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Comparing The Post-Adoption Perceptions Of Educators And Students With An E-Learning Platform

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COMPARING THE POST-ADOPTION PERCEPTIONS OF EDUCATORS AND STUDENTS WITH AN E-LEARNING PLATFORM

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Abstract

This paper compares the post-adoption perceptions of educators and students with an e-learning platform. The comparison is based on 175 educators and 249 students in a Finnish university who use a learning management system, Moodle.

The analysis of the survey data follows a two-phase strategy. In the first phase, perceptions of educators and students regarding confirmation of initial expectations, perceived ease of use, perceived usefulness, perceived access, perceived reliability, perceived compatibility, and satisfaction were compared using one way analysis of variance (ANOVA). In the second phase, partial least squares (PLS) technique is employed to compare the path values and explained variances in satisfaction by putting all other variables as predictors.

The ANOVA results suggest that students have more positive perceptions regarding perceived ease of use, access, reliability, and compatibility of the e-learning platform than the educators. The PLS analysis results revealed that the amount of variance of students' satisfaction explained by its predictors was 9 percentage points lower than that of educators. The study concludes with both theoretical and managerial implications.

Keywords: E-learning, learning management systems, perceived ease of use, perceived usefulness, satisfaction.

1 INTRODUCTION

One of the most significant developments in the use of Information and Communication Technology (ICT) in the universities in the last decade has been adoption and use of e-learning. The term, e-learning has been widely used in education since the mid-1990s. However, the definition of e-learning has not been clearly agreed on (Lee et al., 2009). Many scientists define e-learning as the acquisition, use and delivery of learning resources by use of any sort of electronic means, such as audio/video tapes, DVD/CD-ROMs, interactive TV, satellite broadcast, intranets, and the Internet (Engelbrecht, 2005). Other scientists define e-learning as web-based learning utilizing web-based communication to collaborate, transfer knowledge and train individuals (Kelly & Bauer, 2004). These definitions suggest that e-learning can be used as a flexible term to describe teaching and learning activities using ICT.

One type of e-learning system that has become very popular during the past decade is a learning management system (LMS). In the recent years, utilizing LMSs in the higher education to support face-to-face teaching has become a very common practice. Such systems are used to structure and manage courses online and facilitate e-learning. Both educators and students are important stakeholders for such systems. Educators can track the progress of students using such software, while students may submit their assignments, download course materials, and track their grades by logging on to the system. They can interact with others, control their own learning, develop deep thinking skills, and develop a sense of community with other learners. Above all, these systems give the students and educators flexibility in terms of place, time, and studying at their own pace (Hung et al., 2011; Islam, 2011). Other benefits include cost-effectiveness, consistency, timely content, and customer value (Cantoni et al., 2004; Ellis et al., 2009; Kelly & Bauer, 2004).

The success of LMSs depends on effective utilization of these systems by both educators and students. Thus, a significant amount of research has been conducted to understand factors that lead effective utilization of such systems by educators and students (Roca et al., 2006; Islam, 2011). However, most of the prior studies have concentrated either on educators' or students' perceptions in order to understand the important factors behind effective utilization (Islam, 2011). Hence, prior studies fall short in proposing customized intervention plan depending on the stakeholders. For example, contrasting the findings of several prior studies we observe that improving ease of use may improve educators' satisfaction but may not necessarily improve students' satisfaction (e.g., Larsen et al., 2009; Liao et al., 2007). This finding imply that same intervention plan may not necessarily improve both educators' and students' satisfaction. Thus, studies that consider both educators' and students' perceptions into account and compare them are important from practical perspective. Especially, results from such studies can be utilized to customize intervention plans depending on the target group. Consequently, we address the following research question in this paper:

RQ: How do the perceptions of some key constructs and their inter-relationships differ between students and educators, with respect to an e-learning platform?

In order to answer the research question, we collect attitudinal survey data from both educators and students in a Finnish university who use a popular LMS, Moodle and compare those using the Analysis of Variance (ANOVA) and Partial Least Squares (PLS) techniques.

The paper proceeds as follows. In section 2 we present the literature reviews and constructs of interest. In section 3 we describe our study design. Section 4 is dedicated to data analysis results and discussions. In section 5 we describe implications of our findings for theory and practice. Finally, section 6 concludes the paper.

2 LITERATURE REVIEW AND CONSTRUCTS OF INTEREST

In the recent years, e-learning post-adoption research has received much attention in IS research. A significant amount of research has been conducted on understanding e-learning systems post-adoption. A review of the relevant literature published on e-learning post-adoption has been conducted in this paper. Several empirical studies on e-learning post-adoption were found in prior literature. Table 1 summarizes these studies.

Article	Theories used	Target population	Key findings
Chiu et al. (2005)	ECT	Students on online courses	Usability, usability confirmation, quality, and value affect satisfaction. Satisfaction affects continuance intention
Chiu & Wang (2008)	UTAUT	Students on online courses	Computer self-efficacy, attainment value, utility value, perceived playfulness, performance expectancy, and effort expectancy affect continuance intention
Cho et al. (2009)	TAM	Students on online courses	Perceived usefulness, satisfaction, and prior experience affect continuance intention. Perceived interface design issues affect continuance intention through perceived usefulness
Freeze et al. (2010)	IS success model	Students on hybrid courses	Information quality and system quality affect both satisfaction and e-learning system use behavior
Hayashi et al. (2004)	IS continuance model	Students on an online course	Computer self-efficacy does not affect satisfaction and continuance intention. Social presence does not necessarily improve end user experience
Ho (2010)	IS continuance model, TAM, Self-determination theory	Mixed users of an e-learning platform. The users were recruited from an online forum	Confirmation, and perceived usefulness affect satisfaction. Satisfaction, attitude, and perceived usefulness affect continuance intention
Islam (2011)	IS continuance model	University educators	Confirmation, perceived system quality, perceived compatibility, perceived usefulness, and perceived support affect post-adoption satisfaction.
Karaali et al. (2011)	TAM	Workers in the automotive industry	Social influence, Perceived usefulness, and attitude affect continuance intention
Larsen et al. (2009)	IS continuance model, Task technology fit	University faculty educators	Confirmation affects satisfaction. Satisfaction and utilization affect continuance intention
Lee & Lee (2008)	self-developed model	Students on online courses	Satisfaction leads to better academic performance. Satisfaction is predicted by perceived usefulness, service quality, and information representation quality
Lee (2010)	IS continuance model, TAM, TPB, Fairness theory	Students on online courses	Confirmation and perceived usefulness affect satisfaction. In turn, satisfaction, perceived usefulness, attitude, concentration, subjective norm, and perceived behavioral control affect continuance intention
Liao et al. (2007)	IS continuance model, TPB	Students on online courses	Confirmation and perceived ease of use affect satisfaction. Satisfaction, subjective norm, and perceived behavioral control affect continuance intention
Liao et al. (2009)	IS continuance model, TAM	Students on online courses	Confirmation and perceived usefulness (only for short-term users) affect satisfaction. In turn, satisfaction, perceived usefulness (only for initial adopters), and attitude affect continuance intention

Liao & Lu (2008)	Innovation diffusion theory	Students on online course	Compatibility and result demonstrability affect continuance intention
Limayem & Cheung (2009)	IS continuance model	Students on hybrid/mixed courses	Confirmation and perceived usefulness affect satisfaction. Perceived usefulness, and satisfaction affect continuance intention
Lin (2011)	TAM	Students of online courses	Satisfaction (only for less experienced users), and attitude affect continuance intention. Satisfaction is negatively affected by negative critical incidents
Lin & Wang (2012)	IS success model, Task technology fit	Students on hybrid courses	Satisfaction is predicted by confirmation and perceived usefulness. Continued use intention is predicted by perceived usefulness and satisfaction
Liu et al. (2010)	TAM	High school students on online courses	Perceived usefulness, perceived ease of use, and perceived interaction affect continuance intention
McGill & Klobas (2009)	Task technology fit	Students on hybrid courses	Attitude, instructor norms, and expected consequences affect e-learning use. Task-technology fit and e-learning system use affect perceived impact on learning. Finally, perceived impact on learning together with task-technology fit determine student grades
Pituch & Lee (2006)	TAM	Students on hybrid courses	System functionality, perceived ease of use, and perceived usefulness affect use of supplementary learning. System functionality, system interactivity, perceived usefulness, perceived ease of use, and use of supplementary learning affect use of distance education
Roca et al. (2006)	IS continuance model, TAM, TPB	Students on online courses	Information quality, system quality, service quality, confirmation, perceived usefulness, cognitive absorption, and perceived ease of use affect satisfaction. Satisfaction affects continuance intention.
Roca & Gagne (2008)	TAM, Self-determination theory	Students on online courses	Perceived usefulness, perceived playfulness, and perceived ease of use affect continuance intention
Sorebo et al. (2009)	IS continuance model, Self-determination theory	University faculty educators	Confirmation, perceived usefulness and perceived playfulness affect satisfaction. Perceived usefulness and perceived playfulness affect continuance intention

Table 1. E-learning post-adoption research

Three important points are found in this literature review. First, e-learning systems post-adoption research studies have mostly utilized IS adoption and usage theories: Technology Acceptance Model (TAM) (Davis, 1989), IS continuance model (Bhattacherjee, 2001), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), etc. to explain e-learning system users' post-adoption satisfaction and continuance intention. Two schools of thought have been employed in e-learning post-adoption research.

The first school implicitly views e-learning system post-adoption behavior as an extension of the e-learning system users' initial acceptance behavior, and uses the same set of variables to explain both acceptance and continued use (Cho et al., 2009; Lin, 2011). These studies have utilized TAM, Theory of Planned Behavior (TPB) (Ajzen, 1991), Self-Determination Theory (Deci & Ryan, 1995), UTAUT, etc. to explain the continuance intention of e-learning system users. The second school has utilized the IS continuance model and dominates e-learning system post-adoption research. To enrich this school, researchers have integrated other theoretical frameworks, such as TAM (Davis, 1989), the TPB (Ajzen,

1991), the IS success model (DeLone & McLean, 2003), Self-Determination Theory (Deci & Ryan, 1995), and Task-Technology Fit (Goodhue & Thompson, 1995) with the IS continuance model.

Second, the majority of the studies examined students participating in online courses that had little or almost no face-to-face interaction. A few studies researched faculty educators who use an e-learning system to support their face-to-face teaching.

Finally, we observed that there is a lack of research study that emphasized on comparing the perceptions of educators and students. This paper fills this research gap. In practice, we adopted the model proposed by Islam (2011) to compare e-learning system user post-adoption perceptions. There are three reasons for selecting Islam's (2011) model as the main theoretical lens in this paper. First, Islam's (2011) model has a sound theoretical base as it was developed from major adoption theories such as TAM, IS continuance model, and UTAUT. Second, Islam (2011) tested a wide variety of post-adoption variables as predictors of post-adoption satisfaction, and finally proposed the model. This ensured that the proposed model consisted of all important constructs. Finally, contrasting the findings of other prior studies with that of Islam's (2011) findings, we observe that most major constructs are present in Islam's (2011) model. Thus, we argue that it is justified to use Islam's (2011) model as the theoretical lens in this study.

According to the model, a number of post-adoption variables: confirmation, perceived ease of use, perceived usefulness, perceived access, perceived reliability, and perceived compatibility influence post-adoption satisfaction. The path model is shown in Figure 1.

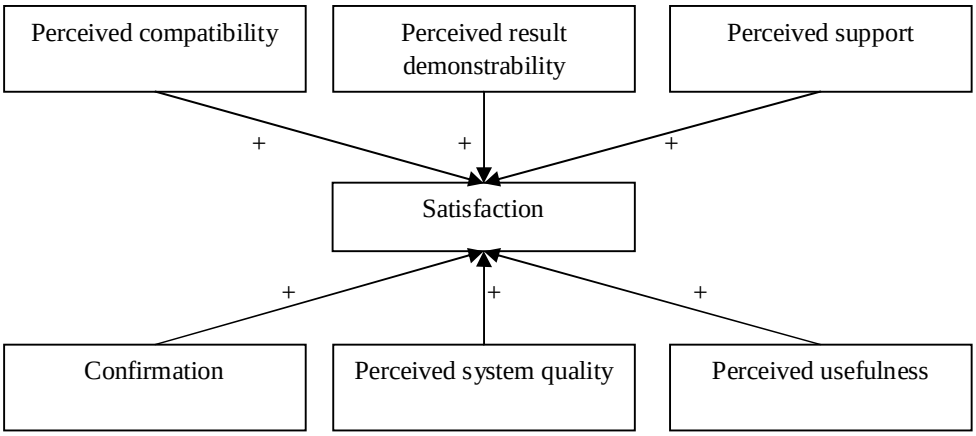

Figure 1. Islam's (2011) path model

The operational definitions of the constructs are presented in Table 2.

Construct	Definition
Perceived access	The degree of accessibility, responsiveness, and availability of the e-learning systems (Lee et al., 2009)
Perceived ease of use	The degree to which an individual perceives using the e-learning system is free of effort" (Davis, 1989)
Perceived reliability	The dependability of the e-learning system operation (Wixom & Todd, 2005)
Confirmation	Users' perception of the congruence between expectation of use of the IS and its actual performance (Bhattacherjee, 2001)
Perceived usefulness	The prospective user's subjective probability that using a specific application system will increase his or her job performance (Davis, 1989)
Perceived compatibility	The degree to which an IS is perceived as being consistent with the existing values, needs and experiences of its users (Moore & Benbasat, 1991)
Satisfaction	Users' affect with (feelings about) prior use of the IS (Bhattacherjee, 2001)

Table 2. Measured constructs and their definitions

3 STUDY DESIGN AND METHOD

3.1 Questionnaire development

Each item corresponding to the constructs was measured using seven-point Likert scale, with answer choices ranging from "Strongly disagree (1)" to "Strongly agree (7)". Most of these items were adapted from the literature with minor changes in wording reflecting the target context. The measures of confirmation, perceived usefulness, and satisfaction were adapted from Limayem et al., (2007) and Bhattacherjee (2001). The measures of reliability were adapted from Wixom and Todd (2005) while the measures of access and perceived ease of use were adapted from Lee et al. (2009) and Hong et al. (2006) respectively. After the questionnaire was drafted, it was first sent to two academic researchers for their review, and then it was revised according to their comments and suggestions to make the wording of the items more precise. Then, the questionnaire was sent to 30 educators and 10 students in the university for their review. Overall, the educators and students indicated that the questionnaire was relatively clear and easy to complete. A number of suggestions were made concerning the wording of several items and the overall structure of the questionnaire. The questionnaire was revised according to the given suggestions. To avoid common method bias problem to some extent, we decided to randomize the questions in the questionnaire during data collection (Straub et al., 2004).

3.2 Data collection

Data was collected via two web-based surveys: one survey to collect data from the educators who use Moodle for their teaching purpose, and another survey to collect data from the students who use Moodle in their study. A list of educators' and students' email addresses was collected from the Moodle support team in the university. First, to collect data from the educators, a total of 1012 email invitations were sent to the educators of the university who had been the registered Moodle users. Two reminders were sent to increase the response rate in two weeks gaps. The survey ran for approximately one and half months. After filtering invalid and incomplete responses, we had total 175 survey responses.

Second, to collect data from students, a total of 1000 email invitations were sent to randomly selected students of the university who had been registered in Moodle as student users. One reminder was sent to increase the response rate in one week gap. The survey ran for approximately two weeks. After filtering invalid and incomplete responses, we had total 249 survey responses that could be used in this study. The demographic information of the respondents is given in Table 3.

		Educators		Students	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	74	42.3	101	40.6
	Female	101	57.7	148	59.4
Age	less than 21 years	0	0	31	12.5
	21–30 years	40	22.9	166	66.7
	31–40 years	50	28.6	25	10.0
	>40 years	85	48.5	27	10.8
Experience with Moodle	0–18 months	54	30.9	88	35.4
	>18–36 months	83	47.4	83	33.3
	>36 months	38	21.7	78	31.3

Table 3. Demographic information of the respondents

4 RESULTS AND DISCUSSIONS

We employed IBM SPSS 19 for ANOVA analysis while PLS approach was used utilizing the tool smartPLS (Ringle et al., 2005) for structural model analysis.

Table 4 shows construct items and for each construct the assessment of convergent validity or internal consistency is also included. Convergent validity indicates the extent to which the items of a scale that are theoretically related are also related in reality. As we can see from Table 4, all items have path loadings exceeding threshold value 0.7 recommended by Fornell & Larcker (1981). All the constructs have composite reliability values greater than 0.7 that fulfills the recommended value by Nunnally (1978). In addition, the average variance extracted (AVE) values are greater than 0.5 as recommended by Fornell & Larcker (1981).

Construct	Item	Educators' data			Students' data		
		CR	AVE	Loading	CR	AVE	Loading
Perceived ease of use	PEOU-1: My interaction with Moodle is clear and understandable	0.93	0.76	0.88	0.93	0.77	0.86
	PEOU-2: Interacting with Moodle does not require a lot of mental effort			0.76			0.87
	PEOU-3: I find Moodle to be easy to use			0.94			0.89
	PEOU-4: I find it easy to get Moodle to do what I want to do			0.91			0.88
Satisfaction	SAT-1: My overall experience of using Moodle is very satisfied	0.94	0.81	0.89	0.96	0.85	0.95
	SAT-2: My overall experience of using Moodle is very pleased			0.94			0.94
	SAT-3: My overall experience of using Moodle is very contented			0.86			0.91
	SAT-4: My overall experience of using Moodle is absolutely delighted			0.91			0.90
Perceived usefulness	PU-1: Using Moodle is of benefit to me	0.90	0.75	0.88	0.91	0.76	0.87
	PU-2: The advantages of Moodle outweigh the disadvantages			0.90			0.91
	PU-3: Overall, using Moodle is advantageous			0.82			0.84
Confirmation	CON-1: My experience with using Moodle was better than what I expected	0.91	0.76	0.90	0.93	0.81	0.94
	CON-2: The benefit provided by Moodle was better than what I expected			0.90			0.93
	CON-3: Overall, most of my expectations from using Moodle were confirmed			0.82			0.82
Compatibility	COMP-1: Using Moodle fits with the way I like to teach/study	0.91	0.77	0.92	0.95	0.86	0.95
	COMP-2: Using Moodle fits with my teaching/study style			0.89			0.93
	COMP-3: Moodle is compatible with most aspects of my teaching/study			0.83			0.90
Access	ACCESS-1: Moodle quickly loads all the text and graphics	0.87	0.78	0.85	0.91	0.83	0.88
	ACCESS-2: Moodle provides good access			0.91			0.94
Reliability	REL-1: Moodle is stable	0.95	0.91	0.95	0.92	0.85	0.91
	REL-2: Moodle operates reliably			0.96			0.94

*Note: CR = Composite Reliability; * = p<0.001*

Table 4. Item means, standard deviation, and internal consistencies

Testing for discriminant validity involves checking whether the items measure the construct in question or other (related) constructs. Discriminant validity was verified using correlation analysis as recommended

by Gefen & Straub (2005). The inspection of discriminant validity among variables is based on the correlation between variables and the square root of their respective average variance extracted (Fornell & Larcker, 1981). As Table 5 shows, the square root of average variance extracted value for the variables is consistently greater than the off-diagonal correlations, suggesting satisfactory discriminant validity among variables, suggesting that discriminant validity on the item level is met for all the constructs for both educators and students.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Access	**0.88**^{E} **0.91**^{S}						
Compatibility (2)	0.56^{E} 0.57^{S}	**0.88**^{E} **0.93**^{S}					
Confirmation (3)	0.62^{E} 0.44^{S}	0.63^{E} 0.68^{S}	**0.87**^{E} **0.90**^{S}				
Perceived ease of use (4)	0.61^{E} 0.65^{S}	0.67^{E} 0.63^{S}	0.56^{E} 0.57^{S}	**0.87**^{E} **0.88**^{S}			
Perceived usefulness (5)	0.62^{E} 0.57^{S}	0.77^{E} 0.83^{S}	0.70^{E} 0.66^{S}	0.60^{E} 0.65^{S}	**0.87**^{E} **0.87**^{S}		
Reliability (6)	0.64^{E} 0.66^{S}	0.35^{E} 0.53^{S}	0.50^{E} 0.47^{S}	0.50^{E} 0.58^{S}	0.41^{E} 0.53^{S}	**0.95**^{E} **0.92**^{S}	
Satisfaction (7)	0.71^{E} 0.60^{S}	0.74^{E} 0.75^{S}	0.80^{E} 0.74^{S}	0.74^{E} 0.68^{S}	0.76^{E} 0.74^{S}	0.57^{E} 0.60^{S}	**0.90**^{E} **0.92**^{S}

Note: E= Educators data; S= Students data

Table 5. Correlation among variables and square root of average variance extracted

4.1 ANOVA Results

We compared the means of the major constructs among the educators and students by using one way ANOVA. The results are summarized in Table 6. Overall, the analysis suggests that students, in general have more positive perceptions than educators with the e-learning system. Especially, the difference was significant for perceived ease of use, access, reliability, and compatibility. The more positive perceptions of students can be explained by the fact that the educators usually use the system deeper than the students. For example, educators might need to develop a course page from the scratch. They have to put the required functionalities in the course pages. On the other hand, students usually use the course page functionalities that are developed by the educators. As a result, the students usually face less number of problems during their usage. Consequently the students have more positive perceptions about the system. This fact is also depicted from the students' comments to the open ended survey questions. For example one student commented the following.

"*….As a student user, my use of Moodle is very limited and thus, I rarely face problem with the system….*"

Construct	Mean educators	Mean students	Difference significance
Perceived ease of use	4.16	4.99	0.000
Perceived usefulness	5.02	5.34	0.05
Confirmation	4.38	4.57	0.189
Access	4.18	4.62	0.009
Reliability	4.18	4.54	0.03
Compatibility	4.58	5.21	0.000
Satisfaction	4.27	4.53	0.119

Table 6. Averages of the constructs

4.2 Structural model results

The test of the structural model includes estimates of the path coefficients, which indicate the strengths of the relationships between the dependent and independent variables, and the R-square values, which represent the amount of variance explained by the independent variables. Table 7 shows the results of the hypothesized structural model for both educators and students.

Predictors	Educators' data		Students' data	
	Coefficients (t-stat)	Explained variance	Coefficients (t-stat)	Explained variance
Perceived ease of use	0.25 (5.12)	0.815	0.15 (1.80)	0.723
Perceived usefulness	0.15 (2.26)		0.15 (1.77)	
Confirmation	0.35 (5.7)		0.31 (3.9)	
Access	0.12 (2.29)		0.067 (1.15)	
Reliability	0.08 (2.08)		0.14 (1.94)	
Compatibility	0.14 (1.86)		0.22 (2.34)	

Table 7. PLS analysis results

For educators, confirmation (β=0.35, t=5.7), perceived ease of use (β=0.25, t=5.12), perceived usefulness (β=0.15, t=2.26), access (β=0.12, t=2.29), reliability (β=0.08, t=2.08), and compatibility (β=0.14, t=1.86) had significant effect on satisfaction, accounting for 81.5% of the variance in that measure. For students, confirmation (β=0.31, t=3.9), perceived ease of use (β=0.15, t=1.80), perceived usefulness (β=0.15, t=1.77), reliability (β=0.14, t=1.94), and compatibility (β=0.22, t=2.34) had significant effect on satisfaction while access (β=0.067, t=1.15) had non-significant effect on satisfaction. These predictors explained 72.3% variance in satisfaction. While we compare the two structural models, two interesting differences are observed.

First, the predictors explained around 9 percentage points less variance of satisfaction for students than the educators. This result implies that students develop their satisfaction from other factors too. For example, analysis of the open ended survey questions revealed that students' satisfaction may also depend on educators' teaching style. One student commented the following.

"*….Moodle is an excellent tool, but in many cases the lecturers do not know how to use it effectively….*"

Another student commented the following.

"*….Lecturers do not really provide any incentive for using Moodle, for example discussion board. The discussion board is an excellent way to share ideas which could be utilized heavily if proper incentive is announced by the teachers….*"

Second, the effect of perceived ease of use on satisfaction was much stronger for educators than for students Prior literature on technology adoption/post-adoption research found inconclusive findings regarding the role of perceived ease of use on satisfaction and post-adoption usage. Many studies suggested that as users become more comfortable with a system, the influence of perceived ease of use diminishes (Venkatesh et al., 2003). The ANOVA results revealed that the students had very positive perceptions on ease of use of the target system. Thus, the finding is in line with the prior literature. However, as described earlier the positive ease of use perception is mostly due to limited use by students rather than experience.

5 IMPLICATIONS

Our study has at least three major theoretical implications. First, while prior research has investigated either educators' or students' perspective, we have investigated both and presented a comparison. Our results suggest that students have more positive perceptions regarding the e-learning system than educators. As the perceptions vary between the two groups, we call for more research on comparing their perceptions in order to develop customized intervention plan.

Second, we observed that the predictors explained around 9 percentage points less variance of satisfaction of students than educators. This finding suggests that students put importance in some other factors as well to develop their satisfaction. Especially, our qualitative text data analysis revealed that educators' teaching styles play major roles in developing students' satisfaction. Thus, future studies should empirically investigate the influence of teaching style on students' satisfaction.

Finally, we found that perceived ease of use does not play a role in developing students' satisfaction although it plays significant role in developing educators' satisfaction. This finding implies that the role of perceived ease of use on developing satisfaction may depend on the respondents' usage profile, rather than mere experience. This may explain why prior research found inconclusive findings regarding the role of perceived ease of use on satisfaction and usage behavior during post-adoption stage.

Our research findings have three practical implications. First, we observed that it might vary perspectives of educators and students regarding an e-learning system. An educator could have positive perceptions with the system as it eases his teaching administrative jobs. But it does not mean that students will automatically have positive perception. So, we suggest the school administration to evaluate the perspective of both educators and students before making important managerial decisions.

Second, practitioners also need to remember that educators might have less positive perceptions than students. Thus, we suggest putting more effort in motivating educators toward the e-learning systems.

Finally, we found that educators' teaching style may improve students' satisfaction. Thus, we suggest educators choose teaching style based on the students learning style and type of courses.

6 CONCLUSIONS

This study compared the perceptions of educators and students with an e-learning system. We collected attitudinal data from 175 educators and 249 students using a popular e-learning system, Moodle in a Finnish university. We compared the construct averages using ANOVA. Then, we developed PLS models where we use satisfaction as the dependent variable. Our findings suggest that students possess more positive perceptions than educators regarding the e-learning system. We also found that the predictors explained 9 percentage points less variance of satisfaction for students than educators.

Our study has a number of limitations. First, the research was cross-sectional. The beliefs of the users regarding a system will change as the users gain experience of a target system but such changes cannot be captured with the type of cross-sectional study undertaken. Second, the study has been conducted using a single e-learning platform in a single Finnish university. Thus, cautious should be taken before generalizing the findings to other contexts. Third, use context differences between educators and students might have a role regarding the observed differences in perceptions. Thus, we call for more studies to verify the findings of this study.

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