Chapter 36
Design and Implementation of an E-Learning Model by Considering Learner’s Personality and Emotions

S. Fatahi, M. Kazemifard, and N. Ghasem-Aghae

Abstract Emotion, personality and individual differences are those effective parameters on human’s activities such as learning. People with different personalities show different emotions in facing an event. In the case of teaching and learning, personality difference between learners plays an important role. In virtual learning projects this point should consider that the learners’ personalities are various and the teaching method used for each learner should be different from the other learners. In this chapter, a new model presented according to the learning model based on emotion and personality and the model of virtual classmate. Based on their knowledge base, the virtual teacher and classmate express suitable behaviors to improve the process of learning according to the learner’s emotional status.

Keywords E-Learning · Learners Personality · Emotion · Implementation · virtual classmate

36.1 Introduction

E-learning is usually defined as a type of learning supported by information and communication technology (ICT) that improves quality of teaching and learning. E-learning system is a powerful tool for achieving strategic objectives of the university (teaching, research and serving the society) [1]. E-Learning like all other tools offers advantages such as: access to differentiated online resources, Self-directed learning, and Learning matches learners’ lifestyles, etc. Despite of all the advantages this kind of learning lacks the necessary attractiveness most of the time. It seems that regarding the human characteristics and inserting them in virtual learning environments, it would be possible to show these environments more real.
Emotion, personality and individual differences are those effective parameters on human’s activities such as learning. People with different personalities show different emotions in facing an event. Difference in the characteristics of the individuals is reflected in their daily activities and their works. In the case of teaching and learning, personality difference between learners plays an important role. The learner’s personality will be effective in his learning style [2]. In virtual learning projects this point should consider that the learners’ personalities are various and the teaching method used for each learner should be different from the other learners.

36.2 Previous Works

In virtual learning systems created up to now, the learner’s emotions received much more attention and the emotional agents were more employed. In a few of these systems personality drew our attention as an independent parameter that some of them are mentioned here:

In ERPA architecture by using ID3 algorithm, the learner’s emotional reaction towards an event is predicted (for example, taking an exam score) [3]. Chaffar and his colleagues used the Naïve Bayes Classifier method to predict the learner’s emotions [4]. In ESTEL architecture, the Naïve Bayes Classifier method is used to predict the optimized emotional status. In this architecture, in addition to emotion, the learner’s personality is also considered. In this system, a module tries to create and induce an optimized emotional state. For instance, when the learner enters the system, after the identification of learner’s personality, for example extrovert, and recognition of optimal emotional state, such as happiness, an emotion is induced to that learner by showing various interfaces (e.g. music, picture, and etc.) to him [5].

In Passenger software designed by German researchers, cooperative learning methods are used. This software examines a series of emotions for the virtual teacher that is present in the system based on OCC model, and invites the learners to group work. The virtual teacher traces the learners’ activities and helps the learners who are not able to do cooperative activities [6]. Abrahamian and his colleagues designed an interface for computer learners appropriate for the type of their personality using MBTI test and concluded that learning through this interface as a result of using personality characters leads into developments in learning process [7]. In implementation performed by Maldonado and his colleagues, a virtual classmate agent is used. This agent is placed beside the learners, and mostly plays the role of a co-learner and a support. In this project each of the teacher, learner, and classmate has own emotions and the learner’s emotions affected his/her classmate [8].

36.3 Psychological Principles

Emotion, personality and individual differences are those effective parameters on human’s activities. Everybody needs special learning style according to his/her personality characteristics. Some tools are used to evaluate the different learning style