

How well are different Learning Styles supported in the current design of Online Learning ?

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1 Introduction

Some years ago it would have been sufficient to refer to eLearning if an author wanted to write about learning online. However, due to the increased variety of different ways of online learning today there are now much more expressions. Virtual Learning Environments (VLE), Computer Mediated Conferencing (CMC) and Computer Based Coursework (CBC) are only some acronyms which describe different forms of online learning, and most of the Higher Education institutions in the UK use at least one VLE (Browne & Jenkins, 2003). This brief overview of literature will show the ways in which learning theories are applied in the design of online learning in general. The author is especially interested what the designers do with regard to different learning styles. Therefore the next section will highlight some learning styles. The main part will then look how these learning styles are included in current literature about learning online. At the end a short conclusion summarizes the main outcomes.

2 Learning Styles

A key work in the connection between learning theories and practical use was written by Kolb(1984). He came up with four different learning styles (pp. 77-78). First there are convergers, who rely primarily on abstract conceptualization and active experimentation and are good at problem solving, decision making and practical use of ideas. Second there are divergers, who are emphasizing concrete experience and reflective observation and good at imaginatively ability and the awareness of meaning and values. Third there are assimilators, who rely on abstract conceptualization and reflective observation and are good at inductive reasoning and the ability to create theoretical models. And last there are the accommodators, who are emphasizing concrete experience and active experimentation and are good at doing things and getting involved in new experiences. But the learning style is also affected by the psychological type of a learner. Jung (1977) has categorized them into eight different types. There are the extrovert who is concentrating on other people and things opposed to

the introvert, who is oriented toward inner feeling and ideas. Then there are judging types who like order through decisions and opposed to them the perceiving type who tries to collect information and data. The next bundle is then the sensitive type, who relies on concrete events and his senses. Opposed to him is the intuition type, who likes to see things as a whole and emphasizes on possibilities. Last there are thinking types who emphasize on analysis and logic opposed to feeling types emphasizing on human values and beliefs. And to make the whole thing even more complex, according to Tyler(1978) all these attributes can't be described as static attributes, but can change. "We can use the general term *possibility processing structures* [italics added]to cover all of these concepts having to do with the ways in which the person controls the selection of perception, activities, and learning situations" (Tyler, 1978, p. 106). The next chapter will analyze if and how online learning designers try to create environments with support for all these different kinds of learners.

3 Current Literature about Learning Online

"E-Moderators could fall into the trap of thinking of CMC as one experience, whereas each participant will respond according to his or her individual needs" (Salmon, 2000, p. 69). But despite this quotation Salmon offers one solution, no special treatments for assimilators or accommodators, for example. But there seem to be differences for participants in online learning environments. Haydn Blackey stated "Some students did not feel they could contribute, although these same students would have contributed in a face to face group" (Salmon, 2000, p. 13) when he was talking about a CMC environment. Opposed to this is a research looking for differences between face to face and asynchronous online communication (Ainslie, 2001) which has come up with 66 % of the participating students saying that the equity of participating is better in the online communication. These differences have been acknowledged in the conclusion of Fahy.

Individually, there was considerable variation in uses of these conventions and communications techniques. As would be the case in other forms of social networking in learning environments, everyone does not choose to engage in identical supportive behaviour (Fahy, 2003)

In the opinion of the author these differences are probably explained by different learning and psychological styles of the learners. And it seems as there has to be done work as a recent study in the UK among 4100 online learners from Corporate University Exchange showed a dropout rate of 71% in online and distance learning (Simpson, 2003). Simpson has written an interesting book about how to increase the retention of students, but Simpson sees the problems more in organizational, emotional and cognitive problems. Some examples would be problems with accommodation, work hours, confidence, introversion and family pressure. But there are authors out there who see the problem in the

different learning styles. One of them is Bates. He stated that “it is not only important that students are given access to the most appropriate tools[...] but also provide appropriate support for the diversity of individual student learning styles” (Bates, 2001, p. 1). Hence Bates designed a CBC system to teach how to control a laboratory in an experiment, still with a teacher, not stand alone learning. But the thing Bates added was that he designed four different deliveries of the content. First he has a drill environment. Here Bates is providing simple interaction through yes/no answers, guidance and discrete instruction to gain sequential learning. The second offer is a tutorial environment, where the aim is to reach guided sequential learning. Students can experiment and ask the tutor for guidance, if they want to. Then Bates offers a modelling simulation, where the students are in control. Here the teacher has to provide goals and conceptual and strategy guidance, and the aim is to get discovery learning. The last way of teaching is the interactive simulation, where again the students have the control, but more guidance from the teacher to gain guided discovery learning. As outcomes Bates stated that

This paper has highlighted the need to develop software for CBC environments that is capable of supporting a range of student learning styles. It has shown that there are some distinct advantages in using a taxonomic driven design and evaluation approach (Bates, 2001, p. 7)

The conclusions the author has drawn from the literature review follow in the next chapter.

4 Conclusions

Although a considerable amount of research has been carried out in recent years in learning online, it seems that the connection between previous learning theories and current design of online learning is still not the best. It is especially hard to find literature about experiments where deliberately more than one way of content delivery is designed. Most of the literature is still only designing one solution for all, but some studies show that this might cause problems. In the opinion of the author there should be more work done in this area to reach more kinds of learners. The new way of teaching through or with support of computers offers so much possibilities to appeal to people who haven't been able to participate successfully in the standard education system due to different reasons. We shouldn't repeat mistakes of the history and design only one system and everyone who doesn't fit in will have troubles, though he/she may be very intelligent in his/her way. A statement of Kolb from 1984 “without guiding theory and principles experiential learning can well become another education fad” (p. 3) fits perfectly in this conclusion, just the experiential learning has to be replaced by online learning.

References

- Ainslie, E. (2001). Student-centred collaborative learning via face-to-face and asynchronous online communication: What's the difference? *Monash University, Australia*.
- Bates, B. (2001). Supporting a range of learning styles using a taxonomy-based design framework approach. *Cheltenham and Gloucester College, UK*, 45.
- Browne, T., & Jenkins, M. (2003). A longitudinal study perspective between march 2001 and march 2003 for higher education in the united kingdom. *UCISA*.
- Fahy, P. (2003). Indicators of support in online interaction. *International review of research in open and distance learning*.
- Jung, C. (1977). In *Psychological Types* (pp. 12-13,28,68). Princeton University Press, New Jersey.
- Kolb, D. (1984). In *Experiential Learning: Experience as the source of learning and development* (p. 1-95). Prentice Hall, New Jersey.
- Muirhead, B., & Charles, J. (2003). Interactivity in computer-mediated college and university education: A recent review of the literature. *Ifets*.
- Salmon, G. (2000). In *E-Moderating - The key to teaching and learning online* (pp. 1-35,69-84). Kogan Page, London.
- Simpson, O. (2003). In *Student retention in online, open and distance learning* (p. 1-15). Kogan Page, London.
- Tyler, L. (1978). In *Individuality* (p. 106-107). Jossey Bass, San Francisco.