E-Learning in Place of Face-to-face Lectures: An Exploratory Study of Students' Perceptions

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Abstract
E-learning has emerged as an essential system in higher education. In an era of technological advancement the move to online learning is inevitable as students are becoming more technically knowledgeable. Based on the Theory of Reasoned Action (TRA) the objectives of this study are to explore students' perceptions towards e-learning as a replacement for face-to-face lectures in the discipline of Information Systems and Technology. A mixed methods approach was utilised. Questionnaires were employed as the primary source of data. A sample of 60 students from the IST discipline shows that both e-learning and face-to-face lectures were considered relevant for different forms of subject matter. Additionally, it was found that most students valued face-to-face lectures in contexts that require a common understanding of cognitively higher level of learning, and students valued e-learning for the convenience and ease of use. These findings also suggest that students have different learning styles and therefore researchers should take into consideration instructors' competence in instructional pedagogy in e-learning. Instructors should, likewise recognize that e-learning may be perceived differently by students. Based on these findings, implications for theory and practice are explained.

Keywords: instructional pedagogy, theory of reasoned action, traditional and online learning, e-learning.

Introduction
The search for more effective means of and access to learning in higher education has generated wide interest in e-learning. Most institutions are integrating online learning systems in the delivery of lectures and facilitation of learning such as Duke University; the Georgia Institute of Technology;

the University of California, the University of Illinois, University of Washington; University of Edinburgh, and the University of Toronto. Used in a broad sense, in this study e-learning refers to instruction that is performed via any electronic means such as the Internet, Intranets, multimedia platforms or Learning Management Systems (LMSs). There are varied reasons for institutions turning to e-learning; a number out of financial necessity or the need to be up to date with the developing online pedagogy (Nam, 2009). A bid for increased student numbers is a strong contributing factor to the use of e-learning, which creates a competitive advantage for certain universities. Bouhnik and Marcus (2006) summarise succinctly the four main advantages of e-learning: freedom to decide when to learn, lack of dependence on the time constraints of the lecturer, freedom to ask questions and the accessibility to the course's online materials at students' own choice. Amidst the advantages postulated in most studies, what remains vague is whether the positive perceptions of e-learning gained in one area of instruction necessarily transfer to others.

Despite the well-recognised advantages of e-learning, there are potential disadvantages that are linked to an overall aspect of e-learning, which is decreased face-to-face interaction. Some of these disadvantages cited in Elearning-Companion (2011) are instances when technical glitches occur, that is when the technology fails to serve its purpose, the loneliness that e-learning which may negatively impact students' zeal to learn and in some cases employees who are reluctant to accept degrees or qualifications obtained online.

Teaching methods have been leaning towards learner-centred methods, which are appropriate for e-learning and away from teacher centeredness for a long time (Rambe, 2012). In this context, the limitations of the resources as observed by practitioners inhibited this changing trend. Large lecture classes remained in universities more so because of their resource efficiency rather than their pedagogical effectiveness. E-learning has gained popularity among universities over the years mainly for the resource efficiency achieved. Numerous studies point to the relevance of e-learning at universities (Moore, Camille & Gaylen 2011; González & Medina 2012).

It has to be noted, however, that while the rate of transition to e-learning is increasing, this movement have not affected all disciplines and faculties

equally – the shift to e-learning is increasing at different rates in different settings.

Students have been observed to attend lectures irregularly or in certain cases not at all; and instead use online tools for information such as the LMS that is used in the University. In this context, it is pertinent to consider students' views of e-learning as well as of face-to-face lectures in light of having access to digital media. The uniqueness inherent in this study is the choice of IST participants who are well positioned to be amenable to digital media communication. Their perceptions are of particular value as compared to other studies with a more general student population. The objective of this article is to determine the perceptions of e-learning by students in the University as opposed to face-to-face lectures.

The article is organised as follows: The next section presents the literature review followed by the methodological approach. Thereafter the results of the study are presented according to the TRA model. Finally findings are discussed and some implications for e-learning are proposed.

Overview of Literature Pertaining to e-Learning as an Educational Tool

According to Ramayah, Ahmad and Lo (2010) the increased use of the Internet have led to the adoption of e-learning, a convenient and efficient method for learning and delivery of essential knowledge to students. In an era of technological advancement, students expect an enhanced learning experience through the use of all forms of information and communications technology. E-learning is considered mandatory by some academics and students.

The design and management of the learning environment determines the quality of the content in e-learning which learners consider valuable.

It is argued that if it is the quality of the service or system that leads to it being perceived as useful, then it will be a predictor of the behavioural intention of utilising the e-learning system. Liaw (2008) claims that understanding learners' attitudes towards e-learning is indeed important – as it can assist instructors in facilitating improved usage of e-learning by students – and its effects on their academic performance. In a related study Yaghoubi, Mohammedi, Irvani, Attaran and Gheidi (2008) assert that

students who have engaged themselves in e-learning courses are generally optimistic about their experiences.

In addition to the above, the learning environment has a significant impact on students' perceptions of the type of learning they prefer. Singh, O'Donoghue and Worton (2005) assert that an e-learning environment presents students with an enhanced learning experience as compared to a more conventional learning environment. Furthermore, they describe e-learning environments as releasing the time limitation which traditional learning imposes upon students. Despite this benefit, Smart and Cappel (2006) hold that learning in an online environment requires tremendous self-discipline and motivation. They argue that this is so when students participate in online units as autonomous, self-study units, as opposed to participating as a group of online users. Liaw (2008:865) stresses the significance of four elements related to e-learning environments, namely: "environmental characteristics, environmental satisfaction e-learning activities, and learners' characteristics". In addition, he claims that communication in e-learning environments between the learner and instructor or learner and peers – whether synchronous or asynchronous – will generate more interaction allowing students to share and obtain information from various sources.

There are differing results regarding e-learning in various studies. For example, Paechter and Maier (2010) found that although students recognised the benefits of e-learning environments, they preferred face-to-face learning for a common understanding of the material and for the interpersonal relations that could be established. In other words, they found that the use of face-to-face lectures was suitable for the development of skills or conceptual knowledge of the subject matter while e-learning was suitable for the development of skills in self-regulated learning. In his case study of perceptions of e-learning, Journell (2010: 69) found that most participants felt that "e-learning was best suited for information transmission ... rather than active or social learning". González and Medina (2012) affirmed this finding when they found that interaction among students in web-based distance education was lacking, a state of affairs, which has serious consequences for effective learning. Teachers are encouraged to establish this aspect of interaction.

Singh *et al*. (2005) caution universities in making a decision to replace conventional teaching methods with e-learning environments. Various learning styles and the diverse background of student population must be taken into consideration. Karagiannopoulou and Christodoulides (2005) in their study have shown that students' behaviour towards e-learning and their academic outcomes are affected by the teaching and learning environment which also involves numerous interrelated components such as teaching methods and assessments. Ginns and Ellis (2007) explored other factors that affect the quality of learning outcomes such as types of teaching-learning environment and students' perceptions of the teacher-learning environment. While the cost-effectiveness of e-learning and the benefits of the hype that e-learning triggers are factors to consider, students' views and perceptions of e-learning cannot be minimised.

Despite the popularity of LMSs among universities, some academics have been averse to engage with the system or with technology in general. Often reluctance is defended when lecture content is considered private, censored or interactive (Gosper, Green, McNeill, Phillips, Preston, & Woo 2008). Studies published and anecdotal evidence indicate that the main issue of concern to some academics is that online lectures could possibly reduce live lecture attendance (Chang 2007). On the other hand, Gysbers, Johnston, Hancock and Devyer (2011) argue that if everything is online why should students attend lectures? They found that the "perceived added value from attending an engaging live session" was a factor that contributed to lecture attendance (Gysbers *et al*. 2011:34). In an earlier study, Goldsmith, Snider and Hamm (2010) claimed that students identified online learning as socially rewarding and therefore see it as a means for preparing students as future leaders. As far as achievement is concerned, Gürsul and Keser (2009) have found in their study of a Mathematics education course, students achieved better results in the online course than on the face-to-face course. Yet, in a separate study Delaney, Harmon and Ryan (2011) advocate that lecture attendance matters for grades.

It is essential to understand the reasons for continued student lecture attendance or non-attendance and, in particular, their perceptions of e-learning – where this mode of delivery works or conflicts with face-to-face learning.

In the current study a preliminarily investigation focussing on students' perceptions of e-learning and face-to-face Information Systems and Technology (IST) lectures was performed. The study was guided by the following set of research questions:

1. What are the perceptions of students towards face-to-face lectures or instruction?
2. What are students' perceptions of e-learning?
3. How do both perceptions compare with regard to choosing one or the other?

In trying to answer these questions, the theory of reasoned action (TRA), proposed by Ajzen and Fishbein (1980) was used as a framework for this study. This framework is introduced in the next section.

Conceptual Framework

Based on students' perceptions of e-learning in comparison to face-to-face traditional learning, the study uses the Theory of Reasoned Action (TRA) as a conceptual framework to determine their intention to choose one or the other mode of delivery. The Theory of Reasoned Action (TRA) suggests that there are two main predictors of intention: attitude toward such behaviour and subjective norms. The theory states that a person's behaviour is a function of one's attitude and of how one thinks other people would view them if they performed the behaviour (subjective norm). A person's attitude, combined with subjective norms, forms his/her behavioural intention. In short, the theory consists of three constructs, namely: attitude, subjective norms, and behavioural intention.

It is not sufficient knowing whether an individual performs an action or the frequency of that action; what is also important is knowing why an individual performs or does not perform the action, what determines their choice of action and what and how external variables influence their decision. TRA is a generalized model to answer these questions. Many empirical studies in diverse situations have used the TRA (Sheppard, Hartwick, & Warshaw 1988) to gain insight to the contributing factors of human behaviour or action. In this study the TRA is used to determine students' preferences regarding their preference to face-to-face lectures and or e-learning.

Figure 1 below indicates the generalised TRA model used in this study.

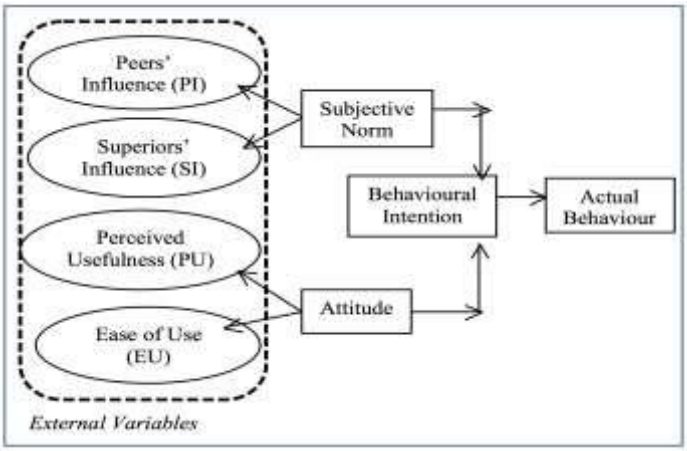

Figure 1: Theory of Reasoned Action framework (adapted from Azen and Fishbein, 1980)

Method

The study employed a mixed methods approach and is exploratory in nature.

Participants

The target population for this study was Information Systems and Technology (IST) second and third year students. The choice of participants was based on the fact that both groups were exposed to some form of e-learning since all courses in the IST department made use of the existing learning management system, *Moodle* as well as other forms of e-learning such as virtual worlds (for example the use of *SecondLife)*. More importantly, it was mandatory for all courses in the IST discipline to use the existing LMS, unlike other disciplines. A purposive sample of 60 participants was used. All 60 participants completed and returned the questionnaire in 2010.

Data Collection Instrument

The primary source of data collection was a questionnaire. The questionnaire comprised sections A and B. Section A elicited demographic

information such as age group, gender, race and residence, and Section B consisted of items using a 5-point Likert-type scale. The items were adapted to relate them to student views of and attitudes towards face-to-face lectures and e-learning. Section B included some open-ended questions, each of which afforded opportunities for write-in comments.

Data Analysis

The data was captured and coded using a statistical analysis package SPSS. Descriptive and inferential statistics were performed. In addition, the write-in comments were analysed manually to determine common key themes which helped to validate some of the quantitative results.

Limitations of the Study

The research was conducted with a specific set of students to determine their perceptions toward e-learning and face-to-face lectures, and therefore may not be generalizable to all students. Due to time constraints it was not possible to use a larger sample of the entire student population.

Data Analysis and Findings

Demographic Analysis

In this study there was no significant difference in the variables gender and age regarding students' perceptions or acceptance of the use of e-learning systems. The majority of the participants (96.7%) were in the age group of 18-25 years. Most students in this age group made use of the e-learning tools. As far as the variable gender, is concerned, 84% of females made use of the e-learning system and 89% of males were using the e-learning system consistently, suggesting that males and females do not differ in terms of using e-learning tools as compared to earlier studies. This insignificant difference could be attributed to the fact that both males and females in the same age group of 18-25 years are equally exposed to all forms of digital media in the context of the this course.

Analysis of Students' Views

Participants indicated their level of agreement to each of the statements related to face-to-face lectures and e-learning. Using a 5-point Likert-type

scale, values for the responses were assigned as follows: Strongly Agree (SA) (5), Agree (A) (4), Neutral (N) (3), Disagree (D) (2), and Strongly Disagree (SD) (1). Means and standard deviations were calculated for each statement as well as the sum of the frequencies of "agree" and "strongly agree". Each item was classified into the pre-organised constructs as indicated in Figure 1: namely, perceived usefulness (PU), perceived ease of use (PEOU), Superior's influence (SI), peers' influence (PI), and behavioural intention (BI), these in turn were grouped according the constructs of the TRA model, that is, attitude, subjective norm and behavioural intention.

In the next sections the perceptions of face-to-face lectures and e-learning, are examined and then a comparison of both are made with respect to the TRA model.

Students' Perceptions of Face-to-face Lectures

Student responses to the question "how often do you attend lectures" are reflected in Figure 2. The graph in figure 2 represents the frequency of lecture attendance by the IST students at lectures.

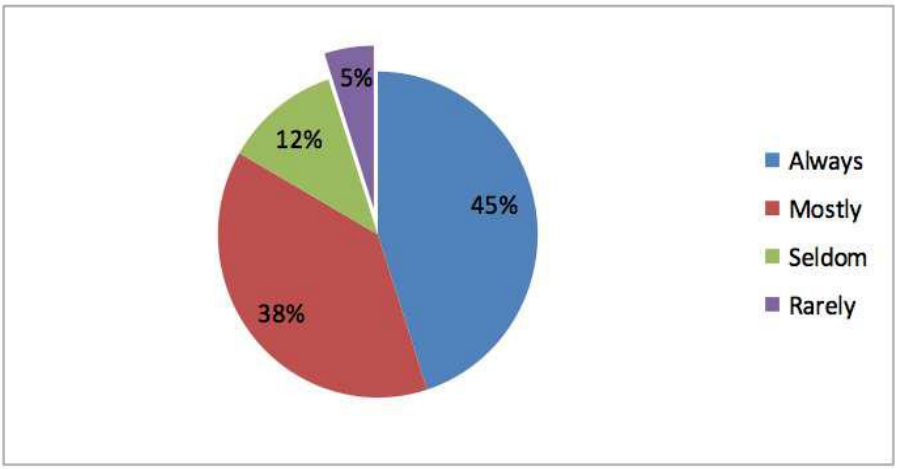

Figure 2: Lecture Attendance

The majority of students (83 %) either always or mostly attended lectures. Only 5% of students rarely attended the lecture. Despite the fact that there are e-learning systems and tools available, students do attend lectures.

In the open-ended questions some insights were revealed about students' views of lectures. Some quotations are given below in support of the positive feedback for attending lectures.

> *I prefer to listen to a lecturer and ask questions for clarification if need be.*
>
> *You don't feel alone when trying to grasp the difficult sections when in class together.*

Students' views with regard to face-to-face lectures are represented in Table 1 below:

Table 1: Perceptions of face-to-face lectures

	Items	Mean	St Dev.	A/SA
1 (PU_1)	Lectures explains concepts clearly and in depth	3.60	0.94	67%
2 ($PEOU_2$)	I'm comfortable with attending lectures	3.68	0.98	70%
3 ($PEOU_2$)	I rely more on lectures for studying and understanding my work.	3.01	1.08	45
4 (PU_2)	Lectures provide enough support for the Course	3.13	1.06	42
5 (SI)	Parents/Family put pressure on me to attend lectures/tuts (RC)[1]	2.78	0.64	5%
6 (BI_1)	Attendance is vital if I want to achieve good grades	3.73	0.91	63%
7 (PU_3)	The subject is difficult and complex to learn without help and guidance in class	3.30	1.04	40%
8 (PU_4)	I am genuinely interested in the subject	3.06	1.13	45
9 (BI_2)	It is not necessary to attend lectures if you have access to Moodle or any e-learning system. (RC)[1]	3.60	1.03	62%

The response mean scores of most items in table 1 above are greater than or equal to the mean (3.00), which suggests that in general students were positive about the lectures and saw the need for lectures. Items 1 and 2 indicate a positive inclination towards face-to-face lectures. However, items 3 and 4 show less than 50% of students depended totally on lectures. A closer examination of the data indicates that 40% and 32% of students were neutral about items 3 and 4 respectively. This implies that they could not decide whether lectures were enough to support them or not. Item 5 was re-coded since if attending lectures were compulsory then it should count as a negative for face-to-face lectures. Most notable, is the response to the item "attendance is vital if I want to achieve good grades". The motivation for attending lectures cannot be overstated when grades are an issue – 63% of the students felt strongly about improving their grades by attending lectures.

Items 7 and 8 are specific to the subject at hand and therefore cannot be viewed as a general characteristic of all lectures. It should be pointed out though, that the data suggests that a higher cognitive ability required of a course seems to be more suitable to face-to-face interaction, which is in keeping with Paechter and Maier's (2010) study. Item 9 was re-coded to yield a positive leaning towards face-to-face lectures. There was an overwhelming agreement to attend lectures even when they had full access to all materials online. While students' differentiated learning ability has not been considered in this study, it is vital to take cognisance of students' views, which generally are insightful and cannot be disregarded.

When students were asked about the aspects that they valued most in lectures, a clear majority (71.1%) felt that clearer explanations and immediate response to their questions in the lecture stood out as the most important aspect for them in face-to-face lectures. About 18.3% of the respondents viewed guidance for test and examinations as the most useful component that face-to-face lectures provided and only about 8.3% felt that lectures are time consuming which could be used effectively when studying individually.

The correlation matrix approach was applied to examine the convergent and discriminant validity. Table 2 shows the results of correlation analysis which indicate the smallest within-factor correlations for face-to-face lectures as: perceived usefulness = 0.81, perceived ease of use = 0.88, superior's influence = -0.78, and behavioural intention = 0.86.

Table 2: Face-to-face Correlation Matrix of external variables and BI variable

	PU1	PEOU1	PEOU2	PU2	SI	BI1	PU3	PU4	BI2
PU1	1								
PEOU1	0.952823	1							
PEOU2	0.884669	0.895417	1						
PU2	0.855438	0.857742	0.904473	1					
SI	-0.62192	-0.6495	-0.78981	-0.70837	1				
BI1	0.868698	0.879181	0.877795	0.857742	-0.73889	1			
PU3	0.81117	0.856045	0.903389	0.899034	-0.7437	0.856045	1		
PU4	0.861888	0.867066	0.936139	0.944373	-0.71021	0.850271	0.891498	1	
BI2	0.925374	0.93894	0.884379	0.859594	-0.67586	0.93894	0.874013	0.859842	1

Students' Perception towards e-learning

Clearly, the external variables, perceived usefulness and perceived ease of use, both of which subsume the items that have been grouped to fall into these variables, are significant with regard to the behavioural intention, construct, that is, to attend lectures. In other words the construct, attitude, which is made up of PU and PEOU, does influence behavioural intention. There is a strong positive correlation between attitude and BI.

However, the construct, subjective norm (superiors' influence in this case) has a negative bearing on BI. Forcing students to attend lectures by parents will not necessarily have the desired effect if students are not ready to attend lectures.

Participants indicated their level of agreement to each of the statements related to e-learning. Students' views with regard to e-learning are represented in Table 3.

Table 3: Perceptions of online learning

	Items	Means	STDEV	A/ SA
1 (PU_1)	e-Learning is more powerful means of learning than more traditional methods.	3	0.71	25%
2 (PU_2)	e-Learning can be used as a supplemental instructional tool.	4.03	0.66	80%
3 (PU_3)	I feel that e-learning does not necessarily provide face-to-face interactions between lecturers and learners (RC) [1]	1.603	0.85	3%
4 (BI_1)	In my view, e-learning is more effective for teaching and learning in higher education than books and other printed materials.	4.43	0.92	85%
5 (PU_4)	I think e-learning does *NOT* have noteworthy values for human societies in general (RC) [1]	3.56	1.12	50%
6 (PU_5)	I think e-learning does *NOT* offer educational/instructional values in higher education (RC) [1]	3.7	0.83	68%
7 (PU_6)	I like the idea of having both e-learning systems in place and the face-to-face lectures	4.15	0.65	50%
8 (P I)	My friends who learn using e-learning find it very convenient.	3.76	0.53	72%
9 (BI_2)	There is enough material provided online to study on my own	3.55	1.03	57%
10 (PEOU)	I find the e-learning system to be easy to use	4.16	0.61	88%

While most items scored a mean of three and above, suggesting that students are not averse to e-learning, there are notable aspects that need highlighting. The first item has a mean of exactly 3 indicating that most students were neutral about e-learning being more superior than face-to-face lectures. Fifty percent of the participants were neutral regarding e-learning

as compared to face-to-face lectures. This could be interpreted as students having had different experiences with online courses – some positive and some negative. Items 2 and 7 are really two sides of the same coin. There is overwhelming support to have e-learning in place, together with face-to-face lectures. Only 20% of the respondents were neutral about items 2 and 7. A clear majority (80%) of students agreed or strongly agreed to have e-learning as well as face-to-face lectures.

Students agreed that there was not enough face-to-face interaction between the instructor and students (item 3), which may be regarded as a negative view of the e-learning system. This item alone suggests that students desire the physical interaction of face-to-face learning. It is not surprising that this interpretation is corroborated by the common themes highlighted in the write-in comments (responses to open-ended questions) quoted below:

> *You don't get to see or know most of the students taking the class online. You do feel alone and not able to ask a question in the discussion forum for fear that I might look silly.*
> *Sometimes, e-learning is better when you don't have to learn technical stuff, like programming etc." With technical stuff you need to have someone there to discuss it live.*

The fourth item in the table indicates that students clearly find it easier to obtain material from the web or some form of online material to be made available. This could be due to having it stored conveniently on the server for easy access as opposed to having printed material to be filed physically. Anecdotal evidence suggests that many students are reluctant to read their textbooks and rely heavily on the slides that are made available online.

Items 5 and 6 were both coded to reflect the positive aspect of e-learning. Both items have positive inclination towards e-learning with means of 3.56 and 3.70 respectively. Students also observed the benefits of e-learning when their peers used the system (item 8). This observable benefit served as encouragement to them to use the system, if not already using the system.

Most respondents (86.7%) made use of e-learning systems frequently. Off those respondents who used e-learning system frequently, 56.7% of

them felt that e-learning tools (Moodle) made available sufficient material for them to be able to study on their own (item 9). These students would most likely fall in the category of independent learners.

Table 4 shows the results of correlation analysis which indicate the smallest within-factor correlations for e-learning as: perceived usefulness = 0.86, perceived ease of use = 0.84, peers' influence = 0.64 and behavioural intention = 0.73.

Table 4 indicates that there is a strong correlation between the items that contribute to the construct, attitude and the intention to use and accept the e-learning system. Of the seven attitude indicators only four (PU1, PU2, PU6 and PEOU) of them appear to influence the choice of using the e-learning system.

The indicator, peers' influence, appears to contribute to student subjective norm and therefore affect the choice of e-learning system positively confirming the TRA model.

A further confirmation of the intention to use the e-learning system is suggested by the question, "would you prefer to study at your place of residence if you had full access to e-learning tools?", about 58.3% of the responses were positive while the other 41.7% felt that attending lectures was important for them even if they have full access to e-learning tools.

What has been shown clearly in this study is that both modes of instruction are valued within the context of the discipline of IST. While a few students would prefer one or the other, it is possible that these students have different learning styles that instructors should cater for.

Table 4: e-Learning Correlation Matrix of the external variables and BI

	PU1	PU2	PU3	BI1	PU4	PU5	PU6	PI	BI2	PEOU
PU1	1									
PU2	0.63159	1								
PU3	-0.66103	-0.35219	1							
BI1	0.731362	0.46814	-0.92167	1						
PU4	-0.86177	-0.6032	0.632707	-0.71115	1					
PU5	-0.19893	-0.38716	0.325996	-0.27467	0.231533	1				
PU6	0.59645	0.264154	-0.21525	0.296041	-0.53365	0.072227	1			
PI	0.647565	0.329709	-0.58277	0.585408	-0.75865	-0.25559	0.266862	1		
BI2	0.785205	0.541729	-0.57097	0.614437	-0.83541	-0.17618	0.424813	0.698983	1	
PEOU	0.844678	0.589111	-0.57625	0.687718	-0.74252	-0.12115	0.582127	0.460635	0.718648	1

Discussion

The results show that both modes of instruction are acceptable to students. In the present environment of digital media and communications technologies there appears to still be a demand for and an affinity towards face-to-face lectures. There may be many reasons for this; one that has been researched for a long time is the influence of learning styles exhibited by the different students. Similarly, there is no doubt that e-learning is valued tremendously by the students. Since e-learning is already an essential part of our present-day learning environment, instructors have to understand and use it to its full potential. It must be noted, however, that one of the key findings regarding the perceptions of e-learning was students' strong desire for interaction among students during e-learning. However, 58.3% respondents agreed that they would prefer to study on their own if they have full access to e-learning tools. In this case, however, it would appear that students do value e-learning over face-to-face lectures. This research has shown that there is no overwhelming preference for one or the other mode of instruction. What has been shown clearly in this study is that both modes of instruction are valued within the context of the discipline of IST. While a few students would prefer one or the other, it is possible that these students have different learning styles that instructors should cater for.

One of the limitations in this study is that lecturer or instructor perceptions were not considered regarding the use of e-learning as opposed to face-to-face lectures. Additionally, the way the course was managed or designed online may have influenced students' perceptions of e-learning. Of-course if lecturers are averse to e-learning then students' experiences will be affected negatively.

Conclusion

This study sought to determine the perceptions of students regarding their views of e-learning as a replacement to face-to-face lectures. It has been shown that students valued both modes of teaching and learning– e-learning and face-to-face lectures. The results are consistent with Delaney *et al.* (2011) and Gysbers *et al.* (2011) findings.

The main contributions of this study are twofold. First, it successfully uses an adaptation of the original TRA to examine the students' perceptions and behavioural intention regarding e-learning and face-to-face lecture

attendance. The findings explain that both perceived usefulness and perceived ease of use have important influences on behavioural intention to use e-learning and to attend face-to-face lectures. Second, this research reveals that interaction is vital for effective learning to take place and that students differ in their learning styles. Before considering implications for instructors, we should note two limitations of this study. Firstly, this article presents the findings and their implications obtained from a single study that targeted a particular student group in the university. Thus, caution needs to be taken when generalizing these findings to other student groups. Second, the course may not have used sound pedagogical principles in implementing the course as a fully online course thus inevitably subject to negative perceptions. These findings have several implications for instructors of both e-learning and face-to-face lectures. Instructors, should recognize that the same e-learning systems may be perceived differently by students and then improve student behaviour by improving the techniques of e-learning and the processes by which they are realized. Since students have become generally more independent learners and more dependent on digital devices, it would be wise to develop self-regulated or student centred learning, which e-learning embraces. If students still continue to attend face-to-face lectures even as e-learning grows in their scope and accessibility, their reasons must be understood and teaching/learning methods adjusted and modified in order to provide a richer learning experience. It should also be pointed out that what is valid about the relationship between lecture attendance and on-line materials for one discipline may not be valid for another. Certainly, this association may even vary from instructor to instructor. If personal interaction is vital to a specific course then what we need to extract is the added value of the face-to-face lecture and seek to build on this aspect.

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E-Learning in Place of Face-to-face Learning

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