Does a Military Academy Promote Student Learning?

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Abstract
Learning outcomes are influenced by the environment in which the learning takes place. This article briefly describes how a military academy environment tends to promote pedagogical preferences and surface learning approaches. A plan to validate this proposition and then to overcome it is outlined.

I teach information systems to undergraduate students at the Australian Defence Force Academy. I believe that the military academy environment is strongly affecting my ability to develop excellent educational outcomes for my undergraduate students. This observation is not meant to be a casting-of-blame and washing-of-hands. Rather, this article outlines why I believe that this is true and then sets the agenda I will adopt to overcome this constraint. Hopefully, it will resonate with other educators in military academies.

In this article, I briefly present my reflections on the impact that the military academy environment has on teaching undergraduates, specifically, teaching them the fundamental knowledge and skills to design and build databases. First, I set the scene with some reflection on my starting point; how did I come to be here and what does that give me as a starting point? Then I relate some important factors that the environment in which I am making this journey brings to bear; specifically the environment of a military academy. After that scene-setting, I describe the course that I am using as a benchmark by which to measure my learning progress, how the course has evolved and why. It is on this basis that I describe my reflections and come to reveal the most recent insights I have attained about teaching in a military academic environment.

Author's Background

I have previous experience in training and educating people in the university, technical and further education (TAFE), community education, and workplace environments. My background leaves me with Haggis's (2002, 210) "complex mix of ideas, values, and experience that are only selectively influenced by formal theory." I categorise myself as a Constructivist sympathiser (Merriam & Caffarella, 1999) and feel that much of my approach to education to date has lacked the powerful result that I believe all learning should provide: changing the way we perceive reality. As Merriam and Caffarella (1999, 249) understate it, characterising learning only as a change in behaviour "fails to capture some of the complexities involved." My first real experience as a teacher at the tertiary level has all been at the Australian Defence Force Academy.

The Australian Defence Force Academy (ADFA)

The Australian Defence Force (ADF) is committed to highly trained, well-educated officers (McLachlan, 1997). The ADF maintains a dedicated educational institution, ADFA, at which a range of education is delivered. This might best be described in three levels: military training, academic education, and professional studies (Smith, 1997). At ADFA, both military training and academic education are provided to officer cadets (undergraduate). Professional studies are also offered, largely to post-graduates. ADFA offers degrees in Arts, Science, Engineering and lately Business, as well as an extensive array of post-graduate awards. The educational aspects of ADFA are managed and delivered for the ADF by the University of New South Wales.

Military training in Australia is still based on instructional system design (ISD) approaches (Keating, 1997) that tend to involve repetition of skills until they are faithfully and

automatically repeated to exacting standards (Thompson, 1991; Toiskallio, 2002). This exemplifies the idea that training aims to create an inbound trajectory targeted at competence in a specific practice (Toiskallio, 2002): “the application of violence” (Smith, 1997, 154).

In contrast, academic education requires personal engagement and it opens possibilities for the development of identity (Toiskallio, 2002). Its essential function is to develop generally applicable intellectual competency (Smith, 1997) and is held as quite distinct from military training (Keating, 1997). Importantly, it is expected to develop characteristics such as critical thinking, analysis, judgement and an ability to cope with high levels of ambiguity (Keating, 1997; Smith, 1997; Toiskallio, 2002).

My Benchmark Course

The course that I am using as my yardstick is a core second-year course in the major in Information Systems (IS) offered by the School of Information Technology and Electrical Engineering at ADFA. It focuses on the design and construction of small-scale computer databases. The course has a strong skills orientation, although the application of the skills being taught is based on theory (knowledge) that is seen as critical background for correct application. The course is offered in the structure of three contact hours per week over a single semester (usually 13 weeks) with an expectation of at least three hours of self-directed study or assignment work each week.

I began the first offering of the course already conscious of the distinction between the surface and deep approaches to learning and, with my constructivist leanings, viewing deep learning as the only valuable result of an educational experience. Consequently, I attempted to encourage my 35 students to adopt a deep approach. I provided a range of alternative media through which necessary background knowledge could be accumulated (eg, lecture, textbook, website), provided opportunities for interaction (mostly with me, but some work in groups of three to six) in tutorials, lectures and laboratories, and set assessment based on project work and problem solving. My reflection on the students’ approaches and the analysis of a short evaluative survey led me to believe that I failed to lead students away from the “dark side” (the surface approach), with one or two possible exceptions. It is some small comfort that Marton and Saljo (1997) suffered a similar lack of success when trying to directly encourage a deep approach.

After that initial disappointing attempt to encourage student engagement and ‘real’ learning (equivalent to at least level four of Gibbs’ (1992) five levels of learning—learning as… (1) increase in knowledge, (2) memorising, (3) acquiring facts or procedures, (4) making sense, and (5) understanding reality) I undertook more formal course work on student learning and teaching strategies and developed further my teaching and learning philosophy.

The second offering of the course involved a complete redevelopment of the course aimed at providing an environment in which the students would tend to adopt deep approaches to learning the subject. The new structure presented the course in longer tutorial sessions with ‘mini-lectures’ interspersed as needed and laboratory sessions for practical skills training. The other change was to limit class sizes to 12, which required offering three repetitions of each contact period. The course revolved around a non-trivial real-world case (a volunteer job placement system for the peak volunteering organisation in the state) from the first lesson and were expected to adopt self-paced, self-directed learning techniques from within the course resources (and any others they could discover, for example, non-prescribed texts, websites, etc). I provided brief introductory elements in each lesson in the hope that by half-way through the course the students would be independently learning the bulk of the material I might have presented.

Contact periods provided opportunities for the students to work together in small groups and provided access to the accumulated learning resources from which they could develop the

knowledge and skills they felt they needed to achieve the course objectives of understanding database design and developing the skills to build workgroup-scale databases. Also, the use of the single, information-rich, seminar room was designed to encourage students to recognise a shift in approach in learning and teaching in this course. Inside the seminar room, teaching and learning follows my approach; outside, things may be different.

Reflection

In summary, my first attempt at encouraging deep learning had centred on providing a range of alternative resources to accommodate different learning modes and the use of project-based assessment. The otherwise 'classical' structure of lectures, tutorials, and laboratories, and my lack of experience, combined to thwart what little encouragement I might have included. My own perceptions and feedback (both formal and informal) from students validate this conclusion. My second attempt was better. The evidence from evaluation feedback and the improved quality of assessment submissions indicated that students were more engaged with the material (particularly through, and because of, the real-world case) and they did exhibit more frequent adoption of deep learning approaches.

One important observation from my reflection on the course is that the students struggle to overcome the difficulties of mastering the tools through which the conceptual knowledge is displayed, but do not attempt to struggle with the conceptual knowledge itself. This course is designed to teach them the fundamental knowledge and skills to design and build databases, not the specific skills needed to operate one database toolkit. The student's engagement with the concrete issues of learning the tool was palpable and strong. That engagement was more positive than their engagement with understanding the intricacies of (say) normalisation to be certain that whatever tool was selected would provide consistent, accurate answers. I think that the practicality of struggling with the tool is more concrete to the students than the more abstract 'perfection' of a well-designed, but unimplemented, database. The correspondence between the need for training to conquer a skill for one tool and the nature of attaining skills in military tools/weapons is important too. It suggests to me a preference for such learning tasks born of the environment of their learning. But this important observation did not throw any real light on why I could not engage my students in deep learning.

I have read articles covering the two main fields of learning literature: student learning (Biggs, 1990, 1999; Gibbs, 1992; Marton & Saljo, 1997; Ramsden, 1992) and adult learning (Boud, 1987; Boud & Miller, 1995; Candy, 1991; Dean, 1994; Galbraith, 1996; Knowles, 1984). A key distinction between the teaching responses to each of these two types of learners seems to be where my major hurdle lies: when does a 'student' become an 'adult'?

Reading in military education literature led to an epiphany about the course structure and my approach. I read:

> The pedagogical model is concerned with teaching *content*, that is: (a) what subject will be taught; (b) how many teaching units it will take; (c) what sequence of instruction is logical; and (d) what means are the most efficient to transmit the subject. The andragogical model is primarily concerned with the learning *process*, that is: (a) facilitating the learning of the subject by creating a humane climate conducive to learning, where there is respect and trust between learner and facilitator; and (b) involving the learner in mutual planning of activities and self-evaluation of learning (Matthews, 1991, 4).

Suddenly I realised that perhaps the weakness in my course is a dominantly adult-learning style when my students are still most suited to pedagogical approaches. I have structured a course that aligns closely with the implications of the Andragogy view (Knowles, 1984; Kerka 2002; Baumgartner 2003) of learners:

- I have sought to encourage my students to self-directed learning

- I have tried to draw on their own experiences and insights
- I have attempted to make the skills and knowledge developed immediately applicable by integrating them into solutions for 'real-word' problems, and
- The entire course is structured towards problem-centric education.

In reflecting on the two offerings of the course, I realise that the students have stoically presented the Pedagogy assumptions (Knowles, 1984; Kerka, 2002; Baumgartner 2003) to the course:

- They expect me to know what they need to know, and how to learn it
- They do not have substantial relevant experience, and cannot (or will not) draw analogies and parallels from the experience they do have
- Their readiness to learn is unmistakably driven by the social pressure of their status at ADFA
- Little or none of the skills and knowledge they will develop in the course are immediately applicable, and some of it will never be applied by my students
- Their focus is definitely on the subject: "what must we know to pass?" rather than on developing skills and knowledge to solve problems they face.

But I am not dissatisfied with the course or its intent; I find myself disillusioned with my students' approaches. Is it so unreasonable to expect second year university students to demonstrate at least some adult learning preferences? Why are they not demonstrating these 'adult' characteristics anyway?

Several authors (for example, Biggs, 1990; Candy, 1991; Ramsden, 1992; Baumgartner 2003) note that the characteristics of the institution can and will influence the approaches to learning adopted by students. I feel that the Academy environment reinforces surface learning and, as Ramsden (1992) warns, probably reinforces the students' pre-disposition towards such approaches from their secondary education.

The military academy presents a wide range of stimuli to encourage cadets to maintain their pedagogical inclinations rather than to develop or mature into adult learning styles. Specifically, the military instruction that accompanies their university education is built around a pedagogical philosophy through its basis in ISD (Keating, 1997; Thompson, 1991; Toiskallio, 2002). The pressure to perform well academically, particularly because of the perceived and real influence on future military careers promotes an achievement orientation, rather than a learning motivation (Biggs, 1990, 1999). The way lectures and independent study time are bracketed (and often impinged upon) by military demands, both intellectual and physical, reduces the opportunity for students to spend time reflecting or engaging with interesting tangential issues in the subjects they take. And finally, but not least significantly, the culture that exists in the cadets' barracks does not encourage deep consideration of subjects taught in classes, nor of diligent application to their studies (Moore, 2001). Rather it tends to promote compliance with group norms (that do not generally aspire to scholastic excellence) and consistent involvement in time-consuming extra-curricula activities (that reduce the opportunity for study and learning).

Conclusion

My reflections and experience to date lead me to conclude that military academies do promote student learning; that is, a preference for the pedagogical learning style and a tendency to adopt surface approaches to learning. The challenge of developing deep learning approaches in students in the military academy environment is complicated by the unique environment in which the students are receiving their education. I think the first step must be to develop an understanding of to what extent the students maintain pedagogical preferences and how much the environment reinforces (or undermines) that preference through the influence of other training and education, and of the lifestyle the Academy provides. Once that is clear(er), I hope to draw on the literature in the fields of education and military training to devise a transition path from pedagogy to adult learning. This would be reinforced by the additional course design components of reflective periods for the students but would require

subtle shifts in the approach to teaching the course. Finally, of course, the success of my changed approach would need to be measured.

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