

## Chapter 6

# A Proposed Framework Factors of the Acceptance of Recommender Systems in E Learning for Saudi Universities

**Hadeel Alharbi**

*University of New England, Australia*

**Kamaljeet Sandhu**

*University of New England, Australia*

### ABSTRACT

*There is still a gap of knowledge on the usage of recommender systems in Saudi universities and the wider issue of technological change in the universities of developing countries. Relatively, this lack of knowledge is an issue to universities seeking to meet students/instructors' expectations and requirements by offering consistently high perceived service standards of e-learning services in a rapidly changing technological environment. To address this issue, this paper seeks to explore the impact of the acceptance and adoption of recommender systems in e-learning for Saudi universities and this will help to investigate the students/instructors experience according to the e-learning service quality. Thus, a proposed e-framework has been presented. Such framework describes the factors of acceptance (such as service quality, student/instructor experience, and Human Computer Interaction guidelines) should be considered in the e-learning system because it is viewed as a determinant of student/instructor/university satisfaction.*

### INTRODUCTION

Traditionally, a personalised model of learner is used to drive adaptive e-learning applications and the way in which learning material is provided to the learner. As such, the learning materials available in the system are a priori according to the application designer. Open e-learning applications however rely only learning materials that are already available online. The user's interaction with the application then determines the materials that become integrated into the system. In this way, users are conceptualised

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to be communicating (indirectly) with the open online application and would therefore benefit greatly from the provision of updated learning materials in the form of tailored recommendations (Maâtallah & Seridi, 2012a; Maâtallah & Seridi, 2012b; Tang & Mc Calla, 2005; Tang & McCalla, 2009).

Currently, software applications can offer recommended items of interest (e.g. movies, websites etc.) to uses which are related to particular search fields. These Recommender Systems are typically categorised as collaborative, content-based, or hybrid recommendation filters. Collaborative filtering systems for example are part of a personalised Recommendation System that first predicts and then responds to a user learner's particular area of interest (e.g. courses, grades, links etc.). Personalised recommendation systems have one short-coming however in that the recommendations being made may not in fact to the most suitable outcomes for the users (Basu, Hirsh, & Cohen, 1998; Herlocker, Konstan, Borchers, & Riedl, 1999; Melville, Mooney, & Nagarajan, 2002; Schein, Popescul, Ungar, & Pennock, 2002). For instance, a learner with only basic knowledge of a particular topic (e.g., data mining) may only be interested in accessing simple and descriptive information of the topic related to a particular learning field.

## **USER EVALUATIONS OF SERVICE QUALITY AND LEVELS OF SATISFACTION**

Service quality and user satisfaction are vital concepts to academia and industry in order to study the user evaluations and experience, and to practitioners as means of building competitive benefits and user loyalty (Iacobucci et al, 1995). Iacobucci et al. (1995) presented two reports to determine whether or not service quality and user satisfactions have special antecedent reasons, consequential effects or both. As a result, the two reports introduced fairly robust user concepts of service quality and satisfaction. It should be noted that sometimes the service quality and user satisfaction are used interchangeably in both industry and academia.

In another study, DeRuyter et al. (DeRuyter et al, 1997) performed an empirical test to the health care service using SERVQUA<sup>1</sup> in attempt to indicate the relationship between service quality and user satisfaction. The results showed that the service quality can be treated as an antecedent of user satisfaction. Further study, the authors (Brady et al., 2001) used statistical analysis to study clients of fast-food restaurants in USA and South America. The results illustrated that there was a special relationship between service quality and user satisfaction with consideration to different cultural background. In addition, Sureshchandar and others (2002) pointed out the relationship and interaction between service quality and user satisfaction. Therefore, most of academic surveys and studies stated that the terms quality and satisfaction are appeared highly similar.

However, some researchers in quality pointed out that there is a difference between both terms in that the satisfaction is more specific, short-range evaluation and quality is more general and is long-range evaluation (Parasuraman et al, 1998).

Figure 1 shows the relationship and intersection between the service quality and user satisfaction. When applying this model in Figure 1 to any randomly data set, the result gives identical fit statistics whether quality was hypothesised (MacCallum, 1993).

Several research studies have pointed out that web service quality is an antecedent of user satisfaction (MacCallum, 1993; Parasuraman et al, 1998; Udo, 2010). E-learning systems model provides tool for assessing and comparing the level of e-service maturity. So the objective of this dissertation study is to build an e-user satisfaction strategy and measuring service quality by relating it to the e-learning service quality via adopting recommender systems.

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