

A Study of Benefits and Limitations of e-Learning-A Learner's Perspective

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Abstract

This paper contributes to the understanding of the learners' perception on the major benefits, limitations of online learning and their impact on evaluating the effectiveness of online programs. The study is based on a self-administered questionnaire with learners enrolled to higher education in private and government universities of Chennai region of Tamilnadu, India. The limitations and benefits identified in online learning offers a positive effect on the evaluation of the effectiveness of online program. Additionally the impact of learning goals and self-efficacy as learner characteristics on the effectiveness of online learning has been explored in this study. Based on prior literatures, learning goal is one of the attributes of self-regulatory aspect which is possessed by successful learners. Learning goal orientation as discussed in this study focuses on intrinsic goal orientation aspects. A causal model is introduced to study the impact of learner characteristics on perceived satisfaction of learners and the impact of benefits, limitations of online learning features on the overall effectiveness of the online learning methods.

Key Words:Online learning, benefits, limitations, effectiveness, learning goals, self efficacy, higher education.

1. Introduction

Presently higher education in India is experiencing a major transformation in terms of increased accessibility. With technology changing at a rapid rate, innovative ways of obtaining and sharing information, knowledge are being developed and applied to the higher education setting. Educational institutions are offering courses online or classes using a mix of face-to-face course delivery and online elements. Almost all courses delivered by universities have some online component, using web-based technology to either to facilitate delivery of course contents or towards assignments, assessments (**Allen and Seaman, 2011**). Considering the growing importance of online learning programs, it becomes critical to understand the benefits and limitations as perceived by the learners' and further act upon the improvement areas for a successful implementation of online learning. Online learning has the potential to offer many advantages to all the stakeholders such as learners, instructors, management, service providers etc. while these advantages attract student enrollment, there are associated limitations as well. Realizing the existence of deficiencies in the online learning program, educational institutions can initiate corrective actions starting toward improving the effectiveness of the programs.

2. Research Objectives

1. To study the major limitations and benefits of online learning
2. To study the impact of perceived benefits and limitations on effectiveness of online learning
3. To study the impact of learner characteristics (self-efficacy and learning goals) on their perceived satisfaction
4. To evaluate whether all the measures fit the recommended value, indicating a good fit of the structural model for the collected data.

3. Review of Literature

Based on review of prior literatures, the various self-regulatory attributes are self-efficacy, goal orientation (Intrinsic, extrinsic), Internet self-efficacy, time management, study environment management etc. (**Lync et al. 2004, Sharma et al. 2007**). Intrinsic goal orientation is "the degree to which a learner participates in a learning activity in order to achieve a personal challenge, satisfy own personal curiosity, and/or attain personal mastery" (**Lynch et al. 2004**). Extrinsic goal orientation refers to the degree to which a learner participates in any learning activity for reasons such as performance, rewards, promotion, and approval/ recognition from others (**Lynch et al. 2004**). Research on academic self-regulation reveals that successful learner's tend to have effective self-regulatory characteristics such as self-efficacy and intrinsic goal orientations which are related to learning outcomes. Learner with a high learning-goal

orientation attempts to prove his/her competency making desperate attempts towards acquisition of new skills (Academic, computer, internet skills) and knowledge for the sake of learning and to demonstrate mastery of a situation (Chyung et al, 2010).

Definition of self-efficacy is not just restricted to the measure of ICT skills but a comprehensive term which refers individual's capabilities to be self-organized and carry out actions to achieve desired performance levels (Bandura A, 1997). Jung-Wan Lee, Samuel Mendlinger (2011) investigate the effect of perceived self-efficacy on learner satisfaction along with other factors like perceived usefulness. Technology acceptance model (TAM) states that the end users tend to adopt and continue to use new technology when the Perceived usefulness and perceived ease of use are positive. The findings of the survey conducted in a Korean university and students of a US university, show that task specific self-efficacy positively impact the student satisfaction.

Xu, H., & Ebojoh, O. (2007) have done a qualitative study on the state of online learning in Central Michigan University in the context of higher education and put for their findings on how online learning programs can be made effective. The assessment methods, benefits and limitations are identified as key factors impacting the design delivery which has an effect on the evaluation of the effectiveness on online program. Benefits of e-learning and positive perceptions of e-learning among learners have been confirmed in number of research studies.

Aithal et al, 2016 have studied certain global education models and discuss on the advantages and disadvantages of online education systems. Some of the online education models studied here include profit based online programs, non-profit online programs, massively open online courses, mobile learning etc. Omnipresence of abundant information is considered to be exceptionally important advantage. Flexibility in work-life balance, travelling etc. attract the working population. Lifelong learning is yet another aspect which is considered as a very positive aspect from learners of all age groups. From learner point of view, convenience, time savings, reduced cost are hailed as major positive aspects which push them towards adoption and continued use of e-learning.

Conkova, 2013 has enlisted the advantages and disadvantages of training programs in corporate context. Blended learning style could have possibility at least partially to consolidate strengths of online and traditional learning and other weaknesses to improve the corporate training's learning performance and trainees' satisfaction.

Advantages

- student-centered learning
- Self-paced learning
- Flexibility of time and location

- Cost-effective
- Attracts global enrollment
- Enhanced accessibility to knowledge
- Archival capability of information

Disadvantages

- Lack of instant feedback from instructors
- Increased preparation time for the instructor
- Not convenient to subset of stakeholders
- Causes more of frustration, anxiety, and confusion

Based on their study of previous literature, **Deepali Pande et al, 2016** list down some of the advantages and disadvantages around the adoption of e-learning in education.

Advantages

- Time and location flexibility
- Easy access to huge amount of information
- Eliminates barriers of fear
- Cost effective
- Takes into consideration the individual learners differences
- Self-paced learning
- Helps compensate for scarcities of academic staff, including instructors or teachers as well as facilitators, lab technicians etc.

Disadvantages

- Sense of remote feeling, isolation when learners are not active
- Lack of direct interaction with instructors
- Lack of required skills has an impact on learning
- May lead to piracy and plagiarism

4. Methods

4.1. Data Collection and Sample

In this study, learner responses were gathered using a structured questionnaire circulated in the form of electronic survey. Five-point scale was used to increase the sensitivity of the measure. Data on the online capabilities offered and the extent of usage by the learners and instructors was gathered. The participating respondents are obtained from the various departments and colleges enrolled to higher education in the private and government Universities of Chennai, Tamilnadu, India.

4.2. Data Analysis

Data collected from 150 learners which includes 114 full-time learner and 36 Part-time learners were analyzed using the Statistical Package for Social Sciences (SPSS). Statistical techniques like reliability analysis, was used to evaluate the quality of the questionnaire

4.3. Research Methodology

4.3.1. Sample

The sample comprises of online users which includes full-time and part-time learners and descriptive in nature for the study. The sampling technique that is used for the study is simple random sampling. A group of respondents were selected through simple random to avoid any sort of bias in the research and then the questionnaire was circulated to them in the form of electronic survey for which response was collected. Survey method of primary data collection using questionnaire adopted for collection of primary data.

4.3.2. Data Analysis and Interpretation

SEM was used to analyze the collected data and evaluate the suitability of the model. Cronbach's alpha scores were calculated to test the reliability and consistency of each individual factor. The findings show that the overall reliability score is 0.8291 as shown in table1 which is above the minimum acceptable level of 0.8.

Table 1: Reliability Statistics

Cronbach's alpha	No of items
0.8291	61

5. Results and Discussion

5.1. Structural Equation Modeling (SEM): Model Fit Assessment

Structural equation modeling (Figure1) was used to analyze the model fit based upon the primary data that was collected. This model is held as the most useful for assessment of causal relationship between variables and for verifying the suitability of the estimated model. For evaluating the model fitness, emphasis was given to chi-square value, Probability value, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit index (CFI), RMR and Root mean square error of approximation (RMSEA) (Table2).

As per the result shown in table3, Chi square statistics with p value of 0.071 which is greater than 0.05 shows good fit of the model. The GFI of this study was 0.967 and AGFI was 0.926 which is more than the recommended value of 0.90 representing a good fit. The CFI value of 0.971 also means a good fit. And the RMR = 0.068 and RMSEA=0.045 indicate an absolute fit of the model. Goodness of fit indices support the estimated model fit and these emphasized indices indicate the acceptability of this structural model.

The variables used in the structural equation model are

I. Observed, endogenous variables

- Learning goals
- Self-efficacy
- Perceived satisfaction

- E-learning effectiveness

II. Observed, exogenous variables

- Benefits
- Limitations

III. Unobserved, exogenous variables

- Learner characteristics
- e1, e2, e3 and e4: Error terms for availability of funds, learning attitude, Perceived satisfaction and adoption respectively.

Table 2: Number of Variables in the SEM

Total variables in this model	11
Total observed variables	6
Total unobserved variables	5
Total exogenous variables	7
Total endogenous variables	4

5.2. Significance Tests of Individual Parameters

As per table4, unstandardised coefficient of benefits on eLearning effectiveness is 0.133 which represents the partial effect of benefits on eLearning effectiveness, holding the other path variables as constant. The estimated positive sign implies that such effect is positive that eLearning effectiveness would increase by 0.133 for every unit increase in benefits and this coefficient value is significant at 1% level.

Unstandardised coefficient of limitations on eLearning effectiveness is 0.441 which represents the partial effect of limitations on eLearning effectiveness, holding the other path variables as constant. The estimated positive sign implies that such effect is positive that eLearning effectiveness would increase by 0.441 for every unit increase in benefits and this coefficient value is significant at 1% level.

Based on standardised coefficient, learner characteristics on perceived satisfaction (0.858) is most influencing path in this SEM model.

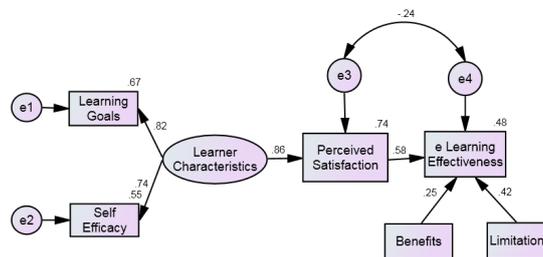


Figure 1: Structural Model - Confirmatory Factor Analysis

Table 3: Model Fit Summary of Structural Equation Model

Fit Indices	Results	Suggested values
Chi-square value	14.428	-
Pvalue	0.071	>0.05(Hair et al., 1998)
Goodness of Fit Index (GFI)	0.967	>0.90(Hair et al., 2006)
Adjusted Goodness of Fit Index (AGFI)	0.926	>0.90(Daire et al., 2008)
Comparative Fit index (CFI)	0.971	> 0.90(Hu and Bentler, 1999)
RMR	0.068	< 0.08(Hu and Bentler, 1999)
Root mean square error of approximation	0.045	< 0.08 (Hair et al., 2006)

Table 4: Variables in the Structural Equation Model Analysis

Variables			Unstandardised co-efficient	S.E.	Standardised co-efficient	T Value	P Value
Self Efficacy	<- -	Learner characteristics	3.871	.393	.741	9.851	<0.001**
Learning goal	<- -	Learner characteristics	2.128	.191	.818	11.117	<0.001**
Perceived Satisfaction	<- -	Learner characteristics	2.466	.210	.858	11.769	<0.001**
eLearning Effectiveness	<- -	Perceived Satisfaction	1.391	.189	.581	7.375	<0.001**
eLearning Effectiveness	<- -	Benefits	.133	.031	.251	4.308	<0.001**
eLearning Effectiveness	<- -	Limitations	.441	.061	.423	7.279	<0.001**

5.3. Finding and Suggestions

The findings show that Cronbach’s alpha score is above 0.70 (Table1). It could be very well concluded that the hypothesized three-factor model fits the sample data. Based on the viability and statistical significance of important parameter estimates; the considerably good fit of the model (CFI, GFI, AGFI, NFI, IFI, TLI, RMSEA) (Table3).

The results showed: 1) the positive relationship between benefits and eLearning effectiveness and 2) the positive relationship between limitations and eLearning effectiveness. Based on the findings of the study there is a mixture of factors that influence the effectiveness of online learning programs which includes the intrinsic goal orientation, benefits and limitations as perceived by the learners. Each of these variables have either a positive effect on the effectiveness of online learning. An effective e-learning course design should be developed considering the learner characteristics to yield better learning outcomes.

6. Conclusion

Online education has witnessed tremendous growth in the recent times, making it one of the most analyzed and discussed subject in higher education system The benefits and limitations of online learning are identified and discussed in this paper. The main benefit of online learning looked upon by most learners is the flexibility of time and location as discussed in the prior reviews. While the major limitation experienced by learners as such is cut down in interaction with

co-learners and instructors. Measuring the impact of learning goals on perceived satisfaction will help educational institutions to identify those learners who are not self-regulated i.e. those who report low score on goal orientation. This will help to push those learners towards better performance. Additional research on a large scaled survey would enable academicians and providers to make better decision on improving effectiveness of online learning understanding the self-efficacy of the learners. Additional research involving varied samples, technologies will help highlight more areas of challenges faced by learners.

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