

# Chapter 5.14

## Individual and Collaborative Approaches in E-Learning Design

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### ABSTRACT

*There is no doubt that e-learning is not all about technology but includes the human aspect which is often neglected in studies of e-learning. This chapter addresses the interface between technology and the learner by using cognitive psychology to discuss learning processes in formal and informal groups, investigate how to create competent learning groups, and how to design e-learning to facilitate optimal learning by an individual in a group setting. The chapter proposes an e-learning design based on a blend of cognitive and activity theories. It also presents a pilot empirical study that measured the value of e-learning from four constructs derived from the theories. The result of the study suggests that pure virtual learning environments may not always be the best option as some users require some physical contact. While e-learning may fill many gaps, it should be perceived as a tool that needs to be attended with emotional and social contact.*

### INTRODUCTION

There is no doubt that there is no such thing as pure technology *simpliciter*; technology always interacts with the people who invent and make use of it. Technology, including technologies used

for the delivery of on-line learning, cannot be understood and used as though it has an existence distinct from the skills, interests and imaginations of the people who adapt it to their needs and ideas.

This chapter focuses on e-learning as a psycho-socio-technical phenomenon. Its centre of attention will be the learner at individual and

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group levels and how to address his or her needs at those levels in the e-Learning Design Process (eLDP). E-learning design often puts the main focus on technical aspects of e-learning such as on-line content, technical problems (e.g. accessibility, bandwidth, printing facilities) and not taking into account the problems associated with the divide between technology and human. This chapter will provide psychological background will be provided. The most important findings in the cognitive psychology will be reviewed and discussed. Research will go back to Edward C. Tolman's findings in the field of cognitive psychology and to his legacy that exists till today in academic research and disputes. Problems in learning and e-learning from a psychological point of view will be identified and discussed. In general, e-learning will be perceived as a phenomenon starting with people rather than pure technology.

It will also be described how psychologists perceive individuals and their interactions which may lead to the formation of a group. It will be assessed how particular learning processes proceed in formal and informal groups. Group dynamics will be discussed and assessed in the context of time as well as cause and effect relationships and e-learning content. It will be discussed whether and how the course may be structured in a way that is responsive to the learner's needs as they emerge or change throughout the course. The effect of e-learning content, environment and context on learners both at individual and group levels will be examined.

In the next section it will be investigated how to stimulate creation of groups and how to prevent creation of informal groups that could deteriorate learner's experience (cheating, groups that dominate members and limit their own creativity). It will also be answered whether the same methodology may be applied to pure virtual groups. Discussion will be carried out on how to assess groups – their cohesion, sense of community among members, structure and performance. It will be discussed how an individual can fit into a group and benefit

from it and to what degree groups are influenced by individuals and their quality.

It will be investigated how to put theory into practice and how to design e-learning content, structure and delivery that would address the learner both at individual and group levels. It will be answered how far it is possible and feasible to go with the customization of content and delivery to suit individuals from different backgrounds and with diverse needs and attitudes. It will be explored whether it is possible to design an e-learning course in such a way as to increase individual creativity of the participants. It will also be considered how to maintain quality in e-learning projects designed from scratch as well as transferred from other media of delivery. Ideas in this section will be supported by findings of a survey distributed among the participants of e-learning courses delivered by the University of the West of Scotland as well as interview with a person responsible for their administration.

## **BACKGROUND**

In order to educate the learner at individual and group levels it is necessary to begin with a consideration of the social psychology of cognition. If cognition is simply our understanding of our world then how we learn to handle and to manipulate that world is to a great or small extent a function of our cognitive awareness. We learn as we understand. Both learning and e-learning fall short of what they can achieve unless individuals enhance their cognitive and intellectual power to explore, question and play with whatever the computer presents and breath life to their imaginations.

Answers to questions are constructed by the joint activities of the computer and of the individual learning to use it. Byrne (2007) goes so far as to argue persuasively that the rational thought of the computer (and one hopes that of the learner and the practitioner) is lacking unless there is room for

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