

Virtual learning spaces at the Royal Danish Defence College: emerging practices

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ABSTRACT

A growing proportion of today's educational activity, civilian as well as military, takes place in virtual learning environments. A corollary of this growth is the emerging concern that the educational value of information and communication technology (ICT) is under-used by educators. There are also professional concerns that ICT may even undermine the effectiveness of teaching in some instances. A recent report notes that our educational institutions are ill-prepared pedagogically for making the most of technology. It asserts that simply adding 21st century technologies to 20th century teaching practices will "dilute the effectiveness of teaching".

Since our military institutions are currently adopting new technologies extensively, this issue is a pressing one. We need a deeper understanding of how e-learning affects learners in a military context. For this reason, the present study has used a series of qualitative interviews to map the learning experiences of officers from the Royal Danish Defence College. A number of questions animate the study. Firstly, can we identify certain factors that have created increased learning benefit when we come to evaluate the strategies, methods, and media employed in our teaching? Moreover, what are the salient features of the way officers – in this instance, Danish officers – perceive their own learning cultures and styles? In turn, how should this affect our course design?

The study reveals that learners' engagement levels, and the likelihood of them harbouring frustrations, often relate to their course's capacity to offer forms of collaboration. The data suggests that these learners deem collaboration to be part of a military *ethos*. Hence, unless the didactics underpinning our virtual learning environments align with cultural traits of this kind, they are likely to induce frustration rather than engagement. In view of these results, the paper will make recommendations on course design and pedagogical development in the context of military blended learning.

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EDUCATION & TECHNOLOGY

A growing proportion of educational activities in public and private sectors takes place in digital learning environments; armed forces education and training is no exception. However, available technologies may have unforeseen consequences for learning outcomes if pedagogy and didactics are side-lined. A recent study contends that it is especially important to address the issue of whether or not armed forces educational activities online are pedagogically sound, arguing that “high quality in education and learning is a critical factor in creating effective national armed forces” (Elstad, Reitan & Gran 2015, p. 3).

Researchers have made significant headway in this field of research in civilian contexts. Meta-analyses from across various subject-specific disciplines suggest that the integration of technology into physical learning spaces has the potential for increased benefit for learners compared with traditional instruction (Grgurovic, Chapelle & Shelley 2013, US Department of Education 2010, Zhao 2003, and Kulik 2003).

The issue of how and the extent to which technology can facilitate learning is far from clear-cut. A study from the Organisation for Economic Co-operation and Development (OECD) in 2015 concludes that there is “no appreciable improvements” in student performance based on their access to educational technologies and tools (OECD 2015, p. 15). The study hypothesizes that we simply “have not yet become good enough at the kind of pedagogies that make the most of technology. Further adding 21st century technologies to 20th-century teaching practices will just dilute the effectiveness of teaching” (OECD, p. 3). A similar point is made by Garrison & Anderson (2003) in their much-cited work on e-learning pedagogy and by the work of Cox (2005).

This conundrum suggests we need a deeper understanding of the role of pedagogy in e-learning and of the mechanisms at play when technology sets the parameters for learning activities and behaviours.

CASE STUDY: THE ROYAL DANISH DEFENCE COLLEGE

Background

The Royal Danish Defence College (RDDC) is in the early phases of developing and implementing e-learning on a large scale. Introduced as a consequence of the Danish Defence Agreement 2013-2017 and its resultant budget cuts, e-learning has become a non-negotiable component of many courses. The strategy was introduced with few resources allocated, limited teacher training opportunities and no organisational strategy for the area, making it an unusually precarious endeavour from the perspective of pedagogy and didactics. Despite a growing body of work investigating discrete aspects of e-learning at the RDDC (Jessen & Rander 2006, Voigt 2014, Lunau 2014, Jensen 2016, and Sjøstedt 2014), there has yet to be a systematic, institution-wide review and documentation of current practices and results.

The present study is motivated by the need for greater understanding of how learners react to their e-learning experiences at the RDDC and hence how appropriate learning spaces and activities can and should be designed. A central concern throughout the study is the question of whether a military learning environment has certain characteristics – culturally and organisationally – that may influence the design and delivery of learning processes. What are the salient features of a Danish officer learning culture, as perceived and reported by officer learners themselves, and how does that culture affect the pedagogical opportunities offered by e-learning? In this environment, which aspects of the current use of e-learning are conducive to learning and which are a hindrance? Which factors affect learner motivation? These are questions at the heart of this study.

The terminology around e-learning is varied and not always clearly defined. In this paper, the term ‘e-learning’ will refer to every type of learning activity online, while ‘blended learning’ refers to a course consisting of some measure of face-to-face and online learning activities. Finally, the term ‘virtual learning spaces’ is used to describe online collaborative platforms, be it an LMS, a social media platform, a wiki or any other online ‘place’ where users interact through learning activities.

Data collection

The case study is based on interviews with a cohort of 14 officers from across the three service branches of the Danish Armed Forces, 13 out of 14 of whom are men with young families, and all 14 in the age bracket of 30-40 years of age. The cohort attends continuing education and training courses at the RDDC, which qualify them for career progression. These courses are part of a package of officer education and training within the Armed Forces, one of which – the Master of Military Studies – is accredited by the Danish Accreditation Council. To varying degrees, courses contain elements of online as well as face-to-face learning activities.

In order to allow the central themes from a learner perspective to emerge, the present study uses an open, unstructured, qualitative interview form that follows the narrative focus of interviewees – a research methodology that invites interviewees to elaborate on topics that seem especially important to them in order to map their individual perceptions. Accordingly, the results of the 14 interviews have been analyzed based on thematic association and commonality rather than quantification.

Research results from quantifiable meta-analyses have value as broad, large-scale surveys of trends. They are generated from subsets of comparable studies, and hence often rely on measurability parameters such as pre- and post-course tests and will tend to answer questions of whether or not technology in education improves test-score-based learning (cf. US Department of Education 2010). Whilst there is also opportunity for qualitative data to be gathered via survey in the context investigated by this paper, interviews were considered to be a more valuable form of data because the research aimed at mapping the lived experience of interviewees.

Results

The main findings from the study point to considerable challenges but also indicate potential strengths to build upon. The experiential factors that affected participant responses are considered in the sections below. Four of these sections outline these experiences and the final section provides context and comparison.

General responses to e-learning

Interviewees reported a number of advantages of e-learning in general and blended learning in particular including:

- greater transfer (P2, P8);
- an opportunity for reflection and immersion (P4, P9); and
- “a sense of freedom in having peace and quiet” to consider material at one’s own pace and without present social dynamics (P9).

However, there were critical voices, too. As many as 43% of learners from the cohort reported a drop in learning outcomes compared with face-to-face learning. What is the reason behind their assessment that e-learning is less effective? Importantly, as an organisation and as teachers, how should we respond to this? While the latter question is addressed in the conclusion to this paper, what follows here is a depiction of what interviewees felt obstructed their learning. What emerges from the case study interviews is a series of common themes, the strongest of which –

collaboration – is the main topic of this paper. From the point of view of this study, it is especially interesting because interviewees described it as central to their military identity, practices and self-understanding.

Collaboration

The wider community may consider Danish Armed Forces officer culture homogenous and while that is true to an extraordinary degree in terms of gender, ethnicity and religion, heterogeneity of specialisation and know-how is a core condition for professional activity. In operational planning as well as in daily regimental responsibilities, it is a necessary condition. Army tactical and operational planning – staff work – requires systematic cooperation of a large range of function-specific specialists, such as engineers, artillery specialists and intelligence personnel, to mention a few. Similarly, Navy and Air Force planning processes rely on systematized collaborative practices that mesh widely diverging technical and strategic expertise into viable action plans. Interviewees identified collaborative work with peers of extensively different experiences as a fruitful environment for deep learning and quality output, because it parallels the working conditions of their profession. They identified it as part of a general armed forces *ethos*.

Interviewees were not unanimous about how or in what medium collaborative processes should take place but a common view was that a “surprisingly large” proportion of learning stems from interactions with others (P7). In fact, 71 % of interviewees stressed the importance of sparring with others for their learning. As one interviewee expressed it, “[t]he other course participants are teachers as much as the [actual] teachers” (P1). One interviewee noted that maximum effect of learning from others required that learning groups must consist of learners from different contexts and with a variety of experiences (P8).

However, when it comes to collaboration in virtual learning spaces, many interviewees expressed scepticism. A major theme was the unwieldy and slow forms of communication in their designated LMS. The lack of responsive immediacy caused frustration and produced a sense that the technological parameters were obstructing rather than aiding collaboration. One interviewee felt that communication lacked “depth” and “creativity” (P9). Slowness was the culprit, as he saw it: “[t]he impulsiveness which I think is fun in learning, it is lost a bit when a presentation is posted one day and then [...] someone has answered the next day and then on day three you have written a reply” (P9). While the introverted learner might not object to less speed, there was a general perception that “proper group work” takes place face-to-face (P8). It was also a common view that officers are practical and that they prefer hands-on tasks.

Another concern was communicating in writing. Many RDDC interviewees expressed a preference for the immediacy of spoken communication above a written one: “[T]hat dynamic and dialogue that you might have in speaking, I find it hard to create in writing” (P9).

Social connectedness

Interviewees also pointed to the phenomenon of social connectedness (often referred to in current research as social presence) as a condition for well-functioning collaborative learning environments. One interviewee noted that a structured approach to group production of work was beneficial because “we are forced to establish norms in the group” (P5). In turn, group norms led to “group socialization” and “safe learning spaces” (P5) – all part of the group dynamic behaviour we might call the social contract. This is a significant sign of trust, which is the reason why social presence has “a strong relationship with students’ learning outcomes.” (Cui, Lockee & Meng 2013, p. 678). An added organisational advantage of social connectedness is that it builds and strengthens informal networks across areas of specialisation and geographical location. Informal networks may be as important as the traditional chain of command when carrying out tasks and projects because they are based on social capital and social, reputation-based authority (Stodd 2016). One interviewee noted that the social community of learners meant that lines of communication cut across the boundaries of military rank and position, undercutting bureaucracy and making for direct access to those with the knowledge and skills necessary for a project or task (P4).

Learner disengagement

One of the surprising findings emerging from the open interview form was the extent to which organizational changes interacted with cultural traits of the interviewees and affected motivation – and hence learning outcomes – negatively. The study revealed that a culture of completing tasks regardless of whether they make immediate sense in the context of the individual is a self-identified officer trait: “You can’t just say that I can’t solve this task. It must be solved” (P10). Working, attending to family and studying is “the art of the possible”, notes another learner (P9). Although the

current LMS is considered difficult to navigate, unintuitive and static, a typical response is that learners will not spend time and resources on the frustration it causes because “I know it is a setting I can’t change” (P6).

Whilst there is a general self-identified conception that armed forces personnel complete the task they are given, not understanding the reason or the conditions under which they are undertaken strongly affects engagement. A vast majority of interviewees signed up for courses due to either direct or indirect expectations from their unit commanders or superior officer. However, most interviewees also reported confusion or uncertainty about the role these courses played in their career. All agreed that they were necessary in order to gain promotion but few felt they fully understood either which courses to complete in order to secure particular job functions or how many to complete in order to be promoted. Lack of career path transparency significantly affected their views of the courses they were undertaking.

From a learning perspective, there is a discrepancy here between the hierarchical nature of military institutions and that of learning processes that often thrive on inner motivation and its condition of autonomy. Officers are compelled to educate themselves, usually through various more or less explicit forms of institutional expectation, and their performance is rigorously measured. The results from this study confirm the motivational theory of Deci & Ryan (2000), which states that intrinsic motivation requires a certain measure of autonomy – at the very least the individual autonomy to design the ways and means by which one reaches one’s educational goals if the goals themselves cannot be chosen individually. In a similar vein, Winsler & Middleton (2006) note that “[s]elf-determined motivation (a consequence of values or pure interest) leads to better long-term outcomes than controlled motivation (a consequence of reward/punishment or perceptions of self-worth).” Being compelled in difficult conditions lowers motivation, hinders engagement and results in (self-reported) sub-standard work.

The current environment within the Danish Armed Forces is one of significant change and uncertainty and this may affect the level of commitment officers feel towards self-motivated education endeavors. As Lunau (2014) notes, major cut-backs have resulted in changes to working conditions (especially as regards further education and training), geographic location and educational structures. The data of this case study suggests that to a profound extent learner perception of their experience is linked to working conditions, organisational change, job security, deployments, and home life.

One of the primary problems here is the new work conditions, which require officers to study after rather than during their working day. In addition to their studies, most interviewees have young families, full time work, training exercises and deployments to attend to. As one interviewee noted: “The effect of e-learning is that [...] you can handle more things, but that you handle more things in a worse way. That’s the problem” (P1). In this instance, “e-learning” is seen as an additional responsibility, while the real issue seems to be that the workload has increased significantly by adding 10-15 hours of study per week on top of a working day (see also Voigt 2014).

As a consequence of this mixture of logistical and organisational challenges, many interviewees displayed signs of disengagement from their learning activities. One interviewee had resorted to “60% solutions” (P1), another to the “lowest common denominator” (P3) while educational activities were described as “driven by fear” because of the pressure from all three flanks: the professional, the personal and the educational (P1). A significant undercurrent of interviewee responses was whether a course made sense to them in their own narrative, from a career path perspective and/ or a professional development one. Those who benefitted most and used language suggestive of engagement when talking about their own learning had chosen courses based on their self-identified personal development needs, and felt supported by their unit commanders.

Benchmarking

The recent survey from the Norwegian Armed Forces Research Institute provides an interesting point of comparison (Elstad, Reitan & Gran 2015). Norwegian Armed Forces culture is similar to the Danish, the learners documented in the report are of a similar age (if slightly older: 35-45 years of age) and the blended learning courses themselves are at a comparable level academically. Learner perception of their courses varied conspicuously from those documented here, however; learners were consistently satisfied with their learning benefits from the course and with the learning technology infrastructure that facilitated their learning. The survey specifically measured the extent to which learner motivation was intrinsic and concluded that there was next to no link between learner perception of work put into the course and economic gain. The perception of direct managers and colleagues mattered more but was not deemed a decisive factor. Instead, learners perceived the course as of personal value and hence were driven by intrinsic

motivation. Significantly, learners were awarded study time during work hours and whether or not the course had career significance was clear.

Discussion

Until recently in the Danish Armed Forces, e-learning courses tended to consist largely of asynchronous, pre-programmed individual online courses with one-way activities such as reading materials and videos. These courses often related to generic procedural requirements, of which there are many in the Armed Forces. Often, they would be assessed by a multiple-choice test, not an exam.

In recent years, there has been a shift towards greater use of collaborative activities in virtual learning spaces at the RDDC, a development supported by e-learning theory. Current research suggests learning communities help to “increase student participation” (Akyol, Garrison & M. Yasar Ozden 2009, p. 1), “enhance student satisfaction and learning through community involvement” (Palloff & Pratt, 2005), and create bonds of trust that facilitate and support learning processes (Stodd 2016). From a collaborative constructivist perspective, in short, social communities are central to the process of learning (cf. Garrison & Vaughans 2008).

One of the most significant findings of this study is that there is clear alignment between RDDC officer learners’ conception of their learning culture and what current learning theory believes to be a condition conducive to effective learning, namely socialized, collaborative work. However, it is clear from this study’s learner testimonies that to many of these learners, collaboration is assumed to a large extent to involve immediacy of dialogue and to a lesser extent, asynchronous activities. This finding from the study is a pivotal factor that needs to inform the didactic principles of virtual learning environment design in a military context.

Despite cohort preference for a particular mode or speed of learning, it should be recognized that there is fundamentally a span of learning “modes” or paces that stretch between the polarities of fast and slow. What the RDDC cohort primarily identified as a conducive mode for them was a fast, immediate, responsive learning environment based on dialogue. Speed and immediacy of communication in groups creates fertile conditions for socialization, trust-building, affect and social presence (see also Garrison & Anderson 2003). By contrast, what we might call slowness in learning involves reflection, and 14% of interviewees noted the positive effects of that. Asynchronous online activities can create good conditions for reflection because students “have time to think, explore and reflect before answering” (Birch Andreasen & Lerche Nielsen 2012, p. 5). Similarly, in its cumbersome nature, writing can be a powerful method of reflection; it allows the writer to gain a certain measure of detachment, which is productive in the process of evaluation and reflexivity (cf. Dewey 2001). Learning in social communities therefore requires didactic strategies that allow for affect as well as reflexivity – speed as well as slowness – to support the learning process.

If collaborative/socio-constructivist learning theory underpins learning activities, the design phase of those activities should involve selecting an appropriate learning space. Whilst organizations will naturally be aware of the physical surroundings of its learning activities, the possibilities and constraints of its virtual learning spaces are not always scrutinized to the same extent. A poorly chosen technology or platform is likely to create a discrepancy between learning space, teaching method and learning goal. In other words, are we aware of what communicative possibilities and limitations a platform creates? Is it a pedagogically founded decision when an organization chooses to invest in one LMS instead of another? To what extent is pedagogical considerations at the heart of technology choice and use? An inflexible LMS, for instance, will make certain learning activities possible and others not: “much of the construction of e-learning is still carried out without a true understanding of how learning theories can be translated into pedagogical requirements” (Kakasevski, Mihajlov, Arsenovski & Chungurski 2008, p. 613). LMS’ typically “impose structural, technical and organizational constraints that limit the ability of teachers to control them and, typically, constrain learners even more” (Dron & Bhattacharya 2007, p. 1). It has been argued that there is a dearth of effective and flexible systems specifically designed with teachers as well as students in mind. (Rodrigues, Sabino & Zhou 2011, p. 1148). As noted by Schatz, Fautua, Stodd and Reitz “[t]o augment formally created content, individuals need spaces and resources that enable them to engage with one another, to share knowledge peer-to-peer (or even from bottom-to-top), to co-create meaning, probe new ideas, and create shared narratives” (2015, p. 7).

The growth of device types, apps and platforms undoubtedly creates extensive opportunities for education. However, the natural momentum created by developments of this speed may result in less critical examination of what a platform (and hence mode of communication) is suited for from a learning perspective.

This also creates some interesting hybrids among teachers and teaching styles: early adopters of learning apps are often those with the most experimental and least conservative approach to pedagogy. However, apps are sometimes based on quite conservative pedagogies, such as behavioristic repetition and multiple-choice tests for progress measurements, tools these teachers would rarely use in their classrooms prior to the arrival of such tools. While they may add a valuable dimension to teaching practices, a thorough examination of their didactic value is necessary.

An unexpected finding of this study is that the responses gathered here do not conform to the results of current international research in the field. There seems to be a discrepancy between the cautiously optimistic evidence-based studies such as the US Department of Education meta-analysis from 2010 and the perceptions of our learners. Further, there is a marked divergence between the results of Danish studies in the field, one of which is an analysis of the precise context of the current study, and the perceptions of RDDC interviewees (The Danish Accreditation Council 2014; Jessing & Rander 2006). A Copenhagen University study found that their blended learning as well as their purely online courses produced socialised communities and high levels of student activity which resulted in “high grades, low drop-out rates” as well as student-identified satisfaction with the courses (Copenhagen University 2009). Similarly, the Danish Accreditation Council surveyed a professional Bachelor degree and concluded that “[o]ne of the pedagogical-didactic benefits mentioned by the respondents is that e-learning and/or blended learning are suitable to support participant activity (The Danish Accreditation Council 2014, p. 110). What is the reason for such divergence? What were the factors that inhibited or constrained the learning process?

As this study has documented, many factors contribute to the current situation, several of which relate to working conditions rather than pedagogy. Interviewees frequently made references to organisational changes that affected them negatively in their learning. Firstly, learners in the Danish Armed Forces have had their right to undertake education and training during work hours taken away if the learning activities take place online. Face-to-face education and training, however, is still paid. Secondly, fundamental changes to the Armed Forces HR strategy have undermined career transparency and created uncertainty about which courses qualify an officer to pursue a particular job. Thirdly, and this is the only pedagogy-related aspect of the case, there has been a tendency for technological parameters to define learning activities rather than vice versa. Fast, social media-like, community-fostering platforms combined with slower, reflective exercises would create fruitful conditions for a full spectrum of learning activities.

CONCLUSION

In the current environment of organisational and educational change in the Danish Armed Forces, it is commonly assumed that the medium through which learning takes place is the cause of current learner frustrations with e-learning. In short, “e-learning” or “distance learning” is frequently singled out as problematic. In addition, the case study demonstrates that there is a spill-over effect of frustration related to working conditions and logistics. This study makes the case that two dimensions affect learning outcomes – the practical and the pedagogical – and that positive change will require action in both dimensions. The introduction of e-learning is often accompanied by many other forms of change. If, for example, e-learning is introduced as a result of budgetary constraints, the organization is likely to be undergoing change at many levels, creating uncertainty for officer learners, given that they are also employees of the organization that educates them. In such a situation, we risk misdiagnosing frustration with new learning spaces as a pedagogical issue rather than one of organizational uncertainty.

As educational developers it is important to be aware of these frustrations but they are less relevant from a pedagogical perspective; their solution lies in the organisational, not the educational structures. A common response to struggling learners would be to lower expectations in regards to their performance, cut material from courses or simply to reject the advantages of virtual learning spaces and return to face-to-face classroom activities. While this may be considered a necessary response, it misses the point and degrades learning quality at the same time; the issue of study hours and other aspects of employee health and wellbeing can only be solved at an organisational level. Interviewee responses – benchmarked against the Norwegian study results – show the extent to which foundational conditions affect participant engagement and hence learning depth.

Developments in the pedagogical dimension, on the other hand, require collaboration between organisation and teaching staff. This requires initiatives such as systematic teacher support, blended learning teacher training with a pedagogical focus, informal teacher peer mentoring and other associated professional development activities. Teachers must be supported in developing an extended range of pedagogical and didactic strategies that create a meaningful learning environment for officers; an environment characterised by greater immediacy, social presence, less text-based communication in planning processes and greater collaborative possibilities when producing tactical and other collaborative output. Didactic tools such as social media, Mlearning, Google docs used with synchronous voice-only meetings and other immediate forms of communication could be part of a didactics of immediacy.

To raise the quality and outcome of e-learning and blended learning programs in officer academies, this study recommends:

1. That all technology-related decisions – not least those pertaining to purchase and implementation of organization-wide learning management systems – be pedagogically based or be informed by qualified pedagogical input. Central considerations include: What is the purpose of the platform or software? Which learning activities will it facilitate? Is it agile enough to support fast as well as slow learning activities, self-organized as well as formally determined learning communities?
2. That teaching staff involved in e-learning activities be offered qualified advice and professional development opportunities within e-learning pedagogy.
3. That decision-makers within an educational organization cultivate an awareness of the immediate effect changes to working conditions and other practical circumstances have on learning outcomes among its learners.
4. That the relation between educational choices and career progression is made transparent.

This study concludes that extending collaborative virtual learning spaces at the RDDC will be especially fruitful at this time because it will produce greater depth of learning, strengthen learners' informal network and, importantly, because adaption will be fast, given the immediate need for large-scale implementation.

ACKNOWLEDGEMENTS

The author would like to acknowledge the invaluable research support of Michael Lyhne for his interview design and Alice Elmerkjær for her interview and collation skills.

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