

The Relationship between Self Report of E-Class Use and Students' Perception at Democritus University of Thrace

N. Vernadakis, P. Antoniou*, V. Derri, M. Giannousi, and E. Kioumourtzoglou

Department of Physical Education & Sport Science, Democritus University of Thrace, University Campus, 69100 Komotini, Greece

Course management systems (CMS) are becoming widely used throughout all levels of education. This alone makes research on the impact of course management systems an effective instruction paramount. Therefore, the purpose of this study was to examine the relationship between self report use of the CMS, e-Class and students' perception at Democritus University of Thrace. Participants were two hundred eleven (n=211) undergraduate students, between the ages from 19-24 years old. One hundred fifteen (71.1%) of the participants were male and sixty one were female (28.9%). Data was collected using an online questionnaire during one week period. Pearson correlation coefficients was conducted to determine what relationships exist among the self report of e-Class use and the five dimensions that were used to assess the students' perceptions in online courses (including participation, educational material, usefulness, user control and interaction). The results of the correlational analyses identified a significant negative correlation between the self report of e-Class use and students' perception in each dimension of the survey. These finding suggest that the higher the e-Class use, the lower the evaluation of students' perception. Further research is needed to see if this relationship exists with other student populations enrolled in other online courses.

Keywords students' perception; online learning; course management system; online courses; higher education

1. Introduction

With the trends of online education, many higher education institutions have made great investment in an online Course Management System (CMS). Course management systems such as WebCT and Blackboard are enjoying wide use as delivery systems for online course material [1, 2]. Generally, studies [3-5] reported that CMS have contributed positively to both instructional and learning needs. While the advantages of online learning are exciting and numerous, the problems associated with successful implementation of an online learning program can detract from the educational experience of even the most motivated student.

Researchers are making contributions, uncovering various elements of online experience. Arbaugh [6] for instance, found that students' perception of the online learning environment including interaction with other learners, ease of use, and the usefulness of course software changed as they participated in additional online courses. The most significant changes were noted between the first and second online course that learners participated in. Increases in the learners' satisfaction with the online course delivery medium and ease of use were noted with subsequent online course experience and the largest increase was seen after participants completed their first course online. These findings suggest that programs should encourage students to take more than a single online course before deciding if online learning is right for them [6].

Miller, Rainer, and Corley [7] conducted a study in an online class delivered by interactive modules, which was developed using Authorware. The course was about Microcomputer Applications, including the Microsoft Office package, as well as some basic computer concepts. At the end of the semester, the 66 students who took the course were administered a survey, which included measures for perceived ease of use, perceived usefulness, and subjective norm to predict engagement and participation. Data were analyzed with descriptive statistics and then analyzed with a multiple regression model. They reported that perceived ease-of-use and perceived usefulness both have a significant and positive relationship with the amount of time students spent in the course. Subjective norm, however, did not have a significant impact on engagement in the online course.

More recently, Rodriguez, Ooms, Montañez [8] indicated that comfort with computer operations and online technology tools does not appear to be related to number of online courses taken, which counters a common expectation that comfort limits course taking. However, they also found a negative relation between the number of online courses taken and satisfaction. In all, 23% of the students who had online-learning experience were dissatisfied at some level, whereas 47% reported that the online-learning component of hybrid courses were less than helpful. This indicates an important area for study—satisfaction with online-learning experiences may prevail as a determining factor for the success of online courses in the future.

There are many researches in the area of student satisfaction of e learning and online course management systems [9-11]. However, the factors influencing the satisfaction of such a system may vary among different

* Corresponding author: e-mail: panton@phyed.duth.gr. Phone: +30 2531039659

societies. Even though the Learning Management System was used for quite some time at Democritus University of Thrace, little research was devoted on students' perception of the system. This study is a preliminary investigation attempting to ascertain a relationship between the perception of the system and the perceived use of the system. The study looked at the following general research statements:

1. Is there a relationship among the students' perceived amount of e-Class use and the students' perception toward this system in each of the following dimensions: participation, educational material, usefulness, user control and interaction respectively?

2. Method

2.1 Participants

The participants included in this study were undergraduate students enrolled in courses at the Democritus University of Thrace, Department of Physical Education & Sport Sciences in the spring semester of 2008. The sampling frame used for this study was convenience sampling. For data collection, the researchers asked five instructors who were delivering online instructions in different subject disciplines at the university to allow students' participation in the study. As a result, two hundred eleven (n=211) students were participated in the data collection. The participants consisted of 76 (36%) freshmen, 58 (27.4%) sophomores or juniors, and 77 (36.5%) seniors. One hundred fifteen (71.1%) of the participants were male and sixty one were female (28.9%), between the ages from 19-24 years old. The students' participation was voluntary, and the anonymity of students' responses and their confidentiality as participants were explained before distributing the instruments.

2.2 Instrumentation

Examination of the literature revealed the Course Management System Scale - CMSS [12] as a valid instrument for testing students' perception toward CMS. This instrument was developed to evaluate the educational services offered by an asynchronous course management system (e-Class) for the support of the traditional instruction method in the classroom. Reliability estimates of the original instrument based on Cronbach's alpha measure was .78.

The CMSS survey contained two sections: a) demographic information, and b) the students' perception toward online CMS.

The first section of the survey included questions relative with the participants' demographic information, such as: age, gender, academic year and perceived amount of e-Class use. In the second section, five dimensions were used to assess the students' perceptions toward online CMS, including participation dimension (5 items), educational material dimension (4 items), usefulness dimension (4 items), user control dimension (4 items), and interaction dimension (4 items). Under the five dimensions previously identified, twenty one items were involved such as: My participation in class discussions has improved significantly; The educational material was clear; The registration process was efficient; I was able to repeat the curriculum whenever it was necessary; Student-to-instructor interaction was more difficult than in other courses. Participants rated their responses for each of these 21 items using a 5-point Likert-type scale. These five response categories were coded from 1 to 5 with 1=strongly disagree, 2=disagree, 3=neither disagree nor agree, 4=agree and 5=strongly agree.

2.3 Data Collection

Data for this research was collected using an online questionnaire. An online questionnaire is a more efficient and economical way of collecting data from students in a university because most students today are avid users of the web. Communication using email is almost inevitable for faculty since almost all students are using such communication as a primary source for communication outside the classroom. Most university announcements and event updates are also communicated through the web or email communication, which make accessing the web and knowledge of email communication an inevitable tool for students.

The online questionnaire was designed in such a way that when participants first clicked on the link to the questionnaire, they were shown an informed consent letter explaining the purpose and structure of the questionnaire, their rights as participants, as well as any possible risk involved in participation of this research. In the letter, participants were also given the email address of the researcher in case there were other questions regarding the research that a participant wished to clarify. The email could also be used if a participant was interested in knowing the results of the research study.

The online questionnaire was divided into two different sections. After reading the informed consent letter, the participants were asked to indicate if they had ever used e-Class. Participants who have used or were using e-Class completed all two sections of the questionnaire. Participants who had never used e-Class or had never

heard of e-Class were directed to only first section of the questionnaire – demographic information. Both groups of participants completed the questionnaire in a section-by-section manner, that is, after the completion of one section, the participant was asked to click a next button to go to the next section, until all sections were completed. The questionnaire was also designed with an embedded program so that if a participant chose to skip any item, a remark designed using JavaScript appeared requiring the participant to complete the missing item before he or she proceeded to the next section. After completion of the entire questionnaire, the participant clicked on a submit button, which sent the completed questionnaire to a secure server accessible only by the researcher. It was determined that participants would need approximately 30 minutes to complete all sections of this instrument.

3. Results

Descriptions of the statistical procedures utilized in analyzing the data collected for this investigation are presented in this section. Data analysis was conducted using SPSS version 17 statistical software.

The statistical analysis included both descriptive statistics and inferential statistics. Descriptive statistics were provided to summarize the data and include measures of central tendency: mean, median, mode, and measures of variability (i.e., range, standard deviation) [13]. Inferential statistics were based on the relationship between two or more variables in two different but related ways. The Pearson product-moment correlation was used to determine the relationship between self report use of the CMS, e-Class and students’ perception at Democritus University of Thrace. An alpha level of .05 was established prior to data analysis.

3.1 Demographics

Males comprised 71.1% (n=150) of the sample while females comprised 28.9% (n=61). Most participants were 22 years of age, the mean age was 21.6 (S.D. = 3.12) and the range was 19 to 24. Out of the 211 respondents who participated in this study 77 (36.5%) were seniors while 76 (36%) were sophomores & juniors making up the next largest group. The remaining 58 (27.5%) of the participants were freshmen. Most respondents were considered regularly users of e-Class in terms of the perceived use toward this CMS: sixty two (29.4%) of the participants indicated that they have used e-Class daily, one hundred nineteen (56.4%) reported to have used e-Class when needed and only twenty four (12.3%) of the respondents used e-Class rarely. There were four (1.9%) undergraduate students who never used e-Class system. Figure 1 reports the percentages of participants associated with the perceived amount of e-Class use.

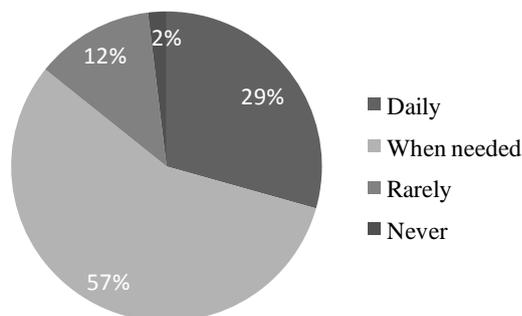


Fig. 1 Percentages of participants associated with the perceived amount of e-Class use.

3.2 Relationship between self report use of the CMS, e-Class and students’ perception

Pearson correlation coefficients were computed among the five dimensions of the students’ perceptions toward the online CMS and the perceived amount of e-Class use. The results of the correlational analyses presented in table 1 show that 15 out of the 15 correlations were statistically significant and were greater than or equal to .21. The correlations of perceived amount of e-Class use with the other five dimensions of the students’ perceptions toward the online CMS measures were negative significant. These finding suggest that the higher the e-Class use, the lower the evaluation of students’ perception in each dimension of the survey.

Table 1 Correlations among the five dimensions of the students’ perceptions toward the online CMS and the perceived amount of e-Class use.

	Perceived use of e-Class	Interaction	Participation	Educational material	Usefulness
Interaction	-.21**				
Participation	-.43**	.45**			
Educational material	-.28**	.44**	.60**		
Usefulness	-.30**	.41**	.47**	.49**	
User control	-.43**	.37**	.53**	.38**	.34**

**p < 0.01

4. Discussion

Online course management systems are in use to facilitate the face to face learning process in many universities. There are many variables that shape and influence student’s perception of an online CMS. This study investigates whether there is a relationship between the perception of a student regarding the CMS, e-Class and their perceived use of this system. Investigating this relationship will help the administrators to have a better understanding of the students’ usage in the online CMS at Democritus University of Thrace. Results indicate that there were a significant negative relationship between the perception students had about the CMS, e-Class and their perceived use of the system. Students who spent more time in the CMS, e-Class had less positive perception toward physical education courses using this CMS than students spent less time. This is consistent with previous studies [8, 6] in the literature which indicated that time commitment to the course was one of the reasons stopped students from favoring the computer-based learning environment. Stepp-Greany [14] reported that only half of the participants favored CALL due to the time commitment to the course, even though time was a factor to learning benefit. Unlike these studies, Liyanagunawardena [15] reported that no significant relationship was found between the student perception toward the online learning management system, LearnOrg and their level of actual system use.

Students seem to be taking advantage of the CMS opportunities. The findings on student perceived use demonstrated that students use the CMS, e-Class regularly. This result was evident in both the unobtrusive data and the survey where only four student reported “never using” the CMS. These findings also support the importance of relationship among the students’ perceived amount of CMS use and the students’ perception in online courses. The literature has indicated the importance of examining students’ perceptions, which provided information about students’ academic performance [16], the usability of the teaching materials [17], and the impact of innovative instruction [14]. If it is the goal of an institution to build student acceptance of a course management system, then they should design courses with appropriate structure and adequate dialogue to help minimize the detrimental effect of technology related problems on students’ learning and also increase student satisfaction.

As with all investigations, this study is not without limitations. First, the data used in this study were drawn from a single institutional sample. The institution is best described as a large, public research department on physical education and sport sciences at Democritus University of Thrace. Thus, findings should be interpreted with caution and generalizations may only be relevant to institutions similar in size, control status, and institutional emphasis. The present study used self-report data and this may be another possible limitation. To the extent that respondents did not know the information being requested or found survey questions to be ambiguous and unclear, the generalizability of these findings may be limited [18].

It is also important to note that the sample consists of slightly more men than women. This is noteworthy, given recent enrollment data that suggest women comprise the majority of postsecondary students [19]. Thus, results from the present study should be interpreted in light of this limitation and generalizations may be limited to comparable samples.

5. Conclusion

The results of this study might provide suggestions to administrators and information technology directors who hope to increase the adoption and diffusion of CMS technology in undergraduate education. This study provided useful information about the relationship between frequency of use and student perception. For example, findings suggest that time spent in the CMS, e-Class had effects on their perceptions toward using the CMS. In other words, students who spent more time in the CMS, e-Class had less positive perception toward physical education courses using this CMS than students spent less time. Administrators may use these findings when

designing strategies for increasing the use of CMS technology on campus. In addition, results from this study may prove suggestive of the impact of students' use of e-Class on perception in tertiary education; though causal linkages cannot be drawn from self reported data. Therefore, further research is needed to see if this relationship exists with other student populations enrolled in other online courses.

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