Chapter 13
Main Features and Types of Educational Use of Wiki Technology

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ABSTRACT

Wiki technology has become very popular during the last years and is used in many fields. It enables the collaborative creation and management of content retaining the history of changes. There is abundant wiki-based content on the web covering a large number of subjects. A significant contribution of wikis involves education. Under certain conditions, technology may enhance the learning process due to the unique features it encompasses. In this context, wikis may prove very helpful as they provide the infrastructure for collaborative learning approaches and the development of online learning communities. This chapter discusses main features of wikis, wiki features specifically required in education, and typical uses of wikis in education. Representative examples of successful wikis are presented. Future research directions are also outlined.

INTRODUCTION

Technology has been integrated in non-formal and informal education (Kálmán, Molnár, & Szűts, 2018; Latchem, 2018) and in all levels of formal education from early childhood to higher education (Lytras, Papadopoulou, Marouli, & Misseyanni, 2018; Prentzas, 2013; Voogt, Knezek, Christensen, & Lai, 2018). The Web plays an important role in technology-enhanced learning. There is a variety and abundance of educational resources available anytime and anywhere. Synchronous and asynchronous communication tools facilitate interaction. Various Web-based customized systems are used to support

learning such as Learning Management Systems (Antonis, Lampsas, & Prentzas, 2008) and user-adapted systems (Hatzilygeroudis & Prentzas, 2006; Prentzas, Hatzilygeroudis, & Koutsojannis, 2001). Blended and distance learning approaches may be supported. The aforementioned are merely indicative benefits that the Web may provide to education.

The Web 2.0 is considered an evolution of the initial Web as it enhances participation, social interaction and collaboration. It provides richer experiences to users and enables them to interact much more with applications and among themselves (O'Reilly, 2009). Users may create and update content and provide comments. Applications benefit from user participation. Applications based on social interaction such as blogs, wikis, multimedia sharing, podcasting and social networks are considered representatives of Web 2.0 (Mhouti, Nasseh, Erradi, & Vasquèz, 2017). Many researchers have attempted to integrate Web 2.0 tools in education (Bugawa & Mirzal, 2018; Mhouti, Nasseh, Erradi, & Vasquèz, 2017; Zarei, Mohd-Yusof, Daud, & Azizi, 2017).

Wikis are among the Web 2.0 tools that are exploited in education. Wiki technology enables the collaborative creation and management of content retaining the history of changes. The available wiki-based content covers a large number of subjects. In education, wikis may prove helpful as they provide the infrastructure for collaborative learning and the development of online learning communities.

This article outlines main technical and educational aspects concerning wiki technology. It is organized as follows. First, background information is provided covering the main features of wiki technology. Next, general aspects regarding use of wikis in education are discussed. The following section discusses solutions and recommendations including representative examples of wikis. Further on, future research directions regarding wiki technology are outlined. Finally, the article concludes.

BACKGROUND

A wiki is a website whose content is created and updated through asynchronous collaboration among users. The first wiki was WikiWikiWeb and was implemented by Cunningham (Leuf & Cunningham, 2001). It became available in 1995. During the following years, the participatory philosophy of wikis was widely accepted.

Roque (2013) discerns four main types of wikis, that is, enterprise wikis, educational wikis, public wikis and personal wikis. Personal wikis are the simplest ones and are used as personal Web pages. Enterprise wikis are discerned into three categories: single-user wikis whose creator shares the content with other company employees, project-group wikis involving collaboration of a group of users in a specific project and enterprise-wide wikis concerning the whole company. Educational wikis are discerned into three categories: course wikis involving a specific course of educational institutions, knowledge wikis used by teachers to share knowledge and subject wikis that include content about a specific subject. Public wikis may be accessed and updated by anyone and are discerned into two categories: general-purpose public wikis including information about various subjects (e.g., Wikipedia) and specific-purpose public wikis concerning a specific subject.

The most well-known wiki in the world is probably Wikipedia. Wikipedia is only one of the many wiki applications available on the Web. The flexibility of wiki technology enables it to be used in different ways and to handle all types of content. Indicative application fields for wikis are the business sector (Bolisani & Scarso, 2016), crowdsourcing (Al Helal & Mokhtar, 2018; See et al, 2015), decision support for emergency management (Rauner et al, 2016), education, government services (Al Helal &

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