Technology-Enhanced Workplace Learning: Blended Learning in Insurance Company

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Abstract: This paper reports on a study of blended learning in a large, multinational organization. The focus is on understanding what blended learning means in the context of workplace learning, what advantages and disadvantages can be identified and, based on empirical findings, to discuss how courses are set up with the objective of enhancing learning outcomes through a combination of social interaction and individual learning. A sociocultural perspective guides our analysis, in particular Vygotsky’s notions of “duality of learning” and “zone of proximal development.” The sociocultural perspective helped us to choose one interpretation of blended learning among the multiple approaches available.

Keywords: blended learning, case study, collaboration-oriented blended learning, concept-based blended learning, duality of learning, sociocultural perspective

Introduction

The implementation of technology-enhanced learning (TEL) has attracted great interest from practitioners in the field of workplace learning. Many companies have started to implement e-learning solutions as a source for flexible training of their workforce, which we refer to as technology-enhanced workplace learning (TEWL) [8]. Our focus in TEWL is to understand how collaborative interaction impacts individual learning, and how this can be supported by computer-supported collaborative learning (CSCL) and e-learning. CSCL provides a framework for the development of technological solutions that focus both on communication and collaboration as well as interaction with the system itself (e.g., by applying multimedia learning principles and by providing appropriate scaffolding) [10]. On the other hand, there are trends in e-learning to move beyond self-paced tutorials, and this converges with one specific type of blended learning, one that integrates individual and collaborative learning. We developed this notion of blended learning that we refer to as collaboration-oriented blended learning. It is proposed to address some of shortcomings of self-paced e-learning that we found in our study.

1. Case

The company that we report on is a Nordic multinational insurance company. It has offices in Denmark, Finland, Norway and Sweden, the Baltic countries, and Russia. The company has three business areas: Private, Commercial, and Industry. The company provides services at both national and international levels. The training and competence
possibilities provided include on-the-job training, e-learning courses, and courses and seminars that are based upon the blended learning methods.

The implementation and adoption of training in the company has been determined by the principle “need to have” rather than “nice to have” (necessity instead of convenience). The company is very concerned with the outcome of its training programs in the form of tangible results. In total about 80% of all the e-learning courses available are developed internally. Until now the e-courses were built by a combination of text components to read and comprehend with some visual elements for display and interaction. Most of the courses can be characterized as basic and none of them supports collaborative interaction (e.g. distributed collaboration) except for the opportunity to contact the tutors and other participants via e-mail. After the study reported here, the company has taken an initiative to improve the e-learning adoption process, which includes the deployment of a company wide communication and information sharing system for collaborative learning.

2. Blended Learning

We conducted a comprehensive review of the literature to find a common definition for blended learning [2], [4], [9]. The review has been shortened for space limitations, but the interested reader can find the full survey in the following documents [5], [6].

The main objective of blended learning (BL) is to enhance the learning outcome by combining two kinds of learning environments, one associated with online learning and the other conventional teacher-led classroom learning. Although many definitions of blended learning share these criteria, there are some differences in the emphasis given to student involvement, use of multimedia, synchronicity, and learning environment [1], [3], among others. Current research reveals that the integration of online learning and conventional learning is still challenging and provides many avenues for further work.

A distinction between two types of BL emerged after the pre-screening of the data from the case we report on:

- **Concept-based BL (CBL1):** the online part is concept training and meant for individual use (e.g., self-paced e-learning), and the F2F part is collaborative learning (e.g., scenario simulation, work groups, small seminars).
- **Collaboration-oriented BL (CBL2):** the online part is computer-supported collaborative learning (e.g., virtual communities), and the F2F part is individual oriented (e.g., conventional classroom instruction, PowerPoint presentation, mentoring).

3. Theoretical Perspectives and Research Question

The literature on BL is practice oriented, but rarely informed by theory. A theoretical perspective can inform analysis and help to harness understanding and establish a scientific foundation for further work. In return this lead us to identify on one type of BL out of the multiple alternatives surveyed. Vygotsky’s idea on the (social-individual) duality of learning is inspired by the “genetic law of cultural development,” which says social interaction precedes individual learning [11, p. 57]. Vygotsky asserted that the process of learning and development occurred on two different levels and the difference between them he referred to as the Zone of Proximal Development (ZPD). Scaffolding is an application of these concepts [7], and describes the process of moving from what can be achieved without guidance to what can be achieved with guidance so that less
experienced individuals learn from those with more expertise to become independent problem solvers within a knowledge domain. We take as a starting point two models of blended learning (CBL1, CBL2) that were partly informed by Vygotsky’s ideas.

Thus, a theory-informed research question that we wish to explore in this paper relates to the components of blended learning and in particular the integration of individual and collaborative aspects of learning.

4. Analysis of Results

4.1 Method

We conducted an embedded single case study to address the research question. The case study was based upon a single organization but included more than one unit of analysis (e.g., developers vs. users; Nordic countries vs. Baltic countries).

Twenty-seven participants were interviewed. They were divided into three groups: 1) nineteen users (U for short) from Denmark, Latvia, Lithuania, Norway, and Sweden; 2) five developers (D) from Denmark, Norway, and Sweden; and 3) three external consultants (C) from Norway and Sweden (who are the representatives of the consultancy company who have been delivering courseware solutions to the company).

The data collection techniques (employed by the first author) were interviews, direct observation, participant-observation, and reading relevant written material obtained from the company (e.g., e-learning course manuals with screenshots of the system).

The data consist of about 30 hours of F2F interviews and one-hour interview held over the phone. The three-day observation of a course held in Estonia by the first author and her experience as a participant in a two-day course in Sweden are taken into consideration when analyzing the data.

All the interviews were held in English, and the extract cited in this chapter is used without any considerable changes in order to avoid misinterpretation of what was said by the respondents.

Open coding was used during the data prescreening process, thus combining bottom-up and top-down techniques and iteratively developing the themes in the data.

A summary of the properties of the three blended learning courses we focused upon is shown in Table 1.

Table 1. Properties of three blended learning courses in the company

<table>
<thead>
<tr>
<th>Course/Property</th>
<th>Objective</th>
<th>Length</th>
<th>Collaboration tools</th>
<th>Multimedia</th>
<th>Feedback</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer as a tool</td>
<td>Introduction to computer as a tool for all leaders</td>
<td>Self-paced E-learning</td>
<td>Contact with tutors via email</td>
<td>Videos, theory, guides, simulator</td>
<td>No feedback on answers</td>
<td>Practical simulation training, multiple-choice</td>
</tr>
<tr>
<td>Baltic management training program</td>
<td>Insurance business understanding for new leaders</td>
<td>5 hours of E-learning + 2 days of seminar</td>
<td>Community site, chat, forum, e-mail</td>
<td>Minimum theory, visual effects, graphics</td>
<td>No feedback on answers</td>
<td>Quiz</td>
</tr>
<tr>
<td>Essential project management</td>
<td>Project managers</td>
<td>20-40 hours E-learning + 1-2 days seminar (simulation)</td>
<td>E-mail, chat, forum</td>
<td>Textual (comment &amp; highlight while reading)</td>
<td>Automated comments from system</td>
<td>Quiz, final exam</td>
</tr>
</tbody>
</table>
4.2 Findings

Due to the brevity of the space, one theme will be discussed in this paper, the combination of individual and collaborative learning. For access to the complete set of themes, see [5], [6]. We used a qualitative approach for analysis, and analyzed the respondents spoken utterances with respect to a set of questions asked to all. The number of respondents who had similar answers to the same question is showed in parenthesis when discussing the response, e.g. 14/19 U, which means that 14 out of 19 users shared the view.

4.2.1 The combination of individual and collaborative learning

We present an example of how our informants reasoned about individual and collaborative learning and how they perceived learning as distributed between online and F2F components.

The Extract 1 presented below is taken from an interview with one of the external consultants (C) during observation of a course in Parnu, Estonia. The interview was held immediately after the course was completed. The topic is about the complementary nature of e-learning and classroom training.

Extract 1: Learning in the classroom can never be replaced with e-learning, because e-learning is e-learning. It is not comparable, you are not networking in e-learning, you are not meeting other people, and you are not discussing other things. The effect from meetings and classroom training is much bigger. I think you should mix them, definitely because e-learning is good for preparation, and it works. Sometimes it works very well in terms of follow-up for something done in the middle of the course, and at other times as a reminder.

The respondent emphasizes that e-learning and classroom learning complement each other, saying e-learning works well for certain things and at certain times. By itself e-learning is not considered useful because it lacks a social dimension (14/19 U; 3/5 D; 2/2 C). But this depends upon several factors as was shown in Table 1: target group, objective of the course, length of the course, and technological affordances. The respondent stresses that interaction with others (classroom training, networking, meeting, discussing) is important in the learning process (11/19 U; 5/5 D; 2/2 C). The respondent considers e-learning appropriate for individual, self-paced learning (13/19 U; 5/5 D; 2/2 C). For example to prepare oneself for classroom learning or as self-assessment after a (F2F) course has been completed (14/19 U; 5/5 D; 2/2 C). As a follow up question the interviewer asked if there was an opportunity to remotely communicate with the others, e.g. by e-mail. This was acknowledged, but the participants found themselves either uncomfortable with this opportunity (4/8 U) because they did not already know the other participants, or saw little use in it due to its asynchronous mode of interaction (6/8 U).

In accordance with the classification given in this study, this type of BL is concept-based blended learning (CBL1). The data analysis also revealed that learning might be effective only if it combines individual and collaborative learning activities, but the sequence of activities is complex and depends on the various factors shown in Table 1.

5. Summary and Tentative Conclusions

The interdependency of social interaction and individual learning is emphasized in the ideas of Vygotsky. Vygotsky suggested social interaction is a prerequisite of individual learning. His ideas have been applied in numerous ways (directly or indirectly) instructional design, ITS, and CSCL. We have found his ideas to be a useful lens for
understanding blended learning as well. Our respondents said that standalone self-paced e-learning was not complete as a method of learning in the context of their work unless it was extended by support for collaborative interaction.

BL has the potential to overcome some of the brittleness of self-paced e-learning as we have showed tentative evidence for in this paper. Nevertheless, blended learning is no panacea and introduces new challenges associated with the integration of online and conventional teacher-led classroom training, for example the sequencing of two components for best outcome. According to Vygotsky, learning can be understood through the concept of the Zone of Proximal Development (ZPD) [11]. Therefore, to develop authentic learning environments, appropriate scaffolding mechanisms should be developed for gradual transformation within the ZPD: either to enhance and direct self-paced learning or to guide collaboration with peers. With the increasing sophistication of ICT support, scaffolding will not be reduced to human-human interaction (e.g. more capable peers). On the contrary, pedagogical, social, and technological scaffolds will flourish in the near future. At the same time, the level at which scaffolding is provided may vary depending upon various factors: e.g., objectives of learning, complexity of domain, collaboration tools available, type of feedback possible, type of assessment required, etc.

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References