Research Proposal

Improving E-Learning Strategies
For Web-based Training
In Large Corporations

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Background

In order to get a better return on investment (ROI) in corporate training, an increasing number of large corporations start using e-learning for training of their work force and customers (below called e-learners). Through my research work I have seen that there is a great demand for pedagogical know-how for producing and buying corporate e-learning solutions.

Motivation to Learn:
This study is based on the assumption that adult e-learners have specific needs in an e-learning situation, and that e-learning materials should be designed to meet these specific needs. Adults are constructivistic learners, and thus, are actively involved in their own learning process. They construct new knowledge based on their prior experiences.

Learning Strategies:
Another assumption is that all learners need to be made aware of how they learn. By becoming aware of their strategies for learning, they can develop their learning skills, and thus, improve their learning outcomes. This will benefit both the learner and the corporation.

Improving Motivation and Strategies among E-Learners:
The third assumption, which forms the base for this study, is that the corporation can support the e-learner in the process of learning, as well as in his/her implementing new knowledge in future work tasks. The corporation can support the learner, by designing e-learning materials based on the kinds of strategies learners use in a specific e-learning environment, and also, by regarding the level of prior knowledge of learners.
Aim of Research

Smart e-learning solutions can help e-learners improve their learning strategies. Hence, such smart e-learning solutions will also give the corporation a better ROI in training.

This project will study various e-learning solutions in large corporations, and how these solutions could be designed to best meet the needs of learners. The aim is to investigate adults’ strategies for e-learning, i.e. how they learn, as well as how the educational design of e-learning solutions could be improved in order to support the learning process.

Targets of Research

It is a multidimensional task to find the best conditions for corporate e-learning. You have to focus on: a) the learners’ needs and strategies, as well as b) the learning environment.

On one hand, I want to investigate the corporate perspective: how the corporation can adapt the instructional layout for e-learning materials in order to meet the needs of the learners (arrow A in figure 1 illustrates the adaptation level of the instructional layout). On the other hand, I want to investigate the learners’ perspective: how learners most efficiently can adapt their learning skills to specific e-learning situations (arrow B in figure 1 illustrates the adaptation level of the learner).

In figure 1, (y) implies the best conditions for e-learning. It is the point where the instructional layout of the e-learning materials (A) and the needs and strategies of the learners (B) meet on an adapted level.

Instructional layout can be designed to meet the needs of the learners by, a) using a pedagogical framework as a base for the design, in order to best support the learning of the training materials; b) supporting various peoples’ preferred ways of learning; and c) providing instructional and tutoring tools that aid the learners in improving their learning skills.

Adaptation Process of E-Learning Environments

Figure 1. An illustration of the targets of research: The adaptation of both the learning environment (A) and the learner (B) in search of the optimised adaptation level, (y), in order to improve learning outcomes.
Frame of Research

Figure 2 is an extension of figure 1, in which the background triangle, (x), embraces the different aspects within the frame of research, including the targets of research as well as the aim.

At the top of the triangle, you find the needs of the corporation (no. 1). At the bottom, you find the other three aspects: the technical possibilities for the instructional layout (no. 2); the e-learner’s (employees/customers) needs and preconditions for learning (no. 3); and the course materials/contents (no. 4).

The dotted arrows show the relations which are influenced by the needs of inservice training. The aim of research (y) represents the point where the targets of research (A and B) meet on the best possible level of adaptation, as mentioned above in figure 1.

**Figure 2. An illustration, in which (x) represents the frame of research, including (1) the corporation, (2) the instructional layout of the e-learning materials, (3) the e-learner, and (4) the course materials. The dotted arrows imply how the needs of inservice training affect the involved aspects. (y) is the aim of research, representing the point where the targets of research (A and B) meet on the best possible level of adaptation.**
Figure 3 demonstrates ROI in research on e-learning, seen from the perspective of the corporation. The figure illustrates a dynamic loop of course development and improvements, as explained by the list below:

1. A need for inservice training surfaces in a certain area in the corporation. This determines the frame of contents of the training programme.

2. The corporation tries to supply this demand for new knowledge by creating a training programme. This determines the choice of teaching methods for presentation of the course contents, i.e. the instructional layout of the e-learning materials.

3. The training period is when the desired contents are presented to the learners through certain teaching methods. This study, as mentioned earlier, investigates the e-learning materials of a training programme, while other parts, such as traditional training methods, will not be studied.

4. Research measures are taken (within this study) to find out how well the e-learning materials meets the needs of the learners, as well as the needs of the corporation.

5. The training course developers at the corporation will get feedback from research. This feedback is aimed to guide further improvements of the e-learning solutions of the training programme, by giving alternatives for optimisation of the instructional layout. By this, the loop has come to a close, and may result in better know-how for developing new e-learning courses, as well as improving the existing ones (illustrated by the dotted arrow from no. 5 to no. 2).

Figure 3. A dynamic loop of course development, in which items 1-5 illustrate the process of e-learning course development as a result of research measures, seen from the perspective of the corporation.
Research Question referring to the Corporate Perspective:
How can the corporation adapt the instructional layout for e-learning materials (including content) in order to meet the needs and strategies of learners?

I intend to analyse the e-learning materials and feedback from learners, in order to see which kinds of learning styles and learning strategies are supported by the instructional layout and the technical alternatives.

Learner Perspective: Dynamics of Learning Skills Development

Figure 4 demonstrates ROI in research on e-learning, seen from the perspective of the learner. The figure illustrates a dynamic loop of how learners can improve both e-learning skills and work skills, as explained by the list below:

1. At the top, the loop begins with the learner’s needs for training and development of work skills, triggered either by himself/herself or work skills demands in the corporation.

2. The learner’s prior knowledge and learning skills are his/her preconditions for learning, including his/her motivation for learning. Prior knowledge will form a starting point for the learning experience that an individual will get from a specific training situation. Also, acquired learning skills used in former training situations, as well as the level of computer skills the individual has, will be the tools that the learner tries to apply to the e-learning situation. The motivational aspects are, e.g., attitudes, anxiety, goal orientation, and feelings of alienation.

3. The training period, when the desired course contents are presented to the learners through e-learning, in order for them to improve their work skills.

4. The research measures include survey questions for the learners to fill out (for a small number there will be interviews, psychophysiological testing and videofilming). The research methods are designed to illuminate what kinds of learning strategies the learners utilise in the e-learning situation. The purpose is to find out how the learners are adapting to the e-learning environment, and to find out how they could be supported in developing their e-learning skills. This will guide the designers of the e-learning materials in knowing how to adapt the instructional layout, including the technical layout, to meet the needs of the learners.

5. By getting feedback from research the learners will be able to reflect on their e-learning strategies, and, thus, also how they might improve them. By improving their e-learning strategies, they are able to develop within their zone of proximal development (Vygotsky, 1979), which is the space between their preconditions for learning and the goals of the learning situation (between no. 2 and 3 in the figure below), enhanced by the input from the survey. In other words, the learner reflections result in metacognitive awareness, and thus improved preconditions for learning, which will give the learner benefits in his/her next learning situation, as well as in his/her future work tasks (illustrated by the dotted arrow from no. 5 to no. 2).
Figure 4. A dynamic loop of learning skills development, in which items 1-5 illustrate the process of improvement and development of e-learning skills based on survey feedback and reflections of the same, seen from the perspective of the learner (employees/customers).

Research Question referring to the Learners’ Perspective:
How can learners most efficiently adapt their learning skills to specific e-learning situations? This I aim to investigate by looking at how learners apply specific learning strategies for learning in various e-learning situations/environments; do they acquire new skills, or do they adapt old learning skills to suit new requirements?

Return on Investments in Research on E-Learning

Figure 5 is an integration of figures 1 through 4, in order to demonstrate the impact of research measures in a larger perspective. It is illustrated by the metaphor of a sailing boat. The frame of research (x) is the sail. The loops of the corporate perspective and the learner perspective are the navigation lights on the sides of the boat guiding us ahead.

The bottom of the boat represents the know-how of the corporation; the supporting base keeping the corporation floating. Specific research measures (this study) are taken to raise the level of know-how, and, thus, improve the competence of the corporation.
There are seven arrows attached to the line of research measures (the water line of the boat). The arrows point at the aim, targets, respondents, as well as the impact of research measures. Again, explained by the metaphor of the sailing boat, the trippel-lined arrow in the middle is where the aim of research meets the needs of the corporation; the topmast keeping the sail up.

The double-lined arrows point the targets of research, keeping the sail steady in position to catch the wind. The single-lined arrows point at the work force (respondents) as well as the technical equipment (e-learning materials) sailing the boat. The dotted line arrows at the sides point at the impact of research measures, which will help the corporation in adjusting the navigation system, so that we will know in which direction to go ahead, by improving our sailing (e-learning) strategies.

**Figure 5. Illustrating how research measures can give return on investments and benefit both the learner and the corporation.**