An Investigation of Factors Responsible for Sustaining Students Motivation in E-Learning System

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Abstract

An e-learner is more at risk of being demotivated because of limited/no face-to-face interaction with his/her instructor and class fellows. The purpose of this research study was to analyze the status of attention, relevance, confidence and satisfaction of students while studying in an e-learning system. The ARCS model, i.e., named after its four main factors: Attention, Relevance, Confidence and Satisfaction, was used as a theoretical framework for collecting information from students about various aspects in e-learning system which motivated them to learn. The research study involved phenomenological inquiry method. The population for the research study was all the students of a public sector university of Pakistan using e-learning system. Convenience sampling was used to approach twelve participants for data collection for the study. The data was collected through semi-structured interviews. The memos and audio-recording helped the researcher during the data collection to record responses, body language and facial expression of participants. Axial coding was used to analyze the data. The students were of the view that e-learning system is very helpful to continue education while doing job.The study recommends to use online synchronous mode of communication frequently to build a virtual bond among students and their teachers.

Keywords: Online education, e-learning, synchronous communication, asynchronous communication, Intrinsic motivation, extrinsic motivation

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Introduction

The pedagogical approaches in 21st century promotes student-centered teaching-learning process and development through lifelong learning. To meet the challenges of 21st century such as globalization, population explosion and technological advancement, there is a need to rethink about the ways and modes of acquiring necessary skills and knowledge. It is the need of the time to modify the learning modes for acquiring knowledge and skills as well as to manage information efficiently within available the resources. Now, the e-learning and online learning are being used along with traditional face-to-face and distance learning system to provide education to students.

E-learning involves delivery of learning materials via internet, intranet, satellite broadcast, interactive TV, audio/video tape and CD-ROM. The students attend the learning material in e-format and communicate with the teacher online. In an e-learning system, communication can happen in two different formats: synchronous and asynchronous. In asynchronous communication, students can acquire information at any time and in any place; it includes instructional websites, email and online discussion forums. The synchronous method where teacher and students are online at the same time; teacher and student interact in real time for teaching and web chats (Ramaha& Ismail, 2012).

E-learning involves continuous access to learning. Learning in the e-learning system is more self-directed. In e-learning, limitations associated with distance learning systems such as time and space are overcome. With the help of rich number of online resources, it also helps to guide about relating the learning with the society and apply it in real-life situations (Cakmak, 2010).

E-learning can be helpful to provide knowledge and skills to large number of people at their doorsteps. Just like the trend for information and communication technology (ICT) around the globe, the people in Pakistan are learning electronically by using internet and watching online material. Formally, e-learning system is adopted by Virtual University of Pakistan and Allama Iqbal Open University, Islamabad for delivering lectures and providing education through radio, CDs, broadcast television, internet and Learning Management System (LMS).Allama Iqbal Open University, Islamabad (AIOU) provides education to masses through open and distance learning. AIOU, besides using manual learning process i.e., to send the books, notes and CDS of lectures through their regional offices and postal services, is now working to shift

to e-learning. Virtual University of Pakistan was established by Government as the public sector university in 2002 with a mission of providing affordable and high standard education to students by using the modern technologies (Ali, Ahmad, Sheikh & Bukhari, 2011). Other universities in the country are also working to shift towards e-learning system to educate masses of people.

Motivation is a driving force which urges a person to do a task. Motivation occupies a significant position in the learning process. An e-learner is isolated from traditional face-to face setting of the classroom. He/she is apart from his/her institution, teachers and class fellows thus he/she is more vulnerable to be demotivated. Motivation helps a student to learn by involving in the teaching-learning process. It also assists in overcoming stress which a student feels during the study process. By independently accessing and using the learning material available online, an e-learner can become a self-directed learner (Simpson, 2012).

A number of theories such as expectancy theory, goal theory and attribution theory explain the factors affecting motivation and process of motivation. These theories can help a teacher to develop strategies for motivating students for learning. However, there are no fixed set of rules/procedures of motivation to follow; these theories serve as general guidelines that can be used according to demand of a particular situation while planning for instruction (Hodges, 2004).

This research paper aimed at describing intrinsic and extrinsic sources of motivation which inspire students for learning in an e-learning system.

Review of Literature

E-learning utilizes digital resources such as visual, auditory and text-based, to provide students learning material. Daly and Pachler (2010) defined e-learning as a system of learning in which people learn using technology without constraints of time and space. These resources can be shared with teachers and class fellows anywhere and at anytime. E-learning can meet the more variety of needs of people however; e-learning can be more challenging and less motivating than face to face learning system (Khan & Jumani, 2012).

In order to successfully achieve the outcomes of an online program, faculty must actively involve students in the learning process so that they can acquire knowledge (Guillot, 2003). An e-learning technology that appeals students' interest can motivate a student to use it. Providing students training in using the technology for learning can contribute to

students' success in the learning process. In addition, use of technology does lead to improvement in students' understanding and achievement in the coursework as there is a positive correlation between the frequency of using the e-learning technology and course work performance (Chen, Little, Ross & Zhao, 2012).

It is essential to relate learning experiences of students to their needs. Love and Fry (2006) concluded from a research study that when learning is integrated with students' learning experiences then it ensures the active participation of students in the learning process. Hedges (2004) also suggested that relevant learning experiences and provision of feedback can help in motivating the students. Keller (2008) highlighted the primary areas for motivating e-learners: (1) gaining learner attention, (2) making the learning experiences relevant to the learning goals and priorities, (3) building the confidence to the student for establishing goals and working to achieve those goals (4) the feeling of satisfaction during the learning process.

The sources of motivation can be categorized as intrinsic and extrinsic sources of motivation. Intrinsic motivation involves performing a task for internal desire like personal satisfaction or enjoyment. Extrinsic source provides motivation to perform a task for rewards and incentives. The most desirable form of motivation is intrinsic motivation (Hodges, 2004).

Theories regarding students'motivating for learning such as Time Continuum Model and ARCS model were proposed well before the rise of internet and e-learning, but still these theories are used to design motivating instructional material in e-learning (Simpson, 2008). Some people may opt for the organized and systematic approach of Keller; however, the goal of both theories is the same i.e., motivating the students for learning. Using any of the theories can help to motivate students for learning (Hodges,2004).

Hartnett, George, and Drone (2011) found that student motivation in online learning has a complex nature; it is multi-dimensions and sensitive to the situation at hand. Kikuchi (2006) conducted a case study to examine various motivation factors for adult working Japanese e-learners. He found that group work activities affect students' motivation for learning. It is difficult to assess the motivation of e-learner as motivation is internal process however, collecting information about learners' actions and their perception about their motivation for learning can be a useful source (Ramaha & Ismail, 2012). Knowles and Kerkman (2007) through a research study, found a significant correlation between internal locus of control and relying on strategies for learning; in

addition, the students' attitude was more positive during the last week of the course than in the first week.

Motivation is a subjective element i.e., a factor which is motivating for a person may not be motivating for the other, however, an e-learning system is fair and equal for all those using it- a requirement according to the ARCS Model (falling under satisfaction category) (Baumstick, 2012).

Objectives of the Study

The purpose of this qualitative study was to analyze and interpret various factors and sources which affect students' motivation in e-learning system.

Theoretical Framework

ARCS model was selected as the theoretical framework for the study. The ARCS model is named after its four main factors: attention, relevance, confidence and satisfaction. Attention means that a leaner is engaged in the learner process. It can be achieved through the use of interesting graphics, animations and activities that may involve a suspense or conflict. Relevance encompasses consistency of the learning material with students' learning style, his/her goals for learning and the past experiences. This factor is also related to the goal theory. The goal theory asserts that establishing clear learning goals motivates the behavior of a person. Confidence involves building the trust in one's own abilities and establishing positive expectations for success. Self-efficacy (the belief that one is capable of performing to achieve goals) and attribution theory (a learner may attribute his/her success to himself or to reasons external to him) has links to this factor. The fourth factor 'satisfaction' deals with positive feelings of learners about the learning. This factor can be linked with expectancy-value theory. The expectancy-value theory states that if a learner expects certain positive outcomes from an experience/behavior, he/she would be more likely to perform that behavior. The strategies to enhance student's satisfaction include verbal reinforcement, rewards, personal attention, feedback and avoiding negative influences (Smith, 2008). The four components of ARCS model were further categorized for intrinsic and extrinsic sources of motivation.
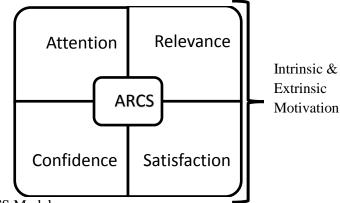
Figure 1: ARCS Model

Table 1

ARCS categories

Attention	Relevance	Confidence	Satisfaction
A1Perceptual arousal	R1 Goal Orientation	C1Learning Requirements	S1Intrinsic Reinforcement
A2 Inquiry Arousal	R2Motive Matching	C2Success Opportunities	S2Extrinsic Rewards
A3 Variability	R3 Familiarity	C3 Personal Control	S3 Equity

(Retrieved from http://www.arcsmodel.com/arcs-categories)

Methodology

The strategy used for this research study was phenomenological inquiry. The population for this the study included all students of a public sector university of Pakistan using e-learning system. Semi-structured one to one interviews were used for data collection for the research study. Convenience sampling was used to select twelve participants for the research study. The participants selected for the research study had been studying in the e-learning system for more than one semester. The researcher obtained informed consent from the participants before the collection of data. By providing assurance about keeping their names and personal information confidential, the participants agreed for interview. The researcher developed a rapport with the participants before interviews. The memos and audio-recording helped to record facial expression, body language and responses of participants. Axial coding method was used to analyze the data. The themes from the collected data were generated to discuss the findings of this research study.

Results and Discussion

The analysis of data collected through interviews were analyzed and a brief summary is given below.

Table 2

Summary of Data from One-to-One Interviews

Components of ARCS Model	Sources for Intrinsic Motivation	Sources for Extrinsic Motivation
Attention	Technological resources i.e., computer, CDs, LMS, Videos, quizzes/assignments and handouts were found interesting by all of the students. They were of the view that e-learning system was easily accessible anywhere on phone, laptop and personal computers.	All the students had to use the technological resources because they had to prepare for examination. Although the participation in online discussion forums on Learning Management System (LMS) had marks to be added in their final grade, half of the participants (50%) did not use it frequently. The reasons told by them for this, were their busy routine and lack of its significant contribution in their learning. Only 33% participants were frequently interacting with their class fellows through online platform. More than 50% of the participants preferred to use online resources to get help rather than contacting their class fellows through LMS.
Relevance	Learning material provided through Learning Management System (LMS), videos, handouts and CDs was relevant to the needs of all students. Relevant and clear examples were provided in instructional material, in addition to links for further study. About 33% of	Two participants were doing job along with their studies. They were of the view that it is convenient for us to complete assignments and quizzes while doing jobs.

	participants were of the view that the teachers of few subjects started teaching from higher level than their previous knowledge level so, the learning material becomes difficult to comprehend in that case. The students wanted to interact with their teachers through Skype etc. to cover this gap. All the students were sure that the provided learning material had benefits and applicability in their practical life.	
Confidence	All the participants set learning goals which drive them through the learning process; these goals were related to getting good grades and completing their studies. Only two participants mentioned that they have a goal to get a good job after completing the programme. All the participants were confident that they will achieve their learning goals.	Almost 90% participants mentioned that emotional and financial support from their family gave them confidence to continue their education through this platform.
Satisfaction	The participants mentioned that when they contacted a teacher for any difficulty/confusion in learning, their teachers guided them within half an hour to one day depending upon the teacher. 90% of the participants said that they got a timely response from their teachers. The participants were satisfied by the prompt response of their teacher. However, 30% students mentioned that they faced difficulty in solving the quiz/assignment questions of some subjects because those were too difficult for them to solve.	Students were satisfied with the support provided by their teachers and administrative staff for resolving the issues related to e-learning system such as roll no. slip issue, problems related to fee voucher on Learning Management System (LMS), assignment/quiz submission issue etc.

While looking at the **intrinsic sources of motivation** for e-learners, the various factors responsible for intrinsic motivation of e-learners were discussed under four **major themes**: **attention, relevance, confidence and satisfaction**. The e-learning system using a variety of technological resources i.e., Learning Management System (LMS), videos, assignments/quizzes and handouts, captured **attention** of students. All the participants were motivated to learn and complete their degree programs through e-learning system. The students said that they had clear learning goals and, they were **confident** to achieve them. The learning goals of the participants were related to getting good grades, completing a degree program and getting a good job in future (mentioned by only two participants). The learning goals mentioned by the participants were mostly short-term in nature i.e., not related to understanding and subject expertise. As far as, instruction was concerned, all of the participants were agreed and **satisfied** that the guidance was provided in time by their teachers. Most the participants perceived that their teachers provided guidance in learning with **relevant** and clear examples; the students were provided reference of additional material where they can get help to understand the concept. However, some of the students felt difficulty in solving the questions of quiz/assignment of some subjects because those questions were too difficult for them to solve. The participants also told that they had limited interaction with their instructors through online platform. It appears that the teachers of those specific subjects might have limited information about the previous knowledge and understanding of their students, therefore the assignments/quizzes developed by them were challenging for students.

The students were sure that the learned material was **relevant** and beneficial in real-life setting. However, some teachers expected very high from students and started teaching from the level higher than that of students. It appears that those teachers had lack of information about the previous knowledge and needs of students. The teachers interacted with their students through learning management system (LMS) and answered the questions asked by students within half an hour to one day. Only few participants were interacting with their class fellows through online platform. Although students had interaction with their teachers through leaning management system (LMS) in case of any query or difficulty, they wanted to interact with their teachers through Skype or similar software on daily, weekly or monthly basis so that they can further get help from their teachers.

As far as **extrinsic sources of motivation** were concerned, there were various factors which motivated e-learners to learn. The students were getting support and motivation to learn from their home and university administrative staff equally well. Almost 50% participants were not frequently interacting with their class fellows through learning management system (LMS), although discussion on LMS contributed marks in their final grade. The reason for this was that they were very busy in coursework, attending video lectures, quizzes and assignments; they also did not find interacting with class fellows very significant for their learning. More than half of the participants preferred to get help from online sources instead of interacting with their class fellows. The participants were of the view that e-learning system was very helpful to continue education while doing job.

Conclusion

The present study revealed detailed information about various factors of e-learning system which motivated students for learning. Keeping in view the components of ARCS model, it was concluded that using variety of sources in e-learning system motivated the students intrinsically and extrinsically. The students received guidance for their teachers in time. The students also set learning goals which motivated them to progress their learning; however, it was noticed that these learning goals were short-term in nature and related to external reward instead of some intrinsic source of motivation. The students were extrinsically motivated because of their parents, teachers and administration staff of the university. On the basis of problems highlighted by students, it is recommended that the e-learning system may use some synchronous modes of communication for interaction among teacher and their students on daily/weekly/monthly basis so that they can know about expectations and needs of each other. It would help to bridge the physical distance present between them. Further, it would also contribute to provide need-based guidance to students in their learning process.

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