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E-learning policies, practices and challenges in two Norwegian organizations

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Abstract

This article reports a pilot study on the uses of technology to enable learning within a formal educational setting in a higher education institution and within a corporation. These two Norwegian cases were selected due to their commitment to technology-enabled learning, as expressed in policy and strategy documents. The aim was to investigate the commitment and actual use of information and communications technology (ICT) for learning as well as what key actors think are the major challenges for successful large scale implementation of ICT for learning. The findings indicate that there is insufficient follow-up on e-learning policies and that there is a general lack of strategic direction and leadership in this area. The key challenges respondents highlight relate to the need for a systematic and pedagogical approach to e-learning in which three equally important considerations must be balanced: organization, pedagogy and technology. Key perspectives of a coherent pedagogical and organizational framework for planning e-learning are discussed.

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1. Introduction

In schools, universities, and in work life, the question of how to utilize modern information and communication technologies (ICT) for learning purposes is an important question for anyone with a stake in education and training, as new technologies are spreading rapidly. A core issue with regard to these pervasive changes in educational technologies in the context of the global economy is learning. Simply put, a valid slogan for educational institutions and corporations alike might be 'Learn or Burn'.

What is actually going on in the field of learning and ICT? Are we witnessing a revolution of learning? Are new technologies producing better learning than traditional classrooms and traditional teachers? Or, are claims of radical improvements in learning as a result of ICT only empty words aimed at making people believe in the utility of ICT and buy more technology? Evidence for both possibilities can be found. A basic motivation for this study (Welle-Strand & Tjeldvoll, 2002) is to explore e-learning policies and practices in order to get a better understanding of what actually contributes to improved learning and

increased value creation as opposed to what about technology is just fashionable.

This is an exploratory pilot study. The empirical data are intended only to illustrate or exemplify policies and opinions at two organizations. There is no intention to explain what is going on in general in the field of learning and ICT, although what is happening in these organizations may be representative. The overall research questions are: how is e-learning understood, and to what extent is there a relation between e-learning policies and practice?

2. Organizing of learning

During the last twenty years, many countries have increasingly put emphasis on knowledge and on an educated population as strategic competitive measures in the global economy. The general aim is to become knowledge societies and play an active role in the global knowledge economy. The reason for the increasing emphasis on knowledge can be found in the assumption that we are living through a revolution as pervasive in scope and effects as was the industrial revolution (Castells, 1996). For firms in a highly competitive and dynamic market, continuous innovation becomes a goal in which knowledge is seen as

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the core resource and learning is viewed as the most important process (Lundvall, 1992).

In a society where knowledge is the main resource, the development and spread of new knowledge becomes central. Consequently, universities and institutions of higher learning are seen as central agents of innovation and competitiveness. “If knowledge is the electricity of the new informational-international economy, then the institutions of higher education are the power sources on which the new development process must rely” (Castells, 1994, p. 16). Trondsen (2000) argues that new technologies, highly competitive global markets and the new labor force all contribute to the increasing demand for learning. Today’s global context forces all organizations to find ways of adapting to changed surroundings or surrender—that is, learn or burn.

A critical condition for making an institution’s ICT learning (e-learning) effective is assumed to be the institution’s key actors’ level of understanding the rationale for organizing goal-effective learning. As an overall framework for identifying conditions of goal-effective learning, a model of relations between certain factors pertaining to all learning is applied. However, the two organizations chosen for this study represent very different learning environments. One is a private university and the other a telecommunications corporation. As this article aims at describing and comparing understanding of and experience with e-learning in these two organizations, it is necessary to understand how they differ.

Corporations as learning arenas are different from educational institutions because they do not have learning as a primary objective. Corporate learning aims to serve corporate goals and needs, and in a general sense to increase competitiveness, profit, efficiency, and so on. At the same time, learning is a cognitive process in the minds of individuals. As such, learning is related to individual learning experiences, to groups and to the larger organization. The content of learning differs in the two contexts. In educational institutions, particularly universities, learning is based on scientific disciplines or defined knowledge areas. Corporate learning, on the other hand, is interdisciplinary and oriented to practical tasks (Sangster, MacLaran, & Marshall, 2000); learning in corporations is built upon work tasks or work situations, and how to master certain competencies or solve specific tasks. Time is a central variable. Learning strategies in corporations are often geared towards just-in-time learning. Just in case learning, on the other hand, is learning knowledge and competencies in advance of potential use, which is the time perspective of educational institutions where students enroll in a program to learn a range of competencies for potential use in the future. Finally, another important dimension relates to the degree of planning and structuring of learning activities. Educational institutions emphasize formal learning, which is course-based and where emphasis is put on validation of acquired knowledge through testing and evaluation. This is

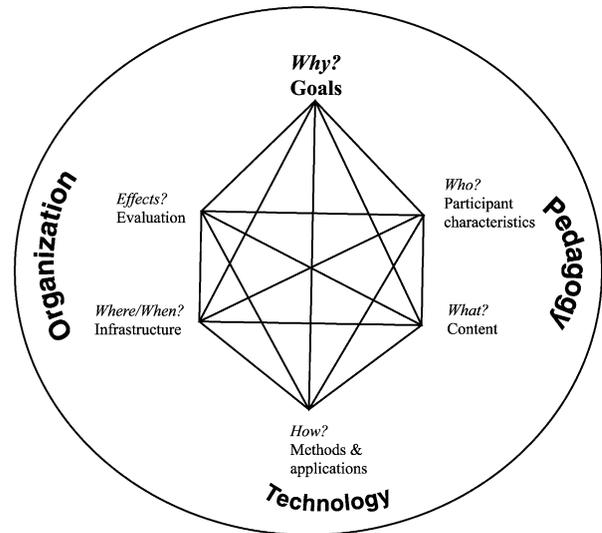


Fig. 1. A general model for organizing goal-effective learning.

not the primary focus of learning in corporations, where learning is a mix of formal courses and much informal learning, with the test of knowledge being improved job performance—the application of learned knowledge and skills to job tasks.

While the learning activities in educational institutions and corporations are markedly different, their efforts to organize learning share important properties with regard to planning and facilitating learning for groups and individuals. It is important to bear in mind that the model for organizing learning that we use (see Fig. 1) only takes into account deliberately planned learning activities—not informal and ad hoc learning, which represent the largest proportion of learning in corporations (Trondsen, 2000). Because e-learning represents pre-designed learning activities and our focus is on e-learning, our goal-directed model can be justified.

At a general and highly abstract level, the process of organizing and planning learning activities needs to take into account the following considerations and interrelationships: why learning activities are being planned; who the learners are; what is to be learnt; how it is being learnt; where and when the learning activities are taking place; and, what the effects are (see Fig. 1). These considerations correspond to didactical categories: goals, content, methods of instruction, and evaluation. In addition, explicit emphasis is put on the participant characteristics in terms of prior knowledge, learning styles and motivation. The model also emphasizes the need for considering the infrastructure for learning, in terms of where and when learning is to be archived with the view that different learning arenas impact planning and outcomes—the physical environment influences how to facilitate learning.

This general rationale of goal effective learning was formulated by Tyler (1950) and further developed in a Norwegian context by Bjørndal and Lieberg (1978), Engelsen (1997) and Thune and Welle-Strand (2000).

The model addresses two central concerns. First, didactical categories are related. This means that to plan goal-effective learning, one needs to take into account the different elements that need to be in place and the interrelations between them. For instance, characteristics of the participants will impact the content, the methods, and so on. This means that a shift in emphasis in one aspect (e.g. a shift to more e-learning) requires analyzing how this change will impact the other categories. Goal-effective learning is dependent on the level of consistency between aims, content, working/learning activities, applications, evaluation, student characteristics and infrastructure.

Second, according to several authors (Fjuk, 1999; Kristiansen, Dørfler, Yttri, Volden, & Jackobsen, 2000), the challenge of e-learning in corporations is to facilitate learning in such a manner that technology, pedagogy and organization are related and create a coherent, manageable and logical system for learning activities. The idea of treating these considerations as continuous (see Fig. 1) is that they overlap. The categories in the central part of Fig. 1 correspond to at least two of these outer dimensions. For example, while it might be tempting to regard technology as only related to e-learning applications, it is important to bear in mind that technology involves infrastructure, methodology and content as well as forming part of various working and learning activities. The same logic can be applied to the other dimensions. The organizational dimension applies not only to the setting of goals, selection of participants, keeping track of their knowledge needs and preconditions, issuing evaluations, and so on, but also to create space and time for learning. The pedagogical dimension also relates to most categories and their interrelations. What this model implies is a balance among interacting organizational, technological and pedagogical considerations rather than a view of these as separate spheres.

3. Methodological approach

In the study (Welle-Strand & Tjeldvoll, 2002)¹, three main forms of information gathering have been used. Initially, a review of research literature on a number of topics was conducted as well as interviews with senior researchers on e-learning at Stanford University, Stanford Research Institute, CERAM and INSEAD². Two pilot case studies were conducted with policy analysis and semi-structured interviews with key personnel³ at the Norwegian

School of Management BI (BI) and at Telenor, a Norwegian telecommunications company, to investigate the two organizations with regard to e-learning policy and practice. Both organizations are known for their commitment and experiences with e-learning, which is the reason they were selected. The following specific questions were posed.

1. What are the current policy aims of ICT-based learning and teaching?
2. How is ICT understood in the organization as a new tool for providing learning?
3. What current ICT applications for learning exist at the institution/corporation?
4. What are regarded as challenges and improvement areas for implementation of e-learning?

The data was analyzed to identify the actual status of ICT-based learning at the two organizations, to identify discrepancies between policy documents and key actors' understanding and assessment of the policies, and to compare the status and level of ICT-based learning at the two organizations. These data represent a pilot study. We do not claim to represent the total picture of e-learning at either BI or at Telenor.

4. Data presentation

Case 1: The Norwegian School of Management (BI). The Norwegian School of Management (BI) is a private business school in a social democratic state with few traditions for private education. In order to respond to uncertain markets and demands for flexible learning and teaching, BI's investments in ICT are increasing and ICT is recognized as of great significance in BI's policy documents.

Policy aims. One of the most distinct aims articulated in the strategic plan of 2000–2002 is that BI intends to become a leading higher education institution applying ICT. This plan states that BI will integrate ICT in all value-creating activities and transform into virtual learning arenas (BI, 2000a). The use of ICT is viewed as one of the most important competitive means and is assumed to provide economic efficiency as well as effectiveness in learning and teaching activities. Consequently, the need for developing appropriate instructional methods is recognized. "It is necessary that BI strengthens its efforts in facilitating future learning applications" (BI, 2000b, p. 24).

Current use of ICT. BI has ten years of experience in combining learning and ICT in its teaching activities, and represents one of Norway's oldest and greatest Web-based learning environments, according to the Yearly Report of 2000. According to the EQUIS⁴ Self Assessment Report

¹ Made possible by a grant from Accenture Norway's research fund.

² CERAM Graduate School of Management and Technology outside Nice, France, and INSEAD is an international management education institute in Fontainebleau, near Paris, France.

³ At BI, the eight persons interviewed represented professors/researchers, administrators and a professor in an administrative position. At Telenor, six persons were selected according to their closeness to the company's implementation of e-learning policies.

⁴ The European Quality Improvement System is an accreditation system based on an internal and external evaluation made by the European Foundation for Management Development (EFMD).

(BI, 1999), BI's recognition of the importance of training students to master common computer applications in the mid-80s has put BI in the forefront of ICT developments. The ICT Task Force Report (BI, 2000c) emphasizes that particularly BI's distance education and executive programs have applied Web-based tools in their education for a long time. The report notes that BI's ICT platform has developed gradually over the last ten years. The Internet was introduced in the early 1990s, and access to the net and e-mail accounts has been provided for graduate students in the main campus since 1997 and at the undergraduate Business colleges since 1998. E-mail is increasingly substituting for regular mail in BI's communication with students, and a number of courses use websites as teaching support. Introductory courses are offered at all BI's business colleges, and some courses include interactive computer-based simulation models in the learning process. Emphasis is also put on using video-conferencing systems in both teaching and for administrative purposes (e.g. meetings). Recently, the main campus developed a learning resource center as a physical space for accommodating ICT-based education and flexible forms of learning. However, the international external evaluation report of BI by EQUIS (BI, 1999) claimed ICT-enabled learning as one of BI's major shortcomings.

Assessment of policies and current use. How do key actors at BI look upon the institutions' written policies on ICT-based teaching and learning? There is widespread skepticism to BI's declared efforts within this field, and several of the respondents view the articulated policies and aims as without substance. Representative of this attitude is one person who said, "I am not optimistic concerning BI's further efforts—I believe it is only big words, even if they say this is the greatest project at stake made in BI at all times".

All respondents acknowledge that BI has an articulated aim of becoming a leading institution in terms of use of ICT, but the majority see the aims as too ambitious and not concrete enough to be taken seriously. Half of the respondents point to the importance of the top leadership's role in terms of support and resources in order to fulfill the policies of ICT-based learning. The respondents also stress that BI's policies on this topic do not seem to be rooted in institutional practices. How do the respondents see the current use of ICT in teaching/learning strategies? As indicated above, various reports concluded that the full use of ICT is not yet applied systematically in regular degree programs. The respondents support this. Almost all of them described the use of ICT as quite varied and often based upon the individual initiatives and efforts of a few.

The policy documents hold that BI is in the forefront in applying ICT-based learning and teaching strategies. However, the respondents in general do not share this view, as indicated by one response, "BI seems to have reached far compared to other Norwegian institutions. But

this is not an indication that BI has reached far, but that Norwegian institutions are far behind internationally". It seems clear that there is a discrepancy between several of the respondents' perspective and the policy documents in terms of the extent and quality of current application of ICT-based learning and teaching at BI, particularly for on-campus education. Related to the use of e-learning on-campus, the respondents claim that e-mail, home pages with information on content of courses, websites with questions and answers, and discussion groups are used by some. However, all these possibilities were emphasized as supplements to traditional teaching, as indicated in this response, "All communication in my courses outside the lecture room takes place on the Net, by means of home pages with information such as teaching plans, curriculum and lecture notes. E-mail is used for questions and answers. This digital delivery is a supplement and not competitive to traditional teaching".

Assessment of challenges and improvement areas. In terms of challenges and problems, the respondents highlighted four main issues answering the following question, "What do you foresee as problems/challenges when implementing ICT-based learning on a broad scale?" Six of the respondents emphasized the lack of knowledge and skills in using ICT; six saw the lack of motivation as important; five highlighted the lack of an overall and common policy and strategy; and four underlined the problems of insufficient infrastructure and the lack of a common platform.

As a follow-up, this question was asked, "What do you regard as the areas in which BI can/should seek improvement for systematic implementation of ICT in learning/teaching activities?" All but one respondent emphasized that BI has to develop an overall strategy for their ICT-based learning activities, while four pointed out that management must be more progressive and visible and provide more resources. Five respondents emphasized that an incentive system must be established; while all of them highlighted that the infrastructure must be improved, in terms of training and technical support as well as in terms of a common platform and access to resources. Five claimed that knowledge diffusion and exchange of experiences must be emphasized to a larger extent.

In terms of what respondents claim as a problem and what they regard as main areas of improvement, the need for an overarching strategy for use of ICT for teaching and learning is seen as central. Within this organizational strategy, respondents stressed the pedagogical dimension, as expressed by one of the respondents, "A pedagogical basis must be developed for BI's learning activities, taking into consideration that BI is a very complex organization. The overall ICT policies have to reflect a pedagogical rationale and the complexity of the institution".

A follow-up question on the pedagogical dimension was posed, "How is the balance between pedagogical and technical considerations exposed in BI's ICT-based

learning/teaching policies and practices?” All the respondents held that the balance between technical and pedagogical issues is in the favor of the former. One respondent said this, “They get fixed on the modern technology and become enthusiastic about it, without considering the pedagogical issues”.

Summing up the information gathered concerning the policy documents and key respondent assessments, findings show that

- There seems to be a mismatch between policy and current practice.
- BI has a tradition of using ICT in teaching and learning activities; however, in traditional undergraduate and graduate programs on campus, ICT is used as a supplement to traditional teaching only by a few committed academics.
- The key challenges and improvement areas the respondents emphasized were the need for an overarching institutional strategy, followed by top leadership endorsement and funding. Moreover, this strategy needs to take account of the pedagogical underpinning of ICT-based learning activities. Infrastructure, training, support and incentives are also considered to be important for successful e-learning.

Case 2: Telenor. Norway’s leading telecommunications company, Telenor, changed its status in 2001 to become a shareholder corporation operating in the international stock exchange market. This status implies that Telenor is in stiff competition both nationally and internationally. The need for continuous learning to keep pace with new technology and growing competition leads to a recognition of the importance of new learning methods for its in-service training.

Policy aims. Due to the new status and loss of monopoly, the organization and the employees face a number of challenges. To meet these changes, four strategic goals are defined in *Telenor’s (2000) Strategy for People and Organization*. Of particular interest is the emphasis put on the ability to learn faster and more efficiently than competitors; this strategic goal of learning will be supported by efficient working processes, technology, and flexible organizational structures. Four specific objectives are set to reach the strategic learning goal.

- Establish a common competence management process using Web-based tools which the different business units may use in their competence development processes.
- Facilitate efficient and cost-effective learning and knowledge development through the establishment of an e-learning infrastructure supported by learning and knowledge management systems.
- Develop arenas and networks for learning and exchange of experiences in which Telenor Corporate University (TCU) and R&D departments are central actors.

- Cooperate and exchange experiences within external networks.

Current use. All the respondents noticed that e-learning is implemented at Telenor, especially related to the projects established for the relocation of the main office.⁵ In this process, the need to establish an electronic learning system was emphasized. Such a system was aimed at improving employee competencies and keeping staff informed and motivated during the relocation. A project named E-ready was established to prepare employees for the new working environment and processes. An electronic learning management system (LMS) was proposed and implemented through the E-ready project. Two pilot tests for this project were initiated.⁶ The LMS is seen as a tool to make employees able to learn skills, methods and attitudes, when they need it and in a suitable way for each individual.

An important instrument in Telenor’s strategic learning agenda is TCU. In the present strategic plan, the concept of lifelong learning is an overall aim, focusing on the creation of an international learning environment. Through a combination of technology, business and science, TCU will provide the knowledge and experience necessary for future leaders at Telenor, in cooperation with national and international universities and telecommunications experts. TCU established the CORE center—a virtual center for sharing knowledge and experience. The aim is to facilitate a strategic focus on efforts related to the creation, codification and transfer of knowledge at Telenor.

Assessment of policy and current use. How conscious of these ICT policies are some of the company’s key actors responsible for e-learning? All of respondents are aware of the strategic learning agenda, and they also assume that using ICT-based learning should be the future policy aim at Telenor. However, the respondents indicated that the picture is not necessarily clear, and one said, “Telenor is on its way concerning policies, especially personnel policies and the development of methodology concerning e-learning as a part of strategic competence management. It is important to remember that there are many important projects, and there may not be a common agreement in e-learning as a project at stake”.

With regard to current use, half of the respondents claimed that other than the e-learning projects carried out as part of the relocation process, there was not much e-learning going on in Telenor. Respondents expressed different opinions about how far Telenor actually had reached with regard to ICT use and e-learning.

Assessment of challenges and improvement areas. In order to contrast written policy aims with opinions of respondents, the following question was asked, “What do you foresee as problems/challenges when implementing ICT-based in-service training on a broad scale?” While the

⁵ November 2001.

⁶ February 2001.

policy documents emphasized learning as a strategic measure and the importance of establishing a LMS, the respondents questioned whether the existing strategies provide an overall strategic framework for these activities in the company. Moreover, half of the respondents saw the upper management's lack of attention as problematic. Some related this to a lack of a common conceptual framework for e-learning, as indicated in this response, "One challenge is that there is no common conceptual framework, and clear definitions of what e-learning means. There is no clear conceptual thinking of e-learning in Telenor, and there are many definitions of the concept, as well as of technology and learning itself. But we are on the right way". Furthermore, respondents saw the motivation for learning and change of Telenor employees as problematic. This was particularly seen as a challenge for self-paced e-learning, where respondents expressed concerns that hectic work schedules would be a barrier to use.

When respondents were asked to state what they regarded as the areas where the company should seek improvement for broad scale implementation of ICT in its in-service training and learning activities, all emphasized that there is a need for working on pedagogical issues. A follow-up question concerning the balance between technical and pedagogical considerations was asked; respondents stressed that although the technology had been in the forefront, a tendency towards an increased focus on pedagogical issues had recently become evident. However, respondents did see a tension between technology and pedagogy in developing new solutions, where substantial resources are spent developing systems but less on courses and content.

Summing up the Telenor case

- Telenor has a strategic e-learning agenda, but the respondents' questioned how aware people in the organization were about learning and strategic competence development.
- The use of e-learning had primarily occurred in conjunction with a relocation process of the main office, and there seemed to be uncertainty as to the current use of e-learning.
- The respondents viewed clear strategic frameworks for e-learning and leadership involvement as central challenges; other improvement areas concerned pedagogical considerations as well as employee motivation.

5. Analysis and comparison

During recent years, The Norwegian School of Management (BI) has demonstrated a strong policy commitment to e-learning, stating that ICT shall be used in all value-creating activities to make BI a leading institution with regard to the use of ICT. However, the interviewed key actors held that the current practice is non-systematic and mostly left to individual preferences. They see the present

strategic plan more as rhetoric than reality. Their explanations for the current unsatisfactorily state of e-learning at BI are that: (a) there is a lack of an overall strategy for ICT-based learning activities; and (b) there is little acknowledgement of the pedagogical dimension of ICT-based learning. These shortcomings are primarily related to the strategic plan, but half of the respondents were also concerned about the need for more top management involvement in e-learning issues.

There is a strong trend toward e-learning solutions in corporations geared towards just-in-time learning and performance support. For e-learning to be a successful strategy, a systematic and pedagogically rational approach to learning is vital. A general framework for e-learning management requires that three equally important considerations be conceptualized and balanced: organization, pedagogy and technology. However, many corporations in implementing e-learning focus almost exclusively on new technologies, paying little regard to the learning needs of the organization and what the organization already has to offer in terms of resources, including space, time, and work structures.

How does Telenor stand in relation to corporate e-learning behavior? E-learning is definitely a focus in Telenor's policies and practices, as expressed both by policy documents and by key respondents. However, the key actors lack an overall strategy and framework for ICT-based learning activities and pedagogical issues. Motivation among employees is not given sufficient attention in the policy document or by the management. Telenor just recently changed its status from being 100% state-owned to being a registered shareholder company. Telenor is also in the midst of relocation. Telenor is young as a profit-based international corporation. This fact may account for the corporation's relative lack of a viable e-learning dynamic when compared with other telecommunications companies in industrialized Western countries.

There are peculiar similarities between Telenor and BI in terms of what key respondents see as challenges in becoming 'e-learning rational'. Three issues are referred to both: (1) lack of an overall strategy for ICT-based e-learning; (2) lack of pedagogical understanding for the use of e-learning; and, (3) lack of leadership and involvement from top management. Bearing in mind that these data are from a pilot study, they do not represent the total picture of either organization. However, these data represent assessments by highly qualified personnel. The similarity in assessments of challenges is interesting taking into account how different these cases are. Is there a technology bias operating? Is there a biased belief that e-learning simply means an ICT infrastructure? Or, is the market situation of both institutions still so favorable that they can afford to use rhetoric about e-learning as mere window dressing in their strategic plans? Compared to some of their competitors who implement ICT-based learning strategies because they have

‘to learn or burn’, the Norwegian’s heat may not yet be hot enough.

6. Understanding the rationale for goal-effective learning

Looking specifically at the didactical framework for organizing effective learning presented earlier, to what extent do the cases appear to be e-learning rational, in terms of planning with a systematic perspective, and in terms of considering an appropriate integration of organizational, pedagogical and technological considerations? Comparing information with the assessments made by the respondents, the respondents in both organizations express a concern about an apparent lack of holistic thinking and planning. This can be seen in two ways. Although both the organizations have e-learning high on the strategic agenda, the respondents question how realistic this emphasis is, and whether it will be fully implemented. The two cases vary, however, in terms of the assessment of the commitment to these policies. In BI, most respondents express opinions in line with the strategic agenda being mainly window dressing. In Telenor, respondents are not as skeptical. They acknowledge that the company sees e-learning as important. They do, however, ask how much awareness and understanding exists in the company’s units. One could question how well the strategic agenda is communicated within the organization and how well it is related to the company’s existing procedures for competence development.

Secondly, all respondents in both organizations were concerned about the pedagogical reflections of e-learning in their organizations. As one respondent in Telenor expressed, “We have the same pedagogical problems within e-learning as earlier. How do we learn, what is effective learning and how to facilitate this? How may we evaluate learning achievement?” This respondent’s concerns are in line with the perspective of planning learning within a coherent framework. It was found that the policy documents at both BI and Telenor were not concerned about a pedagogical framework to implement new technologies. Such a framework includes logical consistency between a learning goal, relevant content, relevant learning activities and methods, evaluation and infrastructure. Considerations that policies and strategies do not touch include: (a) the type of content suitable for e-learning; (b) implementation requirements for effective learning arenas; (c) motivation of staff and students; and, (d) how to assure and evaluate effectiveness and relevance. This may be interpreted as a lack of concern about whether ICT is relevant for certain purpose and content. This interpretation is supported by the assessments of the two groups of respondents. Common to them is that the policy documents are seen as insufficient in presenting a strategy for ICT-based learning in general and the lack of a pedagogical anchoring in particular. There are two possible

reasons for the policy deficiency concerning pedagogy. It may be intentional or it may be accidental. If the first assumption is the correct one, it means that pedagogy is seen as an irrelevant issue. The technology investment is viewed by policy makers as totally sufficient in and of itself. This represents the view that, when the technological infrastructure is in place, effective learning will be an automatic effect. If the absence of pedagogical concerns in the documents is accidental, then there is insufficient competence among the policy writers in the field of learning and pedagogy.

Both organizations’ respondents claimed that the efforts with e-learning developed and used until now over-emphasize the technology without consistently relating it to ongoing teaching and learning activities—the learning arenas, processes, and systems the organizations already use. A major challenge, then, seems to be the integration of new technologies within ongoing systems for organizing learning. For an organization having the ambition to become strong in e-learning; these are important issues to clarify. According to a majority of respondents and to the literature, it may be highly counterproductive if application of ICT for learning purposes is not balanced with the character of the organization (e.g. type of staff) and to pedagogy. At both BI and Telenor, there is presently a kind of ‘organizational schizophrenia’—a split in expressed understanding of pedagogical conditions for ICT-based learning and perceptions of e-learning.

7. Concluding remarks

The literature suggests and the empirical pilot have confirmed that the ICT revolution has had a dramatic effect on universities’ and corporations’ policies and implementation of ICT expected to facilitate learning and to make it more efficient. However, there is insufficient empirical evidence that ICT investments for learning are goal-effective. There is a lack of overall strategies for the use of ICT-based learning. This pilot study found a mismatch between policy writers and staff in terms of the need for pedagogical understanding in planning and implementing e-learning. Such understanding is absent in the policy documents but strongly emphasized by staff. This also touches the need to balance individual and corporate needs and goals. Such considerations ought to be reflected in an articulated corporate learning strategy endorsed by the top management and implemented in such a manner that both time and space are created to facilitate learning.

Though there are many challenges for organizations embarking on e-learning, knowledge in a number of areas is still scarce. Though there is a lot of information about e-learning solutions, knowledge of actual use is still limited. If e-learning solutions are to improve, one would need more than information on what types of technology are used; one would need to know how they are used.

Moreover, knowledge of the effects of e-learning is still limited, especially with regard to long-term effects. Research on motivation and learning styles/orientation with regard to e-learning is another interesting topic, as e-learning is often a solitary endeavor. On the organizational side, research into management of e-learning and impact of management on outcomes is limited. This pilot study has made it obvious that more research is needed in order to better understand how ICT-based learning can become more goal-effective and efficient within universities and corporations alike.

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