep very useful and will be using this
model for further studies. Showed me how to time prep for essay
instead of rushing it.

While writing can be viewed as being “situational” (Flavell, 2001), and there is the
risk that the “rules” learnt in one course are not necessarily transferred to another,
the comments from the students would suggest this is not always the case. Thus,
taking an integrated approach to teaching literacy and information literacy rules,
provided those rules are overt for students, can result in students transferring these
skills to other courses.

Division of labour

While the Course Coordinator takes an obvious role of setting assessment tasks, providing appropriate resources, ongoing support and useful feedback, students also have responsibilities in this process. These relate to accessing and using the resources that are available, participating within the community by asking questions and clarifying issues, and considering the feedback provided on assessment pieces. The cohort of students in this study did not always behave in this way. For example, a small number of students indicated they did not access any parts of Blackboard throughout the term (presumably other than to submit their assessments), making it difficult to benefit from the resources available on Blackboard or to participate in a learning community. Biggs (1999) is a strong advocate of teachers presenting learning opportunities that engage the students, both in terms of assessment and in terms of the content and avenues of presenting that material. While a variety of resources and activities were made available in Foundations of Professional Nursing hoping to appeal to different learning styles and personalities, students do need to access these in order to choose. A clear example of these differing preferences can be seen in the student responses to the Study Guide Revision Activities which consist mostly of puzzles.

Enjoyable and easy to follow. Loved the puzzles, it was sought [sic] of relaxing but learning at the same time.

I found the readings informative and useful and the secondary sources of reading but the puzzles, crosswords, not into them at all, sorry.

Object

The final component of the Activity Theory relates to the object of the activity that leads to the eventual outcome. For this study, the object was increased literacy and information literacy skill and confidence to allow them to pass not only Foundations of Professional Nursing, but other courses in their program of study as well (outcome). The survey results indicate considerable improvements in student perceived levels of skill and confidence with both using the library and in writing essays. At the beginning of term, half of the students indicated they had no confidence in using the library at all, but none indicated this at the end of term. Similarly, just under half indicated they had no confidence in writing an essay at the beginning of term, and although one or two continued to feel this way at the end of term, most students indicated they had improved these skills throughout the term. This is also reflected in their comments.

The activities throughout NURS11146 have been extremely valuable in organising my assignment writing and improving it to a university standard.

Yes, my confidence has grown in the area of assignment writing, as I feel I am a student who benefits from choosing a clear cut TS (thesis statement) for an essay, and reading broadly for the program helps there when deciding what you think. My summaries need work, but of all I enjoyed my essay writing.

The lecturer projected a confidence about my work and it made me achieve a lot more. I felt I learned a lot that is very essential in managing a university course. I feel that with what I learned I can manage pretty well in the future.

Inherent tensions

Advocates of Activity Theory highlight the issue of inherent tensions between various components of the model as fundamental to producing change (Daniels, 2001; Flavell, 2001). There are two tensions that can be identified from this study. The first relates to individual ways of doing versus a prescribed process of trying to follow the ‘rules’. Flavell describes this as indoctrination versus multiplicity of perspectives. With regards to literacy and information literacy, this tension relates to the two options outlined at the beginning of this paper of accepting different skills and knowledge or working towards changing the skills and knowledge of students to align them with historically developed “expectations.” While this does not have to be a dichotomy and some academics are more open to accepting differences than others, the approach taken in Foundations of Professional Nursing is to provide students with the traditionally accepted ‘rules’ and to encourage them to follow the expectations. This has been a challenge for some students not familiar with developing search strategies in order to search the library, or writing plans and thesis statements before writing the first draft of the essay; however, this approach does open up avenues for students they may not have considered before, and it just may help them save time and energy.

I was forced to construct an essay according to a formula and didn’t want to do it but it was a requirement. The outcome was that I actually learned the best and quickest way to construct an essay and it was the most helpful thing overall.

The second inherent tension that emerges from this study is the expectations of student participation in their own learning versus student behaviour accessing and using resources/feedback. While the majority of students who responded to the survey indicated they accessed the resources, a number could be described as ‘lurkers’ – accessing and reading Blackboard activities and resources, but not actively participating within the learning community created on Blackboard. This can be related to a number of issues: lack of computer skills and confidence; lack of computer access; lack of sense of community; and lack of understanding what is expected of students in the first place. While students lead very busy lives, and have many outside responsibilities that impact significantly their ability to fully participate in their own learning, this can perhaps be best addressed by building that sense of community more. This is exemplified in one student’s comments that suggest a sense of isolation that negatively impacted her ability to engage with the study material.

For me personally, I found it hard to keep motivated studying this subject in flex mode – a very dry subject over a long period of time..... In the past I have enjoyed studying history when it has been ‘brought to life’ by a group exchanging ideas and interpretations in discussions. My attempt to bring nursing history to life in the assignment essay was not successful.

While this was only one student’s experience, and quite contrary to the experiences outlined by the majority of the students who responded to the survey, it is a timely reminder of the limitations of an online learning environment and the lack of emotional responses associated with this medium (Gordon, Petoxz, & Reid, 2006), and creates the challenge to academics to continue to work on ways and means of improving the teaching and learning experiences when working in an “electronic classroom.”

Conclusion

The small number of respondents within this study significantly restricts the ability to form generalised conclusions from the findings; however, consideration of the issues according to Activity Theory has opened up a number of aspects that could be explored with further research. First, the importance of creating a welcoming and productive community within an online environment has been highlighted as an important component in student learning. As the creator and gatekeeper of Blackboard, the Course Coordinator plays a significant role in this aspect and needs to be aware of his/her own attitudes towards the technology that construct the environment, and be cognisant that students may not have the same levels of familiarity or skills with electronic media. Second, the importance of providing students with a range of learning opportunities and resources to allow them to pick and choose what best suits their particular learning style is fundamental to effective learning. This can be readily accommodated within an electronic medium, with the exception of intimate face-to-face interactions – something that does not suit all learning styles, but is increasingly relegated to the past. Furthermore, online, asynchronous modes allow students to access these opportunities and resources at a time and place that best suits them. Last, the inherent tensions revealed in this analysis highlight the need for academics to be aware of their own expectations and impositions on students; the extent to which we accept the differences in students – differences in ways of doing and knowing, differences in approach, differences in behaviour – and the extent to which we encourage or force students to assimilate to historical expectations. With respect to literacy and information literacy skills and knowledge, there is an expectation that students should learn and adhere to ‘academic standards’. As such, it is imperative academics provide novices with adequate navigating compasses and a seaworthy vessel if we are to expect them to successfully negotiate their way through the oceans of writing that await them.

References

- Barnard, A., Nash, R., & O’Brien, M. (2005). Information literacy: developing lifelong skills through nursing education. *Journal of Nursing Education*, 44(11), 505-510.
- Bielema, C., Crocker, D., Miller, J., Reynolds-Moehrle, J., & Shaw, H. (2007). Faculty and librarian collaborations: a case study and proposal for online learning environments. *Research Strategies*, 20, 334-345.
- Biggs, J. (1999). *Teaching for quality learning at university. What the student does*. London: Society for Research into Higher Education & Open University Press.
- Bond, C.S. (2004). Surfing or drowning? Student nurses’ internet skills. *Nurse Education Today*, 24, 169-173.
- Booth, A. (2005). Worlds in collision: university tutor and student perspectives on the transition to degree level history. *Teaching History*, 121, 14-19.
- Brine, J., & Franken, M. (2006). Students’ perceptions of a selected aspect of a computer mediated academic writing program: an activity theory analysis. *Australasian Journal of Educational Technology*, 22(1), 21-38.

- Bury, S., & Oud, J. (2005). Usability testing of an online information literacy tutorial. *Reference Services Review*, 33(1), 54-65.
- Cooney, K., & Hay, I. (2005). Internet-based literacy development for middle school students with reading difficulties. *Literacy Learning*, 13(1), 36-44.
- Daniels, H. (2001). *Vygotsky and pedagogy*. London: Routledge & Falmer.
- Engestrom, Y. (2000). Activity theory as a framework for analysing and redesigning work. *Ergonomics*, 43(7), 960-974.
- Flavell, R. (2001). *Writing, reading and judging academic essays in a global university: an activity system analysis*. Unpublished Doctor of Philosophy, Monash University, Melbourne, VIC, Australia.
- Freebody, P., McRae, D., & Freebody, K. (2006). The Le@rning Federation's on-line initiative: Lessons from teachers on change, technologies, and learning English and literacy. *English in Australia*, 41(1), 48-56.
- Gordon, S., Petoxz, P., & Reid, A. (2006). *Tools, artefacts, research and pedagogy – stories of international statistics educators*. Paper presented at the Australian Association of Research Education International Education Research Conference. Retrieved May 8, 2008, from INFORMIT database.
- Hagston, J. (2005). The internet in learning literacy: are you game? *Fine Print*, 28(1), 9-11.
- Haines, M., & Horrocks, G. (2006). Health information literacy and higher education: The King's College London approach. *Library Review*, 55(1), 8-19.
- Hannon, P. (2000). *Reflecting on literacy in education*. London: Routledge & Farmer.
- Harley, B. (2001). Freshmen, information literacy, critical thinking and values. *Reference Services Review*, 29(4), 301-305.
- Hew, K.F., & Cheung, W.S. (2003). Models to evaluate online learning communities as asynchronous discussion forums. *Australian Journal of Educational Technology*, 19(2), 241-259.
- Holt, D., Smissen, I., & Segrave, S. (2006). New students, new learning, new environments in higher education: Literacies in the digital age. Paper presented at the 23rd Annual Ascillite Conference. Retrieved November 23, 2007, from INFORMIT database.
- Jonassen, D.H., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology, Research and Development*, 47(1), 61-79.
- Joyes, G. (2006). *An activity theory approach to the exploration of tutors' perceptions of effective online pedagogy*. Paper presented at the 23rd Annual Ascillite Conference. Retrieved November 23, 2007, from INFORMIT database.

- Kimsey, M.B., & Cameron, S.L. (2005). Teaching and assessing information literacy in a geography program. *Journal of Geography*, 104(1), 17-23.
- Manual, K. (2001). Teaching an online information literacy course. *Reference Services Review*, 29(3), 219-228.
- Markauskaite, L. (2006). Gender issues in preservice teachers' training: ICT literacy and online learning. *Australasian Journal of Education Technology*, 22(1), 1-20.
- Masters, K., & Oberprieler, G. (2004). Encouraging equitable online participation through curriculum articulation. *Computers & Education*, 42, 319-332.
- Meola, M. (2004). Chucking the checklist: A contextual approach to teaching undergraduates web-site evaluation. *Portal: Libraries and the Academy*, 4(3), 331-344.
- Reece, G. (2007). Critical thinking and cognitive transfer: Implications for the development of online information literacy tutorials. *Research Strategies*, 20, 482-493.
- Roth, W.M., & Lee, Y.J. (2007). Vygotsky's neglected legacy: cultural-historical activity theory. *Review of Educational Research*, 77(2), 186-232.
- Salisbury, F., & Ellis, J. (2003). Online and face-to-face: evaluating methods for teaching information literacy skills to undergraduate arts students. *Library Review*, 52(5/6), 209-217.
- Scott, C.S., Schaad, D.C., Mandel, L.S., Brock, D.M., & Kim, S. (2000). Information and informatics literacy: Skills, timing and estimates of competence. *Teaching and Learning in Medicine*, 12(2), 85-90.
- Silver, S., & Nickel, L. (2007). Are online tutorials effective? A comparison of online and classroom library instruction methods. *Research Strategies*, 20, 389-396.
- Shorten, A., Wallace, M.C., & Crookes, P.A. (2001). Developing information literacy: A key to evidence-based nursing. *International Nursing Review*, 48, 86-92.
- Snyder, I., Jones, A., & LoBianco, J. (2005). Using ICT in adult literacy education: Guidelines for reform. *Literacy & Numeracy Studies*, 14(1), 17-32.
- Wallace, M.C., Shorten, A., Crookes, P.A., McGurk, C., & Brewer, C. (1999). Integrating information literacies into an undergraduate nursing programme. *Nurse Education Today*, 19, 136-141.
- Willmer, M. (2005). Promoting practical clinical management learning: The current situation about information and communication technology capability development in student nurses. *Journal of Nursing Management*, 13, 467-476.