

## Chapter 5.5

# Using Emotional Intelligence in Personalized Adaptation

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### ABSTRACT

The process of training and learning in Web-based and ubiquitous environments brings a new sense of adaptation. With the development of more sophisticated environments, the need for them to take into account the user's traits, as well as the user's devices on which the training is executed, has become an important issue in the domain of building novel training and learning environments. This chapter introduces an approach to the realization of personalized adaptation. According to the fact that we are dealing with the stereotypes of e-learners, having in mind emotional intelligence concepts to help in adaptation to the e-learners real needs and known preferences, we have called this system eQ. It stands for the using of the emotional intelligence concepts on the Web.

### INSIDE CHAPTER

The process of training and learning in Web-based and ubiquitous environments brings a new sense of adaptation. With the development of more sophisticated environments, the need for them to take into account the user's traits, as well as a user's devices on which the training is executed, and to place them within the context of the training activities, has become an important issue in the domain of building novel training and learning environments. Personalized adaptation represents a key aspect in technology enhanced learning and training communities. Different users could have different learning needs and preferences, and they could have different knowledge levels, as well as different opportunities to use certain training methods related to the fact that both users and their labs are placed in physical world. The chapter presents an approach to the realization of personalized adaptation according

to the individual user's traits, such as: personality factors, cognitive factors, learning styles, and personality types (stereotypes) on one side, and user's devices on which the training is executed on the other side. At the same time, we are interested in how to manage teaching resources when the e-learners have different emotions, perceptions, and reactions. Because that we are dealing with the stereotypes of e-learners, having in mind emotional intelligence concepts to help in adaptation to the e-learners real needs and known preferences, we have named this system eQ, which stands for the using of emotional intelligence on the Web (electronic emotional intelligence). There are several key paradigms being used in the conceptual design of the eQ system: (1) this approach is based on using a multiagent system with the belief-design-intention agent rational model, (2) the eQ system is initially defined by considering component-based definition of the adaptive educational hypermedia system, (3) the eQ system uses the FOSP adaptive learning strategy, and (4) the main aim of the eQ system is to improve the adaptation processes in the Semantic Web and Grid environment.

## INTRODUCTION

The history of learning can be followed back to ancient Greece, where Socrates used tutorial learning. Plato established one of the earliest known organized schools in Western civilization, the Academy in Athens, and further developed the form of live dialogue. Aristotle considered learning by doing as an efficient way of education. Already, in the 17<sup>th</sup> century Comenius wrote that learning has to be adjusted to the learner's abilities. Each person learns differently and needs to develop their own learning skills in their own way. Looking into the past we can see that ideas about how to learn are not new. However, what is new are the circumstances and opportunities. The existing school system is suitable for the

industrial age, when manufacturing processes were performed in a routine way. The knowledge age demands higher skilled jobs based on critical thinking, creativity, collaboration, and interpretation abilities. Additionally, the percentage of "knowledge workers" is rapidly increasing and 50% of all employee skills become outdated in three to five years (Moe & Blodgett, 2000). Therefore, using only traditional methods cannot cover today's educational needs. Many relevant authorities have recognized the new demands on one hand and new potential on the other. In the following we mention some of them.

Peter Drucker sees new horizons. *"For the first time substantial and rapidly growing number of people have choices. For the first time, they will have to manage themselves. And society is totally unprepared for it."* He cites Plutarch in Drucker (1989), saying that education requires a focus on the strengths and talents of learners:

*Any teacher of young artist—musicians, actors, painters—knows this. So does any teacher of young athletes. But schools do not do it. They focus instead on a learner's weaknesses. One cannot build performance on weaknesses, even corrected ones; one can build performance only on strengths. And these the schools traditionally ignore, in fact, consider more or less irrelevant. Strengths do not create problems—and schools are problem-focused.*

Alfred Bork (2001) considers current and new paradigms concerning technology and learning. The current main learning paradigm, called *information transfer* or *classroom-teacher paradigm*, envisions the primary aim of learning as the acquisition of information. Its major auxiliary learning technology is the textbook. The author argues that we need much better learning for all and this learning has to be affordable for the individual and the world. Therefore, he predicts a future paradigm—*tutorial learning*. It sees learning as fully active, focusing on the student

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