

Factors Influencing Intention to Use and Application of Web-Based Learning among Students of Shiraz Payame Noor University (Providing a Path Analysis Model)

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ABSTRACT

Introduction: in educational settings, the intention of web-based learning and its acceptance among students are crucial. The present study tries to identify factors influencing intention of using web-based learning among students.

Methods: this is a descriptive-correlative study conducted on 120 students (male and female) selected randomly. In order to study factors influencing the intention to use web-based learning, 5 questionnaires for intentions to use technology, perception of the ease and advantages of web-based learning, pleasure seeking and applicability of web-based learning systems were used. Data analysis was conducted by descriptive statistics, correlation coefficient tests, path analysis, and goodness of fit indices using SPSS 18, and LISREL 8.5 software.

Findings: various factors influence intentions to use web-based learning, some of which are investigated here.

KEY WORDS: intention to use technology; pleasure seeking, applicability, perception of ease, perceived usefulness, Payame Noor University students, path analysis model

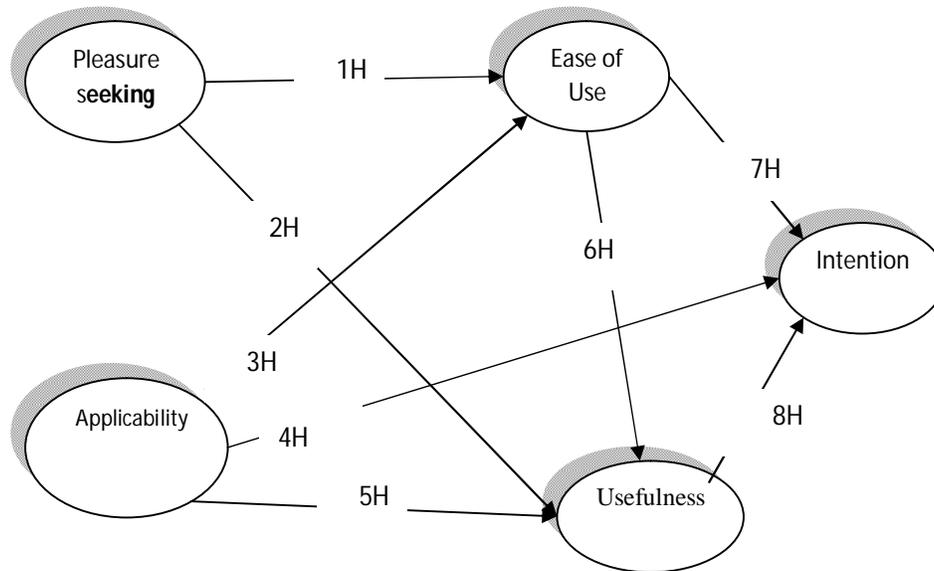
INTRODUCTION

Over the past three decades, education has undergone dramatic changes. These changes have been due to global changes as well as fast and dramatic developments in the worldwide web which enables its users to access large amounts of data in a very short time [1, 2, and 3]. Education has also been influenced by this process, which has given rise to educational information systems which have a wide range of advantages including: 1)fast and easy access to educational sources, 2)providing specialized programs to prepare individuals for teaching, 3) providing conditions to develop knowledge and information in students, and 4)creating conditions for research in education. Utilizing these systems regardless of the role of web-based learning in educational settings is impossible. Creating conditions for using web-based learning by students relies on their acceptance and using of web-based learning. Historically, compared to other industries, education have progressed more slowly in adapting to web-based learning; however, it could be said that nowadays it is experiencing various changes in using web-based learning [4]. Growing attention to web-based learning in education contributes to improving quality and effectiveness of this kind of education by combining web-based learning and teaching-learning processes and using them will lead to a balance among students and a strong connection with great information sources. Most teachers consider web-based learning as a tool for improving learning and encouragement in students and adapting them with various learning styles and requirements in the vast world of information, which makes web-based learning necessary to facilitate learning and improve encouragement among students. Although teachers admit the role of web-based learning in teaching-learning processes and universities have spent large amounts of money on web-based learning infrastructures, it has been reluctantly adopted by students. They resist accepting and using it, therefore, not using web-based learning leads to improper use of facilities in educational settings. On the other hand, investigating research conducted on accepting web-based learning in other countries showed that some studies investigated the relationships between acceptance features and adapting with web-based learning in order to better understand doctors' adapting with web-based learning[5, 6, and 7]. These studies mostly investigate acceptance and use of web-based learning by doctors. Although extensive research has been devoted to web-based learning in educational settings, currently there is no research conducted on factors influencing acceptance and use of web-based learning by students and only few studies have investigated students and their acceptance of web-based learning [8]. On the other hand, investigating research conducted in this regard shows that various variables influence accepting web-based learning by users and students which include perception of ease and advantages of using web-based learning. Studies 9, 10, 11, 12, 12, and 14 investigated this issue and emphasized a direct and significant influence of perception of ease and perceived usefulness on the intention of using it, and most studies showed that perception of the ease of used has a direct influence on perception of usefulness. Moreover, studies showed that pleasure seeking greatly influences individual behaviors. Pleasure seeking refers to those cases in which using computer systems leads to pleasure in users. Davis et al (1992), Venkatesh (2000) and Yujong (2003) revealed a direct influence of pleasure seeking on perception of ease and usefulness in intention to use web-based learning and

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proposed that pleasure seeking predicts perception of ease and perceived usefulness. Vankatesh showed that pleasure seeking has a greater influence on perception of ease of use of web-based learning than that of computer experiences on the intention to use web-based learning. Also, in studying factors influencing acceptance of web-based learning, it was observed that applicability of the web-based learning system from the users' point of view influences the intention to use web-based learning [11, 18]. Also, this variable has a direct and significant influence on perception of ease and usefulness of using web-based learning [11, 18]. Given these findings, in order to identify factors influencing acceptance and use of web-based learning, the Davis model of web-based learning acceptance [19] was utilized which was validated in many studies and nearly all studies conducted on the acceptance of web-based learning used the Davis model of acceptance which was developed based on the Ajzen and Fishbein [20] rational behavior theory.

The Davis web-based learning acceptance model contributes to a better perception of behaviors accepting web-based learning. This model has been studied across different organizational settings and statistical populations. In this study, a model for factors influencing acceptance of web-based learning among Payame Noor University students is has been developed by considering the Davis model and combining it with the Rogers model for diffusion of innovations [21].



Therefore, identifying factors affecting intention to use web-based learning can help learners to gain knowledge and achieve educational goals in an effective way. So, the overall goal of this study is to investigate factors affecting intention to use web-based learning among students.

METHODOLOGY

The purpose of the study is to investigate factors affecting acceptance and using web-based learning among students, and thus it contributes to a better implementation of this system. It is an applied study which seeks to identify factors and variables associated with web-based learning acceptance and characterize their relationships, therefore it is a descriptive type of study; and since it seeks to characterize and measure the correlation among variables, it is of correlative type. The population consists of all Payame Noor University students of management. The sample size is 120 based on the Cochran formula. Data were gathered using three questionnaires: the Davis questionnaire [19] which includes variables of intention to use technology, perception of the ease of web-based learning, and perception of perceived usefulness; the Davis et al questionnaire [15] to measure the subjects' pleasure seeking; and the Wolters and Daugherty questionnaire [22] to measure applicability of the system. The measures were scaled based on the Likert scale with 5 responses ranging from absolutely agree to absolutely disagree. The questionnaires were validated using construct validity and confirmatory factor analysis.

In order to test the reliability of the questionnaires, the Cronbach's alpha test was used (table 1). In order to test hypotheses and identify direct and indirect influences of variables, path analysis was conducted. Data were analyzed using SPSS 18 and LISREL 8.5. The statistical tests included path analysis, correlation matrices, and general model fit using goodness of fit indices.

Table 1: calculated alpha

Cronbach's alpha	Associated items
0.82	Intention to use web-based learning
0.78	Perceived ease of use
0.74	perceived usefulness
0.84	Applicability of the system
0.79	Pleasure seeking

FINDINGS

In order to detect linearity of independent variables, correlation matrices were used. Results are shown in table 2.

Table 2: correlation matrix of variables

applicability	Pleasure seeking	ease	usefulness	intention	variables
				1	intention
			1	0.277 **	usefulness
		1	0.434	** 0.293 **	ease
	1	**0.365	0.360	** 0.104	Pleasure seeking
1	0.354 **	0.357 **	0.405 **	0.252 **	applicability

P**<0/01 p*<0/05

Based on the data presented in the correlation table 2, pleasure seeking and intention are not correlated, but all other variables are correlated at 0.01.

Since in this study, the purpose is to investigate predictive and intermediate roles of variables, i.e. estimating direct indirect, and overall influences, t values, and the explained variance among variables, the path analysis method was used. Table 3 shows direct, indirect, and overall influences and the t value of the variables.

Table 3: direct, indirect and overall influences, and the t value of the variables

T value	Overall influences	Indirect influences	Direct influences	influences
-----	-----	-----	-----	Intention to use web-based learning
3.05	0.22	0.04	0.18	Perceived Ease of use
2.13	0.21	0.08	0.13	Applicability
2.37	0.15	-----	0.15	Perceived usefulness
-----	-----	-----	-----	Perceived usefulness
3.19	0.24	0.07	0.17	Pleasure seeking
4.56	0.31	0.07	0.24	Applicability of system
5.32	0.28	-----	0.28	Perceived Ease of use
-----	-----	-----	-----	Perceived ease of use
5	0.27	-----	0.27	Pleasure seeking
4.78	0.26	-----	0.26	Applicability

Applicability of the web-based learning system (B = 0.13, T= 2.13, P<0.05) has a direct influence on intention to use web based learning, and through perceived ease of use and perceived usefulness, it has an indirect influence on the intention of using web-based learning (0.08). Perceived ease of use (B=0.18, T=3.05, and P<0.01) has a direct and significant influence on intention to use web based learning and through perceived usefulness, it has an indirect influence on the intention to use web-based learning (0.04). Perceived usefulness of technology (B=0.15, T=2.37, and P<0.01) has a direct and significant influence on the intention to use web-based learning. The explained variance of the intention to use web-based learning through perceived ease of technology, perceived usefulness and applicability of web-based learning is 0.13.

Pleasure seeking (B=0.17, T=3.19, and P<0.01) has a direct and significant influence on perceived usefulness and through perceived ease of use, it has an indirect influence on the perceived usefulness (0.07). The applicability of the technological system (B=0.24, T=4.56, and P<0.01) has a direct and significant influence on perceived usefulness, and through the perceived ease of use, it has an indirect influence on perceived usefulness (0.07). Perceived ease of technology (B=0.28, T=5.32, P<0.01) has a direct and significant influence on perceived usefulness, the explained variance of the perceived usefulness through pleasure seeking, perceived ease of use and applicability of the web-based learning system is 0.28.

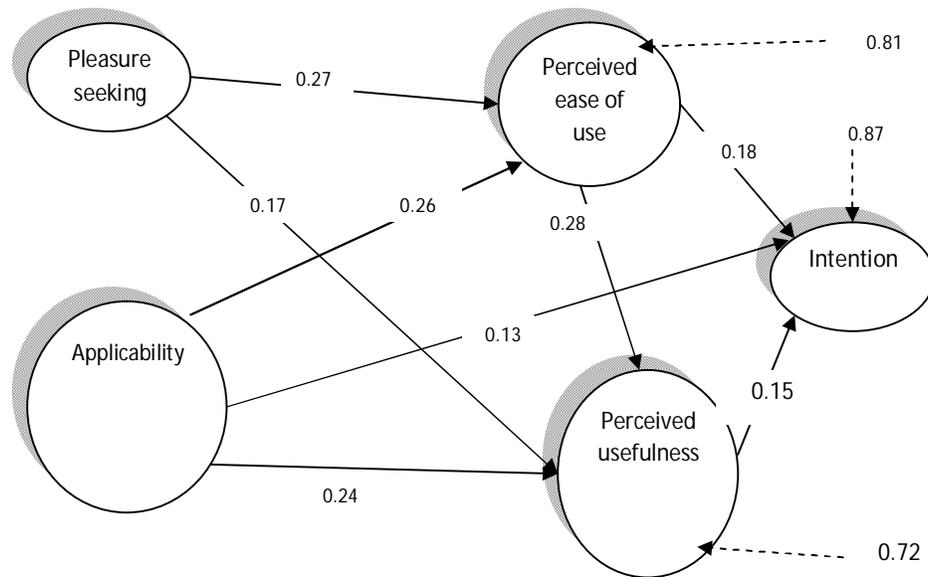
Pleasure seeking (B=0.27, T=5.00, P<0.01) has a significant and direct influence on perceived ease of use and the applicability of the technological system (B=0.26, T=4.78, P<0.01) has a direct and significant influence on the perceived ease of use. The explained variance for the perceived ease of use through pleasure seeking and applicability is 0.19. In the present study, in order to test the fit of the model, these indexes were used:

Table 4: statistics for the model fit

value	Fit indexes
1	GFI
97	AGFI
1	CFI
0.046	RMSEA
1.67	X2
1	df
0.196	P value

The values represented in table 4 suggest that the model has a good fit.

Graph 1: the fit model for the whole sample with standard coefficients



DISCUSSION

The results of the study show that perception of ease of using web-based learning in students has a significant and direct influence on the intention to use web-based learning. It is explained by the fact that students who understand the influence of web-based learning on facilitating learning and gaining knowledge intend to use it more. In fact, the advantage of its ease and perception in accepting web-based learning has an unquestionable influence on accepting web-based learning, which means, web-based learning has been able to help students gain knowledge and skills and motivate them for learning through web. The results are in line with those of Reynolds [8], Lee [11], Achampong et al [12] and Eveleth and Stone [13]. Therefore, it could be concluded that a perception of the ease of web-based learning has a direct influence on the intention of using web-based learning and a perception of the ease of web-based learning by students facilitates their acceptance and use of web-based learning. Also, perceived usefulness has a direct and significant predictive influence on the intention to use web-based learning. This implies that perceived usefulness is an important variable influencing the intention of students to use web-based learning. It could be concluded that students have a positive attitude toward using web-based learning given the features and advantages of web-based learning and prefer to use web-based learning because they are aware of the advantages of web-based learning over traditional ways of learning. It is in line with those of Smith [9], Sen [10], Reynolds [8], Kumah and Achampong [12], Eveleth and Stone [13]. Therefore, it could be concluded that the more the students believe in the perceived usefulness in their education, the more willing they are to use it in learning. Furthermore, a direct and significant perception of web-based learning predicts a perception of usefulness of information and relations and has a direct and significant influence on it. This means that the more understanding the students have of the ease of web-based learning, the better understanding of its advantages they have. These findings are in line with those of Vankatesh and Davis [14], Lee [11], and Vankatesh [16]. Therefore, it could be concluded that the perception of the ease of using web-based learning formed in the minds of students of the sample is influenced by their perception of the perceived usefulness. Also, the applicability of the system predicts the intention to use, perception of ease, and perception of perceived usefulness and has a direct and significant influence on it. It means that the applicability of the system, as one of the main variables of this study, can influence the intention to use web-based learning by students. Moreover, this variable predicts perceptions of ease and perceived usefulness. This means that the more the students consider web-based learning in systematic applied education, the better they understand the ease and perceived usefulness. This finding is in line with those of Lee [11] and Karahana and Straub [18]. Therefore, it could be concluded that the applicability of web-based learning has a significant influence on intention, perception of ease and perception of usefulness.

Also, the findings revealed that seeking pleasure in web-based learning predicts perceived usefulness and perceived ease and has a significant and direct influence on them. This could be explained by the fact that the more pleasure the students take in using web-based learning, the better perception of usefulness and ease of web-based learning they have. So, it could be concluded that seeking pleasure in using web-based learning indirectly influences the intention to use web-based learning. These findings are in line with those of Davis et al [15], and Yujong [23]. Therefore, it could be argued that seeking pleasure in using web-based learning and a perception of it by students creates interest in web-based learning among students and influences the other students' perceptions of web-based learning and students use web-based learning if they have a strong motivation to use it and are not discouraged by using it. Therefore, in order to increase the use of web-based

learning by students, it should be planned in such a way that students are properly motivated to use it. Since this study was limited to college students, cautions should be taken in generalizing the results to other majors and courses. And because various factors influence the acceptance of web-based learning, we should be careful in explaining results. Also, due to the population of the study, generalizing results to other Payame Noor universities should be done with specific caution.

Conclusion

It is vital to investigate factors influencing acceptance of web-based learning among Payame Noor University students and updating their information and knowledge. Since it is related to improving the level of well-being and health in the society, it is recommended that managers and planners of the educational system focus more attention on web-based learning and factor influencing its acceptance and use, and welcome studies such as the present study.

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