



WEB TECHNOLOGY USE AMONG UNIVERSITY STUDENTS

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ABSTRACT

Adopting e-learning systems in higher educational institutions in Yemen seems to be the most efficient solution to improve educational conditions. Using internet and web technologies will provide new advantages to facilitate teaching and learning processes. To understand students' use of web technologies in learning environments, an online survey was conducted among 135 undergraduate and postgraduate students. This paper presents a description of the type of web technologies and their intended purposes from which it is hoped we will gain important insights for better adoption and use of web technologies in education.

Key words: Web technologies, LMS, Web 1.0, Web 2.0.

1. INTRODUCTION

Web technologies are growing rapidly which in turn affects the development of e-learning technologies and tools that support educational systems. There are numerous web applications including Web 1.0 and Web 2.0. One main difference between Web 1.0 and Web 2.0 is the role of users. In Web 1.0, the users act as consumers, while in Web 2.0, any user can create and update the content [1]. According to [2], Web 2.0 distinguishes itself from Web 1.0 through its empowerment of ordinary users to create, control, and share web contents, which contributes to collective intelligence.

The first generation of Web 1.0 was designed mainly for presenting information with the role of the user limited to simple access of the presented information. The nature of the Web 1.0 structure is reflected in the way e-learning tools and services are developed, whereby e-learning 1.0 tools limits the role of students to a passive role that does not support interactive interaction [3].

Web 2.0 technologies such as blogs, wikis, podcasts, RSS feeds, and social networking can be described as 'social software' because they are perceived as being especially connected whereby users collaborate to develop open content to the public [4]. According to [5], among the important characteristics of Web 2.0 is that it uses the internet as a platform from which users can access and use different resources, it supports interactive and user-friendly interface, the design principles of Web 2.0 encourage users to participate and share, it is a social networking tool that enables users to provide feedback and exchange ideas collaboratively, and users have content ownerships in the site and rights of control over them.

Although Web 2.0 such as wiki, blogs, social networking sites, YouTube, and social bookmarking have created new opportunities to support educational use, there are some limitations that need to be considered [6]. In addition, Web 1.0 technologies, such as LMS provides a set of educational tools that can be used to support different aspects of teaching and learning [7] [8]. Higher educational institutions are encouraged to integrate these technologies to embrace the efficiencies of both [7] [8]. Although Web 2.0 technologies support new interactive and collaborative features for learning, students and higher educational institutions remain largely unaware of these advantages [9].

As higher educational institutions intend to use Web 2.0 technologies to support academic use, there is a need for more exploratory studies in different countries and in different academic institutions [10], [11]. Such comparative studies will contribute to a better understanding of possible factors of Web technology use among university students and for the overall improvement of the educational technology adoption in education [11].

In the context of the current study, we started a primary survey to describe the use of Web technology among university students in Yemen in order to gain a better understanding of what is going on prior to more analytical studies. The methodology used in this research is discussed in the next section.

2. RESEARCH METHODOLOGY

In order to collect the required research data, an online survey was sent to university students four faculties, from which a total of 135 responded to the survey. The questionnaire consisted of six questions to describe the technologies used among students and their purposes. Questions 1-3 collected information about respondents' education level, gender, and field of study. Question 4 collected information about the Web technology tools used by students. The options were categorised into main Web technologies namely: LMS, Social networking, YouTube, Wiki, and Blogs. Question 5 gathered information about the main uses of LMS, in which the uses were categorised into: learn new things, access and download course materials, communicate with teachers, communicate with students, discuss with my friends on classwork, share information and knowledge, and online quizzes and tests. Question six gathered information about the purposes of Web 2.0 uses. For the analytical purposes, descriptive analysis was conducted using SPSS software v. 21. Frequencies analysis were performed to describe the demographic characteristics and to the main types of Web tools used by students and their purposes.

3. RESULTS

3.1 Demographic variables

Seventy one percent of those who took the survey were undergraduate students and 29% were postgraduate. The sample consisted of 66 males and 34 females. In relation to the faculties, the sample consisted of 50% of respondents from the faculty of computing, 28% from faculty of business, 14% from engineering, and 8% were medical students.

Table 1: Demographic variables

Variable	Category	Percentage
Education	Undergraduate	71%
	Postgraduate	29%
Sex	Male	66%
	Female	34%
Faculties	Computing	50%
	Business	28%
	Engineering	14%
	Medical	8%

3.2 Types of technology use

In relation to the types of technology used among students in a learning environment, the results were classified according to five popular technologies, LMS, Social networking, YouTube, Wiki, and Blogs. As seen in Table 2, the majority of the students used social networking (91%), followed by YouTube (87%), Wiki (25%), LMS (22%), and Blogs (17%).

Table 2: Types of technology use

Variable	Frequency	Percentage
LMS	30	22%
Social networking	123	91%
YouTube	117	87%
Wiki	34	25%
Blog	23	17%

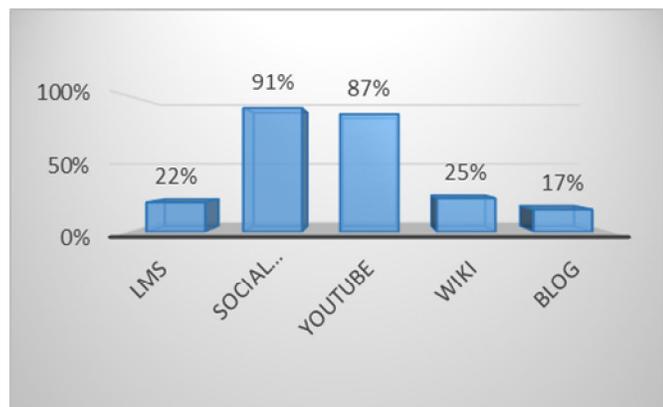


Figure 1: Types of technology use

3.3 Purpose of technology use

In order to compare between the usages of Web technologies including Web 1.0 and Web 2.0, respondents were asked to identify the purpose of using the sampled educational technologies.

Table 3: Purpose of LMS use

Purpose	Frequency	Percentage
Access and download course materials	107	79%
Communicate with teachers	26	19%
Communicate with students	39	29%
Discuss with my friends on classwork	23	17%
Share information and knowledge	18	13%
Online quizzes and tests	41	30%

The purpose of LMS use ranges from 13% sharing information and knowledge to 79% access and download course materials. The main purpose of LMS among students was reported for accessing and downloading course materials (79%) followed by using it for online quizzes and tests (30%). The communication with students constituted 29%, while the communication with teachers constitutes through LMS only 19%. Seventy percent of students use LMS for classwork discussions, and only 30% of respondents reported they use LMS for sharing information and knowledge.

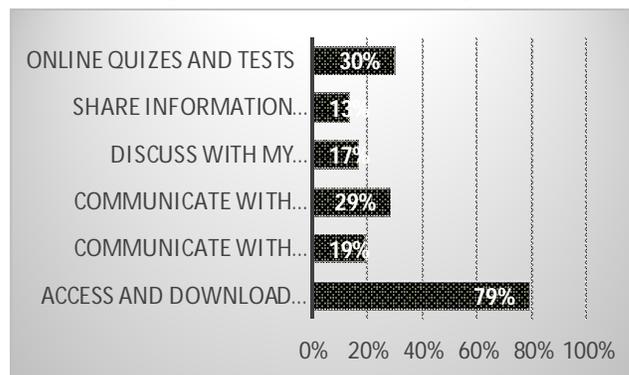


Figure 2: Purpose of LMS use

In relation to the purpose of using Web 2.0 technologies, the results from Table 4 show that students shared information and communicated with other students with 67% and 60% respectively. Unlike LMS, accessing course materials 14% and performing online quizzes online 2% were less reported in relation to the purpose of Web 2.0 technologies. In addition, discussing with students is higher in Web 2.0 technologies with 38%. There is little difference in communicating with teachers with 19% in LMS and 17% in Web 2.0 technologies.

Table 4: Purpose of Web 2.0 tools use

Purpose	Frequency	Percentage
Access and download course materials	19	14%
Communicate with teachers	23	17%
Communicate with students	81	60%
Discuss with my friends on classwork	51	38%
Share information and knowledge	91	67%
Online quizzes and tests	3	2%

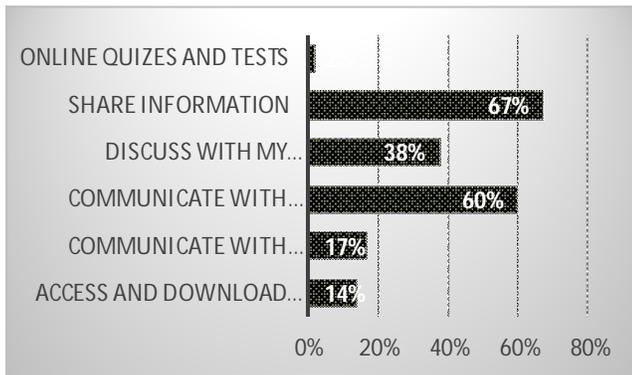


Figure 3: Purpose use of Web 2.0 technologies

Comparison between the purposes of use in LMS and Web 2.0 technology as illustrated in Figure 4.

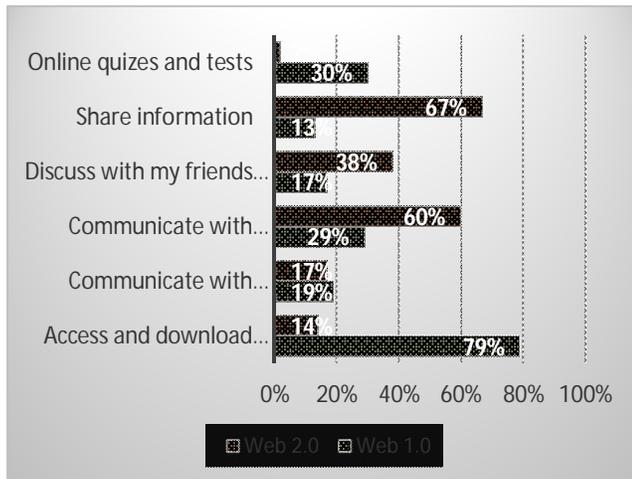


Figure 4: Purpose use of Web 1.0 and Web 2.0 technologies

while LMS and Blogs are among the least used technologies among students. In relation to the purpose of use, the results revealed that the main use of LMS is to access and download course content. In relation to communication and sharing, the results showed that the use of LMS for these purposes is limited. The results of Web 2.0 technologies revealed that the main use of these technologies is for communication and sharing purposes. However, the use for formal course discussion or to get course content was limited. The results provide some insights on the use of these technologies in learning environments, which are important to support effective education. Future studies could focus on integrating these technologies and their related features for proactive learning environments.

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4. DISCUSSIONS AND CONCLUSION

This study investigated the types of technology used and their purposes. The results show that social networking and YouTube are the most popular Web tools used by students,