

A STUDY ON ACCEPTANCE OF E-LEARNING -AN APPROACH TOWARDS SUSTAINABLE EDUCATION AMONG STUDENTS OF UNIVERSITY OF MUMBAI

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ABSTRACT

The harshest experience like pandemic has given us different a learning experience and are a reality check of our preparedness towards life challenges. The pandemic was no different and has transformed dimensions of the educational system. Sustainable E-learning has now become the crucial part of teaching and learning process, both for online education and for Classroom learning, where they provide an additional learning support for learners. Over the last few years, sustainable learning has aimed at limiting negative impacts at the individual, social, and technological levels. For this reason, physical classrooms have been replaced by e-learning systems in order to ensure the sustainability of these systems. In addition, learning through the MOOC (Massive Open Online Course) is gaining an immense popularity since everyone many are able to improve their knowledge and skills by using these courses. Through this research paper an attempt has been made to identify factors that influence the acceptance of Sterling's 'triple bottom line model' (of Sustainable Development) and Technology Acceptance Model for developing a sustainable education for Indian Education system. A comprehensive understanding of these factors can assist education policy makers to identify the reasons for the acceptance or resistance of E-learning among Students of Mumbai University in the future and accordingly support them to enhance the acceptance of Sustainable Learning.

Keywords: E-Learning, Higher Education, Sustainability, Integration

INTRODUCTION

The COVID-19 pandemic has changed the dimensions of education system worldwide. Nowadays, higher education and sustainability are majorly recognized as interrelated concepts. In a modern world, higher education has played an pivotal position in redefining education in terms of research and teaching. A challenge is to reassess disciplines and institutional practices to initiate a development to achieve this task (Corcoran and Wals 2004).

The term "sustainability" is widely used to support a long-term innovation processes that benefits the triple bottom line; people, environment, and economy (Weaver et al. 2000). Recent studies on Sustainability in Higher education has found the beginning of wider and more systematic approaches (Wals 2014). Major Changes in social, technical, and environmental, global and local have provided various opportunity due to the availability of flexibility of learning process, use of technologies, and new approaches to teaching and learning. Hence, they constitute key factors in education for sustainable development (Bell et al. 2017). As a result, institutions are reshaping and reconsidering their education, research, operations, and community outreach activities (Wals 2014).

In order to create the way for a sustainable development in higher education, the implementation of E-Learning appears to be one important aspect in a twofold way: First, implementation of E-Learning can be considered as a systematic approach to contribute sustainability in higher education. Second, Such implementation of E-Learning provides tools that help deliver and promote teaching and learning about sustainable development in an innovative way. Demographic boundaries or other limitations for global development of Sustainable education

can be dismantled. This is especially relevant for the developing country like India where E-Learning can serve as a booster for opening up education and training systems to the wider world (Srivastava 2013).

Nowadays Information technologies are being replaced by smart technologies that are paving way for the development of sustainable interaction between people. Many universities are signing international declarations and are committing to merge sustainability into their educational Curriculum and research activities. (Cebrián and Junyent, 2015) Thus, sustainable e-learning is essential to ensure higher education is in a position to be able to adapt to new technologies or any future crisis. Therefore, there is still a lack of definition of sustainable e-learning in the literature and hence, it is essential to identify the important factors that may or may not affect its acceptance in future.

LITERATURE REVIEW OF THE STUDY

Despite the fact that e-learning provides emergency remote instruction during the epidemic, at least 500 million pupils cannot access e-learning (United Nations, 2020). To maintain its long-term utility, e-learning must be sustainable in addition to activities for sustainable development, particularly encouraging lifelong learning. As part of the higher education sector's technology revolution, sustainable management integration is required (Abad-Segura et al. 2020).

According to (Laurie et al., 2016), when sustainability is covered in the curriculum, teaching and learning are changed at all educational levels, which also helps society as a whole grasp what sustainability means in practice. (Mulder, 2006) in his research work stated that Sustainable development is not only about acquiring extra knowledge but the attitude of the student is also important to access its benefit.

More specifically, a considerable amount of resources, face-to-face interaction, and even student and staff mobility can potentially be superseded by the use of strategies for E-Learning and teaching. The incremental usage and affordance of E-Learning throughout the last decades has significantly contributed to its advancement and embeddedness in higher education. (Gaebel et al. 2014)

Notwithstanding the resulting accomplishments and distribution of E-Learning in higher education all over the world, it should be recognized that the upswing in access and use of technologies and Internet is not evenly distributed across all countries (Kirkwood and Price 2016)

E-Learning thus cannot be used to its full potential, often to the detriment of developing countries. Consequently, E-Learning has acquired a central position in educational strategies for developing countries. Several judiciously designed solutions exist that can be implemented to the benefit of these countries at reasonable costs. As a recent promising approach, MOOCs have entered the arena to teach and engage a global audience about topics like climate change or health (Barteit et al. 2018; Otto 2018). However, the benefits of an e-learning system cannot be maximised if learners do not use it (Alenezi, 2012; Lai, Wang & Lei, 2012, Pituch & Lee, 2006, Tarhini, Hone & Liu, 2014).

To make e-learning a useful teaching and learning tool in education, it is crucial to understand the characteristics that motivate students to use it (Sharma & Chandel, 2013).

The adoption of the Sustainable Development Goals (SDGs) in 2015 gave rise to a major push for e-learning as a means of achieving these objectives, especially goal number 4, "Quality education."

OBJECTIVES OF THE STUDY

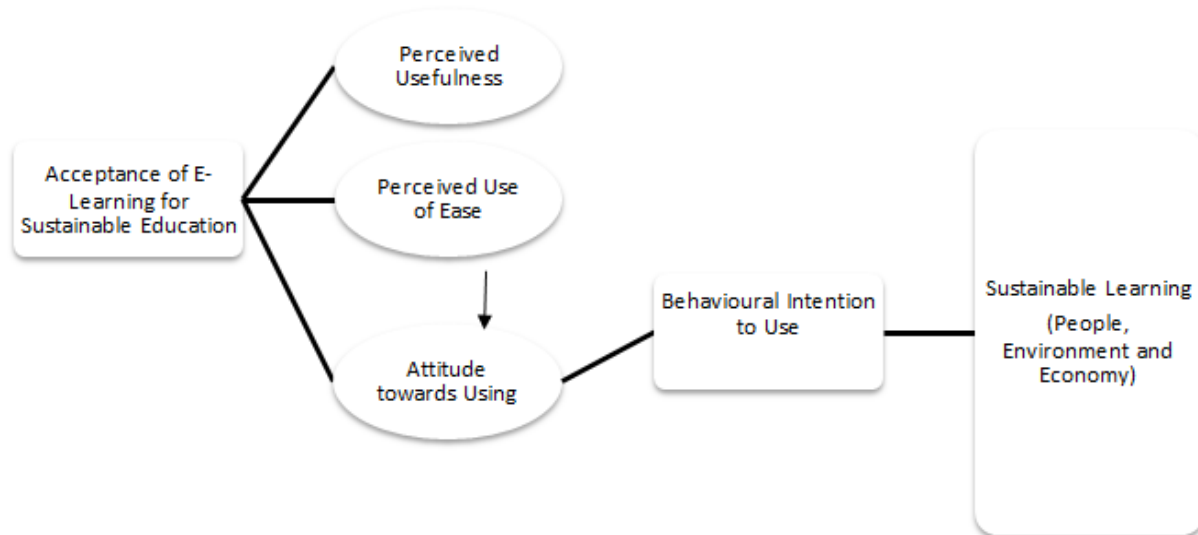
- The main aim of the study was to understand Students acceptance towards Sustainable E-Learning.
- The purpose of this study was also to identify factors influencing in the adoption of E-learning from Students perspective based on Triple bottom line Model and Technology Acceptance Model.

METHODOLOGY

The research analysis is based on Primary & Secondary data. Secondary data was collected from scholarly

books, News articles, published texts & Internet. Convenience sampling technique was used to collect primary data from 100 respondents constituting teachers and Students in university of Mumbai across Mumbai, Thane and Navi Mumbai region with help of well-structured questionnaire. Questionnaire was framed based on 5 point Likert scale and the choice ranged from Strongly Agree to Strongly Disagree. The data collected was analyzed and tested using Independent Sample T-test, One way Annova and Chi-square.

PROPOSED CONCEPTUAL MODEL



Explanation of Proposed Conceptual Model

The TAM model has become a robust model that is appropriate for predicting the acceptance of several technologies (Al-Busaidi, 2013; Al-Emran, 2018). The Technology Acceptance Model (TAM) proposed by Davis in 1989 has been employed in various research studies, and therefore, it has become quite significant in the literature pertaining to technology acceptance (Chang, Hajiyev and Su, 2017). Perceived Ease of Use and Perceived Usefulness are the most important factors in the technology acceptance model (Chen, Lin, Yeh & Lou, 2013).

According to David, 1989 **Perceived Ease of Use** refers to “the degree to which a person believes that using a particular system would be free of effort”. **Perceived Usefulness** is explained as “the degree to which a person believes that using a particular system would enhance his or her academic performance”. The basis of the model is providing other determinants to influence belief, attitude, and intention to use. TAM has influenced user’s behavioral intentions and attitude either directly or indirectly in order to assess user’s actual use of the technology (King and He 2006). Triandis (1971) defines attitude as individual characteristics which portray either positive or negative behavior and reflection of feeling and knowledge to a certain concept or subject.

Communities and nature must come to an understanding to address both present and future needs for sustainable people. This demonstrates the need for the definition to emphasize the advantages for society. According to the e-learning perspective, a sustainable e-learning programme should foster trust and student satisfaction through high-quality learning (Stepanyan, Littlejohn, and Margaryan 2013).

Natural resources that are preserved and rehabilitated are referred to as sustainable environments. The term "sustainable economy" refers to business methods that maximize financial returns while minimizing negative environmental effects. The goal of expanding e-learning content is to achieve technical sustainability, which is

described as having the financial, material, intellectual, and academic resources to meet both current and future technology demands. (Robertson 2008).

Data Analysis & Interpretation

Table 1:- Demographic Profile of the Respondents

Gender		
Variable	Frequency	Valid Percent (%)
Male	48	32%
Female	102	68%
Total	150	100
Age Group		
Variable	Frequency	Percent (%)
18 to 20 Years	53	35.3%
20 to 22 Years	39	26%
22 to 24 Years	32	21.3%
Above 25 Years	26	17.3%
Total	150	100
Type of Degree		
Variable	Frequency	Percent (%)
Diploma/Certification Courses	20	13.33%
Undergraduate Courses	75	50%
Post Graduate Courses	45	30%
Doctorate	10	6.67%
Total Total	150	100

Table 2:- Descriptive Statistics 2.A) Descriptive Statistics for E-Learning Factors

Variables	N	Min	Max	Mean	SD	Variance
Perceived Usefulness (EL 1)	150	1	5	3.61	1.142	1.304
Perceived use of Ease (EL 2)	150	1	5	3.89	1.122	1.259
Attitude to Use (EL 3)	150	1	5	3.83	1.225	1.500
Behavioral Intentional (EL 4)	150	1	5	2.20	1.21	1.47

A close analysis of the above descriptive statistics in table 2.A revealed that variable EL 2 that is Perceived Use of Ease was considered to be an important parameter by sample respondents with low degree of variation.

2. B) Descriptive Statistics for Sustainable Learning Factors

Variables	N	Min	Max	Mean	SD	Variance
People (SL1)	150	1	5	3.20	1.27	1.62
Environment (SL2)	150	1	5	3.61	1.32	1.75
Economy (SL3)	150	1	5	3.79	1.15	1.34

From table 2.B it can be analyzed that variable SL3 that is Sustainable Economy variable was having highest mean and least degree of variation according to sample respondents.

Hypothesis Formulation & Testing

1) H0: There is no significant difference between male and female with regards to acceptance of factors contributing to Sustainable Education in University of Mumbai.

Acceptance of E-Learning for Sustainable Education	Male		Female		T-value	P-Value
	Mean	SD	Mean	SD		
People (SL1)	14.39	3.09	15.29	4.44	1.198	0.002**
Environment (SL2)	10.54	3.90	10.62	3.19	0.963	0.338
Economy (SL3)	8.70	3.53	8.11	3.43	-.155	0.875

Interpretation: -Highest mean for both male & female is for the factor People which means for both of them it is important Variable regards to Students acceptance towards factor contributing Sustainable E-learning in University of Mumbai. Since p value is less than 0.01 for People the Null Hypothesis is rejected at 1% level of Significance. Hence there is significant difference between male & female with regards to Students acceptance towards Sustainable E-learning in University of Mumbai. While for other factors p value is more than 0.01 which means there is no significant difference in perception of male & female with regards to Sustainable Environment and Economy.

2) H0: There is no significant difference between male and female candidates with regards to acceptance of E-learning factors in University of Mumbai

Acceptance of E-Learning	Male		Female		T-value	P-Value
	Mean	SD	Mean	SD		
Perceived Usefulness (EL 1)	2.85	1.18	3.26	1.19	0.570	0.569
Perceived use of Ease (EL 2)	3.15	1.24	3.35	1.21	2.320	0.02*
Attitude to Use (EL 3)	3.13	1.31	3.16	1.26	2.557	0.002**
Behavioral Intentional (EL 4)	2.63	1.27	2.75	1.29	0.578	0.564

Interpretation: - Since p value is less than 0.01 the Null hypothesis is rejected at 1% level of significance for Attitude to Use Technology. Hence there is significant difference between male & female with regards to Attitude to Use Technology with regards to acceptance of E-Learning for Sustainable education in University of Mumbai. Since p value is less than 0.05 the null hypothesis is rejected at 5% level of significance for Perceived Use of Ease. Hence there is significant difference between male & female with regards to Perceived Use of Ease. While for other factors p value is more than 0.01 which means there is no significant difference in perception of genders with regards to Perceived Usefulness and Behavioral Intention to use technology.

3) H0: There is no significant difference between Age group with regards to Students acceptance of E-learning for Sustainable Education in University of Mumbai

Acceptance of E-learning	18-20 Years	20-22 Years	22-24 Years	25 & Above	F value	P Value
Perceived Usefulness (EL 1)	14.54 (4.43)	15.69 (4.38)	14.78 (4.45)	15.19 (3.68)	.576	.632
Perceived use of Ease (EL 2)	7.28 (3.31)	8.15 (2.77)	8.37 (3.60)	10.53 (3.65)	5.654	0.01**
Attitude to Use	9.84	11.53	9.81	11.69	4.128	0.008**

(EL 3)	(3.10)	(3.08)	(3.34)	(2.41)		
Behavioural Intentional (EL 4)	14.39 (4.41)	12.27 (3.98)	13.49 (4.01)	11.99 (2.99)	.479	0.531

Interpretation:-Since P value is less than 0.01, the null hypothesis is rejected at 1% level of significance with regards to Perceived Use of Ease and Attitude to Use Technology. Hence there is significant difference among age groups with respect to the Same. As indicated in the table there is no significant difference among age groups with respect to Perceived Usefulness and Behavioral Intention

FINDINGS

- The most important factor which will help Students of both the Gender in acceptance of E-Learning was identified to be Perceived Ease of Use.
- Attitude in Using the Technology is identified to be important from Students perspective for acceptance of E-learning in University of Mumbai.
- Sustainable People was identified as an important variable with respect to Sustainable Education factors which influences adoption of E- learning among Students of university of Mumbai.
- People of different age groups also feel that Perceived Ease of Use is important when it comes to adoption of E-learning for Sustainable Education.

SUGGESTION

- There is a requirement of identification of Students needs and acceptance as it will help in successful implementation of Sustainable educational change. Teachers must understand what is expected of them for such a successful change in Higher Education as this will help to benefit teacher training and student learning.
- Educational policy makers need to make a plan to adopt E-learning at the college level by providing clear cut operating procedures regarding the implementation of E-learning and how it can be effective in higher education; particularly in the emerging universities such as Mumbai University and also for the Sustainable Development.
- Strong technological infrastructure needs to be developed to ensure smooth functioning of E-learning by providing Internet and other associated technological infrastructure to Students as well as teachers.
- Increasing the number of E-learning courses gradually for offering to the students in university.
- Attracting students’ attention by making them interactive in the E-learning so that they can interact positively and understand the need of Sustainable education.

CONCLUSION

Education for sustainable development today is seen as a new direction in the field of education which can be implemented using applied models of e-learning. Though a systematic and integrated approach is required for sustainable development which will help in the creation of a flexible, healthy and sustainable society, and brings more quality, value and goals into the education system. Education for sustainable development is associated with different and specific needs of people and provides the skills which are necessary to solve problems, using methods and knowledge. Hence Education for sustainable development pays special attention to the formation of creative, analytical perspective and innovative thinking, as well as expanding opportunities for solving complex and Uncertain problems.

LIMITATION OF THE STUDY

The obtained findings, conclusions, and recommendations are limited to the acceptance of E- learning among Students of Mumbai University. The study group was selected using the convenience sampling method. Thus, the Universal acceptance of the results obtained in this research study is limited only to the students studying under University of Mumbai. Survey was conducted in a very short span of time that is from 1st October 2022 to 30th November 2022. Also, the results from a survey study may not reveal in-depth issues or challenges faced by Students as an interview study might have accomplished. However, the usage of the survey did allow for a few numbers of Students perceptions to be assessed.

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