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Exploring the Australian Army Instructor's Role in eLearning

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Abstract: An organisation's eLearning culture is influenced by the traditional training culture and perceived relevance of eLearning opportunities. For organisations with hierarchical and authoritarian management and training structures, eLearning provides opportunities for standardising content, delivery and course management while challenging traditional teacher-student relationships. This research-based case study of the Australian Army provides the perspectives of instructors implementing centrally developed, customised eLearning packages within an authoritarian training culture. Exploring instructors' perspectives of eLearning contributed to an understanding of the importance of aligning their beliefs, the organisational culture and learners' needs for effective eLearning implementation.

Introduction

It is important to understand the role of the organisational context in the design, development and delivery of eLearning. From their analysis of the literature, the Australian Flexible Learning Framework (AFLF) (2003) has identified a range of eLearning cultures and models. While the AFLF recognised the complexity of learning cultures across and within education and training sectors, these models provide a useful context for considering case studies of eLearning educational design (Bate *et al* 2003). The AFLF's (2003, p.10) summary of eLearning cultures includes traditional delivery methods and the dominant eLearning model for each sector. Examination of this summary reveals that, in general, the traditional learning culture has been transferred to the dominant eLearning model adopted. For example, in the technical education sector teacher led classrooms and workshops were replaced by teacher facilitated classroom based online learning. However, to achieve training efficiencies in the corporate sector there had been a shift from traditional instructor-led group training to an eLearning culture based on 'independent, technology-based tutorials'. The meaning of 'blended learning' for each sector indicated a wide range of face-to-face and Web based support for learners, which could also challenge teachers' roles. Thus, understanding the traditional training environment and the inherent practices, beliefs and values incorporated in an organisation's eLearning culture is very important. Further, the impact of introducing an eLearning culture that challenges traditional training practices and experiences needs to be understood.

In particular, these eLearning cultures reflect relationships between the organisation, students and teachers. The AFLF (2003) also summarised the main learning models used in vocational education and training (e.g. systematic design of instruction, constructivism, competency-based training, problem-based learning, situated learning) and their relationship to the type of eLearning activities and outcomes expected. For some organisations these learning models are explicit and reflect the organisation's training policies and curriculum requirements. These relationships can also be expressed intrinsically in terms of the models or theories of learning that are adopted by teachers. For example, Robertson's (2005) research in Australian technical education found explicit 'official influences' that 'legitimise particular approaches to education' and situations were teachers have some autonomy to select a pedagogical approach based on their 'personal practice theories'. Errington (2001) also discusses the importance of understanding teachers' beliefs about flexible learning and managing these beliefs to encourage more effective implementation. Therefore, the impact of various external and internal influences of an organisation's culture on eLearning design and delivery needs to be understood.

Previous exploratory studies by the researchers into the proposed implementation of eLearning in the Queensland mining industry (Newton 2002; Newton, Hase & Ellis 2002) and initial interviews with managers in the Australian Army informed the development of a model of the main factors involved in effective eLearning implementation (Newton & Ellis 2005a). It was expected that the Army's instructors' perspectives would further inform the development of this model, particularly the factors involved in the alignment between the organisational context and the learners' context.

Research Method

This case study of instructors' roles and perspectives forms a part of the first external research into the Australian Army's eLearning. The overall research focus was on gaining the perspective of the main stakeholders involved in eLearning design, development and delivery of factors influencing effective implementation during 2004-2005. Using an inductive exploratory approach based on grounded theory (Glaser & Strauss 1967) enabled the researchers to gain an understanding of the issues that are important for respondents as they experience eLearning implementation.

The research for this case study has included interviews with instructors involved in implementing CD-ROM learning packages for soldiers involved in a Corporal promotion course and a questionnaire for instructors involved in a pilot Major promotion course. The eLearning Corporal course has been running for four years and the research included twenty instructors with a range of experience in two training establishments. This research was also informed by the outcomes of an evaluation of a pilot Corporal distance eLearning course for active reserve soldiers (Newton, Ashman & Ellis 2005). Seven instructors out of a total of eleven involved in the Major's eLearning course completed a feedback questionnaire for this study.

A convergent interviewing technique (Dick 2000) was used as it allowed the content to be unstructured but provided a structured approach to the interviews. That is, predetermined questions were not used but questions emerged thorough constant comparative analysis of the data. The respondents were interviewed at their workplace during their breaks from facilitating the Corporal course. The respondents were asked the opening questions: 'What do you think of computer based learning?' and 'What are the advantages and disadvantages?' The respondents were free to discuss any issues that they considered important and to continue talking with prompts from the researcher for more information and clarification. With the respondents' permission, hand-written notes were taken at the interview of the main issues raised. The issues raised in these interviews informed the development of the questionnaire for instructors in the Major promotion course. This questionnaire involved Likert ranking of statements about the effectiveness of the learning environment, relevance of the content, learning retention and attitudes to distance learning. Open-ended questions asked for suggestions to improve the learning environment and the learning experience, issues relating to online discussion and impacts of eLearning on instructors' roles. The analysis of these findings was assisted by the use of a computer program, QSR Nud*ist (QSR International Pty Ltd, 2000), which facilitated coding and sorting of the main themes.

The Army's eLearning Culture

Previous interviews with managers and research into Army policy and historical documents associated with eLearning (Ellis & Newton 2004) provided the background for this study. The Australian Army has a well-entrenched behaviourist model of learning that is formalised in the Army Training System (ATS) that must be used in all training situations (Training Technology Centre-Army, 2003). The Army's Training Technology Centre (TTC) follows the ADDIE (Analysis, Design, Development, Implementation and Evaluation) process of instructional design (Greenberry 2004). The TTC's eLearning instructional design and development is based on Gagne's (1985) model of 'conditions of learning' that provides a sequence of nine 'instructional events' and incorporates Keller's (1987) ARCS model of motivation. TTC instructional designers argued that this approach provided an effective project management process for eLearning design and development and provided students with the structure and consistency that is used in other Army training (Newton & Ellis 2005). Further, designers proposed that this approach also provided a model of the ATS for the Corporal students who needed to learn to train small groups in their course.

The TTC was created in 2000 to co-ordinate the development of self-contained multi-media rich CD-ROM packages that incorporated Army doctrine, culture and interactive learning activities. While organisational commitment to eLearning development was largely in response to the need for more training efficiencies, managers also aimed to shift from training delivery to learning facilitation (Ellis & Newton 2004). Therefore, while the packages follow a behaviourist model, instructional designers also described using 'constructivist principles' to encourage learning, such as scenario-based problem solving. This process provided a structured approach to learning which was supported by the TTC instructional designers' knowledge and experiences in the organisation and Subject Matter Expert (SME) feedback on content.

Thus, this situation fits with the advantages of the Systematic Design of Instruction (SDI) type of eLearning model (AFLF 2003, p. 34) as it involved centralised production by specialised instructional designers and provided a

structured process for the development of expensive products that need to be quality tested during production. While the Army's eLearning model provided a structured and standardised approach to eLearning design, the criticisms of SDI as described by the AFLF (2003, p. 34) are also relevant. These disadvantages included not allowing for individual teacher's input, difficulties in adapting course content to suit learners' needs in different situations or quickly responding to changing content or learning needs.

The Army's traditional learning culture has led to residential classroom based eLearning with face-to-face direction from an instructor. While the CD-ROM packages were originally developed for distance learning, the authoritarian teacher-student relationship, concerns about doctrine security and problems with technical infrastructure led to residential classroom delivery (Ellis & Newton, 2004). Online learning support was provided through interactive content and learning activities and through structured visual and audio directions throughout the CD-ROM modules. There was no utilisation of online interactive communication learning activities or support. This eLearning environment involved more learning independence than traditional face-to-face classes but these were structured learning situations where students worked at their pace within the time limits of the class session. The instructors involved in facilitating the CD-ROM package classroom training sessions also provided field training and summative assessment sessions. This scheduling provided instructors with the opportunity to assess the usefulness of the eLearning packages for knowledge and skill development and the impact of the changes in the learning environment.

Recently there was a directive from the Department of Defence to provide Web-based content for the Defence Restricted Network to distribute customised courses to improve training efficiencies and to encourage more flexible learning opportunities (Deare 2004). The TTC was managing this transition with the use of a hybrid model of Web compatible CD-ROM content (Newton & Ellis 2005b) that can be delivered over the Defence network. With increasing operational tempo and need for training, the Army has piloted distance learning for reserve soldiers using CD-ROM packages at home with limited instructor support using phone and email mostly for course management issues. However, considerable problems emerged due to inadequate support for learners and instructors in distance learning skills and the need for practical reinforcement of learning (Newton, Ashman & Ellis 2005). Therefore, understanding the instructor's perspective of their role and of eLearning delivery informs the development of more effective learning environments for residential and distance-based delivery.

The Instructor's Perspective

From the analysis of the interview and questionnaire data four key factors emerged as important for instructors:

- Organisational culture
- Learning environment
- Learners' characteristics
- Instructors' role

Organisational Culture

While some instructors supported eLearning as the 'way of the future', others resisted eLearning as they felt that it was imposed on them and they were reluctant to change as 'the traditional approach to training was OK'. The Army's top-down decision-making structure isolated instructors from decisions about eLearning development and delivery. If instructors resisted eLearning they were sometimes called derogative terms, such as, 'greybeards' or 'dinosaurs' by other staff. There was a sense of resignation to using eLearning when superiors told them: 'You have to use computer based learning - make it work'. Although instructors were invited to provide feedback on content, any major changes to course content or delivery needed to go through hierarchical approval processes from the training centres to Headquarters Training Command. A low sense of ownership and control of the courses was an issue for some instructors: 'I am not a passenger. I would like to have some input. It is hard to change the way it is being done' (interview). Understanding instructors' experiences of change with eLearning implementation was important to provide operational feedback and to understand the broader factors impacting on eLearning implementation.

In the training centre where it was reported that the new Senior Instructor (SI) was more responsive to feedback from students and instructors there was a greater sense of confidence about managing eLearning: 'The Senior Instructor has given us flexibility - we can utilise CBL [computer based learning] or face-to-face, whatever

seems to fit best' (interview). Feedback could be provided to the SI who could 'assess the situation on the ground' (interview) and make some changes to the delivery method within the Training Management Package (TMP) guidelines. Acknowledgment by the SI of the change processes for instructors was also helpful: 'I hated computer based learning initially. The Senior Instructor made a compromise with me and we came out with a happy medium. It was a major shift for me' (interview). However, requesting changes to course delivery was seen as a more difficult process at the other training centre suggesting that regional differences, personality and experience of the SI were evident. Thus, providing instructors with support within training establishments to become familiar with eLearning and providing them with opportunities to participate in designing course delivery influenced instructors' confidence to work in this new training environment.

While maintaining content currency was a priority, updating CD-ROMs packages was time consuming and expensive, particularly for multi-media components. Instructors expressed frustration with incorrect content including out-of-date doctrine and some unclear multimedia scenarios of practical skills. These errors reduced instructors' confidence in the eLearning packages. They also felt that their authority was eroded when it was necessary to explain these errors to students or students reported errors. Content errors have also provided instructors a base from which to resist eLearning. This resistance has become more evident recently with instructors informing students of general problems with content updating processes before students commence eLearning which has been viewed by managers as undermining students' confidence and feedback about eLearning (Newton, Ashman & Ellis 2005). While there is organisational support for eLearning it is important to understand issues from the instructors' perspective that could lead to resistance and influence students' perceptions of eLearning.

Learning Environment

eLearning offered a new learning environment that challenged traditional face-to-face classroom management strategies. The eLearning packages were presented to students as self-paced learning with access to an instructor in the room to answer questions. The self-paced aspect was viewed as an advantage of eLearning: 'It is self-pace; some students are slow and others are fast. This is not a problem' (interview). The time taken to do the modules was not seen as an issue with most students completing within TTC suggested times. Different perceptions of the flexibility of self-paced learning were reflected in the instructors' classroom management styles. Some instructors were reasonably flexible with timing guidelines (e.g. 'finish three modules in a morning session') while other instructors required students to 'stay on track' to complete each module within the suggested time period. Some instructors felt that they had lost some authority over the class and expressed frustration about students rushing through packages, 'just clicking through' and getting up 'whenever they felt like it' (interviews). However, this tended to be a more of a problem for instructors favouring face-to-face classroom teaching. Understanding instructors' perceptions of their role in eLearning classes and providing them with effective classroom strategies was important.

Course management also allowed for some differences in learning needs. Extending access to eLearning for students after hours to revise or complete learning was an advantage particularly in the first week when some students were still learning how to use computers and the packages and for students with less experience in content areas. Alternatively, instructors suggested that students who have a stronger knowledge and skills base should be able to complete assessments as a type of challenge test and not to have to do all of the modules: 'there was need for more training needs assessment' (interview). The modules were designed so that each section and formative assessment must be completed before the student can progress to the next modules and instructors were obliged to follow directions for course implementation. Developing some flexible strategies within the eLearning packages and delivery to cater for instructors' understanding of the background skills and knowledge of particular groups of students was valued.

In general, eLearning was seen as 'a good tool' providing a base for practical skills: 'It gets everyone to a certain level when they go into the field' (interviews). Modules that were considered more effective as eLearning included: theory, such as 'Customs and Traditions'; simple practical skills, such as rolling flags; and, theoretical background knowledge to practical skills, such as occupational health and safety. The theory modules in particular were valued by instructors as providing content that would be difficult for instructors to present: 'The history is good. The instructors wouldn't have that knowledge'; 'Law of Armed Conflict course: Good footage, good visuals. Tiananmen Square and Vietnam footage adds realism and a historical perspective to learning' (interviews). There was more concern about learning practical skills using eLearning: 'Some subjects on CBL would be better as practicals-drill and operations, such as wiring would be a lot easier as a practical lesson' (interview). Feedback from instructors and students is required to understand which content is best learnt using eLearning.

While eLearning was valued in providing background knowledge for practical skills, there were varying perceptions about the levels of retention of eLearning for field based practice and assessment. One popular saying with instructors to describe eLearning was 'a data dump-once passed, it was flushed from system'. Apart from demonstrating a shared view amongst some instructors, this attitude revealed a concern with retention. However, instructors also mentioned other factors not related directly to eLearning that influenced retention including individual learning ability, past educational experiences, interests, time of day and Army experiences. For example, different backgrounds of an all corps group meant that some students had previous knowledge of the skills and found transferring eLearning content to the field easier than less experienced students.

Blending face-to-face group discussion or practice with eLearning sessions was valued to provide learning clarification and learning reinforcement particularly for practical skills. Instructors who managed available eLearning time to provide some short face-to-face classroom or closed field practical sessions were generally more positive about the practical learning benefits of eLearning and retention: 'With the pracs closer to the CBL, people learn quickly. They are hands-on learners, most of them' (interviews). Blended learning sessions were also aimed at providing students with more experience and understanding of group dynamics and for instructors to demonstrate role models for leadership and training. However, some instructors had encountered resistance from supervisors to implement more blended learning opportunities. The rational and impact of these blended learning practices on learning need to be further evaluated.

Further, there was also evidence that eLearning was providing more efficient learning for practical skills, with one SI reporting: 'I was spending less time showing them how to do it and retesting. They can do the practical needing less controlled supervision. They can actually do it - not perfect, but they can do it' (interview). Thus, while eLearning was viewed as providing initial background skills, instructors wanted students to engage in relevant practical experiences to reinforce this learning and for them gain an understanding of students' learning progress. Understanding learning retention processes and developing effective learning strategies for different types of skills would be informed by instructor feedback.

Learners' Characteristics

Army students tend to be treated as a homogeneous group regardless of age, sex or previous knowledge and experiences, despite evidence of differences (Newton, Ashman & Ellis 2005). Instructional designers have attempted to cater for differences in learning styles with a variety of learning modes including visual, audio and text in the eLearning packages. Instructors recognised students' individual learning needs and experiences: 'There is a variety of different learning levels and a wide range of skills - from degrees to not even the School Certificate [four years of high school]' (interview). eLearning was viewed positively as providing accessible learning for different types of learners: 'This training should provide a wider range of learning - seeing it and doing it'; 'It brings in a lot of information, it is interesting, it is interactive' (interviews). Despite the availability of these different media, many students took hand-written notes to record main points for assessment tasks which slowed their module completion rates. Some instructors compared eLearning with traditional face-to-face classes where students are given more notes to keep and time to write their own notes. The usefulness of notetaking for learning retention was uncertain. Thus, the role of eLearning design features and the shifts required in learning practices for students and instructors moving to effective eLearning need to be understood.

Understanding the experience base of the students prior to eLearning would allow instructors to focus on students who may need extra assistance during either eLearning or practical training. Individual differences were viewed as more of an issue with eLearning than face-to-face classes as instructors had less opportunity to interact with students to understand their individual abilities and to provide assistance. There was an alternative viewpoint that eLearning frees up the instructor's time to provide attention for student inquiries. Responding to individual requests for learning support needs to be incorporated into eLearning design. Instructors need to be given guidance on managing their role as eLearning facilitators for students who need extra assistance.

Instructors provided most of the student assistance for course navigation and minor technical issues, which was a shift in their role and skills. The Army computer technical support was considered effective for major technical problems and instructors also valued the after-hours support services. Despite managers' assumptions of computer literacy of the 'X-generation', varying levels of computer literacy were evident. For example, about 10-20% of each Corporal course had no previous computer experience (Newton, Ashman & Ellis 2005). A pre-course orientation session to the eLearning packages went through basic computer file management and course navigation in a few hours. Less computer literate students needed a few days to learn how to use the package navigation during the course period. Instructors reported that these students found the modules and assessments more difficult and

stressful and they generally took longer to do the modules. However, high stress levels for the online assessments was reported for many of the students as eLearning was a new skill and there was the pressure to achieve at least 60% in the formative assessments. The more computer literate students also caused problems as they could become impatient and try to take shortcuts, sometimes causing technical problems. It is important to evaluate the impact of computer literacy on students' attitudes and progress and instructors' roles in managing differences in students' abilities.

While motivation was not considered an issue as the students wanted to learn in order to be promoted, instructors thought that previous education and learning experiences impacted on how students learnt and retained eLearning. Previous Army experiences influenced students' familiarity with the content and their confidence to learn from the packages. Instructors thought that eLearning might suit students with less educational experience as it provides a 'logical path' for self-paced learning. As many students in the lower ranks have a low school education level they can be lost in face-to-face lectures where the information is presented too fast for them. Individual differences in maturity and discipline were claimed to also influence students' ability to focus on eLearning. Assisting instructors to understand the instructional design features of eLearning packages and how they relate to learners' needs could facilitate more instructor support for eLearning.

Instructor's Role

Instructors viewed the shift in their role to an eLearning facilitator as a change in their overall function. While instructors described their new role as a 'facilitator', most indicated that they felt more isolated from the learning process than in traditional face-to-face classes. A facilitator was perceived as an easier role involving less teaching preparation and skill than traditional teaching. The new role was described in terms of providing technical support rather than content learning support: 'We are technical fixeruperers'; 'Press play, I'm here to supervise' (interviews). Although instructors had access to backup face-to-face lesson plans and resources if there were computer problems, there was concern that they would not be adequately prepared. There was also concern that there was some 'skills fade' (interview) as they were loosing their face-to-face teaching skills and subject knowledge. Support for instructors to perform this new role was minimal and involved them going through the modules themselves when they first started with the section. The instructors considered this orientation as adequate for what they were expected to do. However, this mixture of relief and resentment indicated a need for more organisational support for instructors to value this role and to reduce resistance. It would also be worth investigating if expectations of instructors as eLearning facilitators are maximising learning opportunities for students.

There was also concern that eLearning reduced opportunities for questioning between instructors and students. eLearning packages were being used as self-contained learning with very few students asking instructors content-based questions: 'You can't ask a box a question' (interview). Most questions were about computer problems rather than content. Instructors acknowledged that students were also reluctant to ask questions as part of Army culture where soldiers do not want to 'look dumb' (interview). However, there were also limited opportunities for instructor-initiated interaction, which allows instructors to see if the students understood, to ask shyer students questions and to adapt the questions to see 'they see how to communicate' and 'who can offer an opinion' (interviews). Therefore, teacher-student interaction was valued as a learning method that was reduced in eLearning design.

There was also concern about a shift in instructors' responsibility as role models for students. Instructors valued their relationship with the students and there was concern that this relationship was being reduced with eLearning: 'There is a difference in the Army. The instructor needs to set an example' (interview). Instructors valued face-to-face training to provide an opportunity to share their Army experiences with students. There was also concern that students see very little face-to-face instruction when this is one of the skills they needed to learn. For example, in the 'Leadership' module, face-to-face role models were considered important as they were trying to 'build leaders-to show confidence' (interview). Although eLearning packages have been designed to include virtual role models who dress, speak and act to appropriate Army standards, whether students assimilate these standards was questioned. It was also argued that: 'different face-to-face instructors can provide a range of face-to-face instruction styles that the student can reflect on and model' (interview). Alternatively, eLearning was considered a positive experience as it provided modelling of behaviour to Army standards that all instructors may not provide. Understanding the importance of the instructors as role models and whether eLearning influences this role were important. Thus, it is important to recognise that eLearning represents a shift in the instructors' role that needs to be clearly defined and understood by instructors and supported by management.

Conclusions

This study has provided an overview of Australian Army instructors' perspectives of eLearning and their role within this eLearning culture. Instructors were attempting to balance the priorities of the organisation, their understanding of learners' needs and their personal beliefs about teaching and eLearning. In summary, instructors' perspectives provided the following insights into improving eLearning implementation in this context:

Organisational Culture:

- Instructors' experiences of change need to inform eLearning implementation;
- Reasons for resistance from instructors and managers to eLearning need to be understood;
- Addressing instructors' uncertainties needs to be a part of the eLearning implementation process;
- Providing instructors with opportunities to suggest changes in course management can challenge existing hierarchical decision-making processes.

Learning Environment:

- Understanding instructors' perceptions of their role in eLearning needs to inform the development of effective classroom strategies;
- Designing flexible learning strategies to cater for skills and knowledge of particular groups of students needs to be considered;
- Managing relevant blended learning opportunities to improve retention and to monitor students' progress needs further investigation;
- Impacts of eLearning delivery features and enabling instructors to effectively manage learning practices need to be understood.

Learners' Characteristics:

- Instructors need management strategies to effectively respond to students' requests for learning support;
- Improved understanding of the impact of computer literacy on students' attitudes and progress needs to inform instructional design.

Instructors' Role:

- Providing organisational support for instructors to value their role in eLearning is needed;
- Instructors need to understand students' learning support needs to maximise learning opportunities;
- Understanding the impact of the reduced teacher-student interaction on learning is required;
- Understanding the importance of instructors as role models and the impact of eLearning delivery on this role needs to be considered in the instructional design.

Therefore, the Army's implementation of eLearning has focussed on a technological approach to the expense of managing the social aspects of the eLearning environment and implementation processes. Training establishments and their instructors were required to adopt eLearning but they were attempting to modify delivery methods to make them more relevant to the learning needs within the constraints of the organisational systems. While there was strong strategic support for eLearning, which has provided infrastructure and managerial support, the impact and role of instructors' beliefs and influence had not been considered. Instructors were trying to balance the directive to implement eLearning with their past training experiences, their perceptions of learners' needs and the impact on their job status and role. Instructors' relative isolation from the eLearning implementation process has created areas of uncertainty about eLearning. This uncertainty has led to resistance from instructors who are in a direct position to be able to influence students' perceptions and final outcomes of eLearning projects.

Thus, the top-down perceptions of certainty from management about the positive features of eLearning and its alignment with Army priorities and learners' needs to be informed by the bottom-up perceptions of uncertainty about eLearning from its adopters. In this research, the instructors as adopters have indicated varying levels of acceptance of eLearning. Where there were avenues for instructors to provide feedback and there was some support by immediate superiors for their ideas, there were indications of more instructor confidence about the effectiveness of eLearning. Where instructors had less control over the eLearning implementation process there were more indications of uncertainty about its effectiveness.

To improve understanding of the factors influencing effective eLearning implementation in the Australian

Army more research will be required into stakeholder perspectives within this eLearning culture. Researching other military contexts and other cultural contexts for eLearning implementation would also inform this understanding. This case study highlights the importance of understanding the assumptions inherent in an organisation's eLearning culture and the need to include and align different stakeholder perspectives to effectively manage change processes.

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