

Attitude of senior secondary school students toward e-learning

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Abstract- *E-learning is one of the influential instructional education programmes that help students to their studies. The main aim of this investigation is to determine the attitude of senior secondary school students towards e-learning. Quantitative research method was used to conduct the study. Data were collected from 78 students by using simple random sampling technique. Sample data were collected through an Attitude scale developed and standardized by Dimpal Rani. Mean, SD, t-test and correlation coefficient were used to analysed and interpret the data. Results showed that students had low level attitude towards e-learning and gender had no effect on attitudes of senior secondary students towards e-learning and its components. The study outcome also indicated that there was a positive correlation between different factors of e learning. The results of the study were discussed in relation to the relevant literature, and some suggestions were made.*

Key Words: E-learning, Attitude, Gender, Factors of E-learning, Senior Secondary school

Introduction

The Internet has dynamic means of providing learning and research resources for students and teachers to communicate and get information (Richard and Haya 2009). Fry (2001) defines technology-based e-learning as use of the internet and also significant technologies to develop learning resources, train students, and manage courses inside any organization. E-learning or electric learning is an emerging technology which is used for providing instructions to the distant learners who could not get instructions direct from their teachers or instructors. E - leaning deliver instructions through CD-ROM, internet and various interactive multimedia. This medium of learning encourages students more to participate in any kind of learning. The major advantage of e – learning is, it has accessibility anywhere in any time if one has internet facility as well as it is cost effective also. Therefore, e- learning becomes a boon for the modern educational system and it enhances the teaching and learning quality. E-learning has been popularly using by a number of national and international organizations worldwide for better and conventional learning. Traditional learning or face to face learning is a very familiar method of teaching learning in India. But the advancement of e-learning is notably increased during the past few years. Although e-learning uses in secondary education is very limited in India especially in the government schools because of the non-availability of the proper infrastructure. Apparently, e-

learning is getting popular after the covid pandemic in the government as well as in the private schools. Hence, in the present research the researchers tried to the attitude of senior secondary school students as If attitude of the students is positive towards e-learning than it would be very helpful to foster development of e-learning in the future also.

Review of Literature

There are several studies which mainly focused on the readiness of the students to e-learning. Students' attitude is very important to make e-learning more popular and usable. Thakkar and Joshi (2017) conducted a study and they wanted to understand the attitude of diploma engineering students to adaption of e-learning by using survey method. They conducted the study on 56 students of information technology branch and used an attitude scale to gather information. The study's findings revealed that diploma engineering students had a strong preference for using e-learning. As like Thakkar and Joshi (2017), Ali et al. (2016) conducted a research of nursing students' views regarding e-learning. 120 nursing students are taking part in the study. The findings of the study revealed that students are willing to accept e-learning, however technical support and the stress of using technology are obstacles to doing so. Another researcher Dhamija (2014) intended to test undergraduate students' opinions toward the academic usage of e-learning and involved 300 learners from arts, commerce and sciences streams to execute the study. The study's findings indicated that most of the students had a good attitude toward e-learning, and there was no significant difference in attitudes between arts and commerce students or arts and science students. In the same way no significant differences were found between commerce and science students. However, significant differences have been found among students in terms of gender and rural versus urban places of residence. In contrast to this outcome, Suri and Sharma (2013) conducted a study to evaluate students' attitude in context to their gender and the result determined that there is no significant relationship between students' attitudes about e-learning and gender. Support to this result another study conducted by Rhema and Miliszewska (2014) studied the feelings and experience of students from two different Lybian university on technology aided learning and found that there was no effect of gender differences, current enrolment year, locality of student, and age on students' attitude towards e-learning. Student who had technology access possessed positive attitude towards e-learning. Zabadi and Al-Alawi (2016) carried out a study to scrutinize the attitude of university students towards e-learning and they delimited this study into university of Business and Technology (UBT). 371 students from four colleges as well as an English language centre took part in this study. The results of the study revealed that UBT participants had better attitude to e-learning but gender and technology utilization and skills create differences in their attitude. Sebnmen (2015) found in his study that gender had insignificant effect on students' attitudes regarding e-learning. Dhiman et al., (2014) explored in their study that both male and female students had positive attitude about e-learning. Despite the fact that female students have a substantially better positive attitude towards e-learning than male students. Along with gender and student attitudes about e-learning, teachers' attitudes toward e-learning are equally important since teachers play critical roles in educational environments. Kisanga (2016) studied numerous elements that can influence teachers attitudes

toward e-learning and discovered that teachers who had computer exposure also had positive attitude toward e-learning. Other criteria such as gender, qualification, and teaching experience had little effect on teacher's attitudes about e-learning. Krishnakumar and Rajesh (2011) did another study to learn about the attitudes of higher education teachers on e-learning. They discovered that higher education teachers had favourable attitude toward e-learning, but there was a difference in the approach toward e-learning between teachers who were familiar with computers and technology and those who were not.

Research objectives

The research was conducted to:

- To study the senior secondary school students' attitude towards E-learning.
- To find out the attitude of male and female senior secondary school students with respect to e-learning and its dimension (e-learning interest, usefulness, ease of e-learning and e-learning confidence)
- To find out the relationship between different factors (e-learning interest, usefulness, ease of e-learning and e-learning confidence) of e-learning of senior secondary school students.

Research Hypotheses

This study was conducted after formulation of hypotheses based on the above-mentioned research objectives:

H01 There will be no significant difference in attitude of male and female senior secondary school students with respect to e-learning and its dimension (e-learning interest, usefulness, ease of e-learning and e-learning confidence)

H02 There will be no significant relationship between factors (e-learning interest, usefulness, ease of e-learning and e-learning confidence) of e-learning of senior secondary school student

Methodology and design of the study

Sample size- This quantitative study involved 78 senior secondary school students studying in different schools in Murshidabad district, west Bengal, India. The investigator used the Simple Random sample approach to identify 47 male and 31 female students out of 78 students.

Tools used for the study- The researcher used "Attitudes towards e-learning scale (ATELS)" constructed and standardized by Rani (2008). This scale includes 65 items separated into 4 categories: i. e-learning interest, ii. Usefulness, iii. ease of e-learning and iv. e-learning confidence. The scale was distributed to senior high school students aged 14 and higher.

Statistical technique used- The researcher used percentage, Mean, Standard Deviation (SD), independent t-test and correlation coefficient for the analysing and interpreting the data.

Procedure- The survey was created online, and a link to it was disseminated to students via various mobile messaging applications. The link was circulated only to the senior secondary school students who had mobile or laptop devices and sufficient internet connectivity. Before circulating the link, the study's aims were made clear to the students. Student participation was depended on their willingness and they may choose not to participate in the survey.

Results and Discussion

Sample distribution – Table 1 demonstrate demographic factors of the respondents. A total of 78 senior secondary students participated in the study. 60.3% were male while 39.7% were female students.

Table1: Demographic factors

Gender	Frequency	Percentage
Male	47	60.3
Female	31	39.7
Total	78	100.0

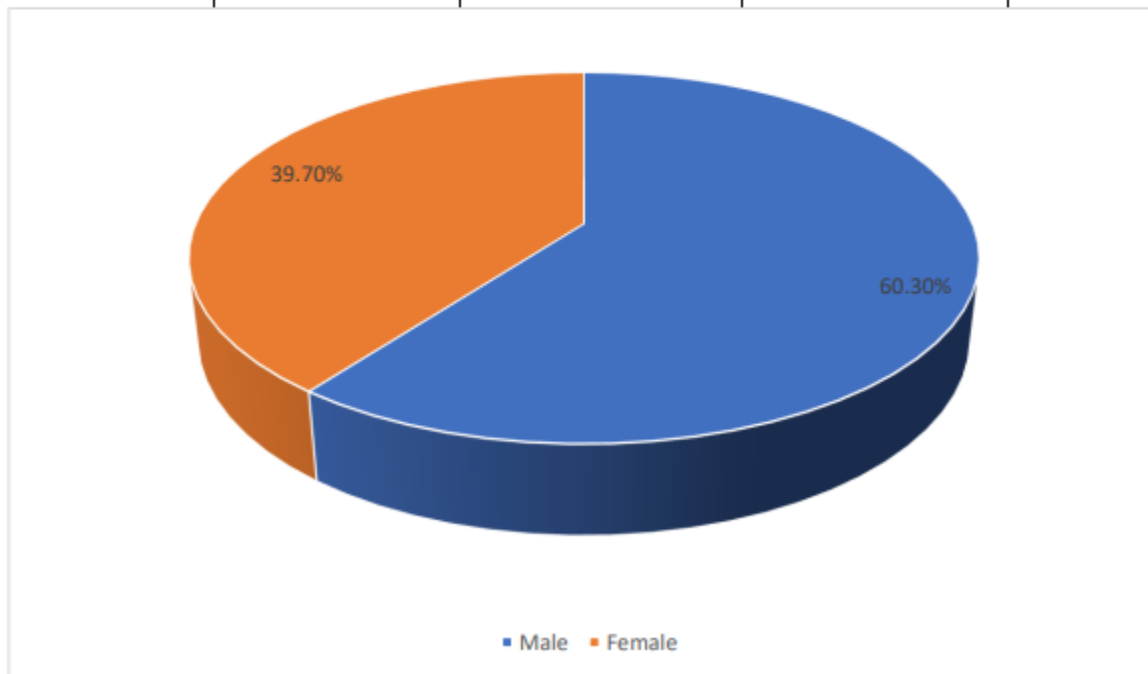


Figure 1: Respondents distribution according to gender

Statistical Results

The complete sample of students was divided into various levels of e-learning, which are outlined below:

Based on the percentile criteria stated in the Attitude of e-learning Scale manual, students were divided into five categories for interpretation i.e., extremely high, high, average, low, and extremely low attitude of e-learning. Table 2 and Figure 2 demonstrate the distribution of students based on their attitude toward e-learning, with 1.28% indicating extremely low level of e-learning, 61.53% indicating low level, and 32.05% indicating average level of e-learning. Only 5.12 % responses are possessed high level of e-learning. No student's attitude is found extremely high level towards e-learning. Berteau (2009) described e-learning and stated that a positive attitude increases the likelihood that students will accept the new learning system.

Table -2: Classification of students on level of e-learning

Level of E-learning	No. of Students	Percentage of Students
Extremely Low	1	1.28%
Low	48	61.53%
Average	25	32.05%
High	4	5.12%
Extremely High	None	None
	N=78	

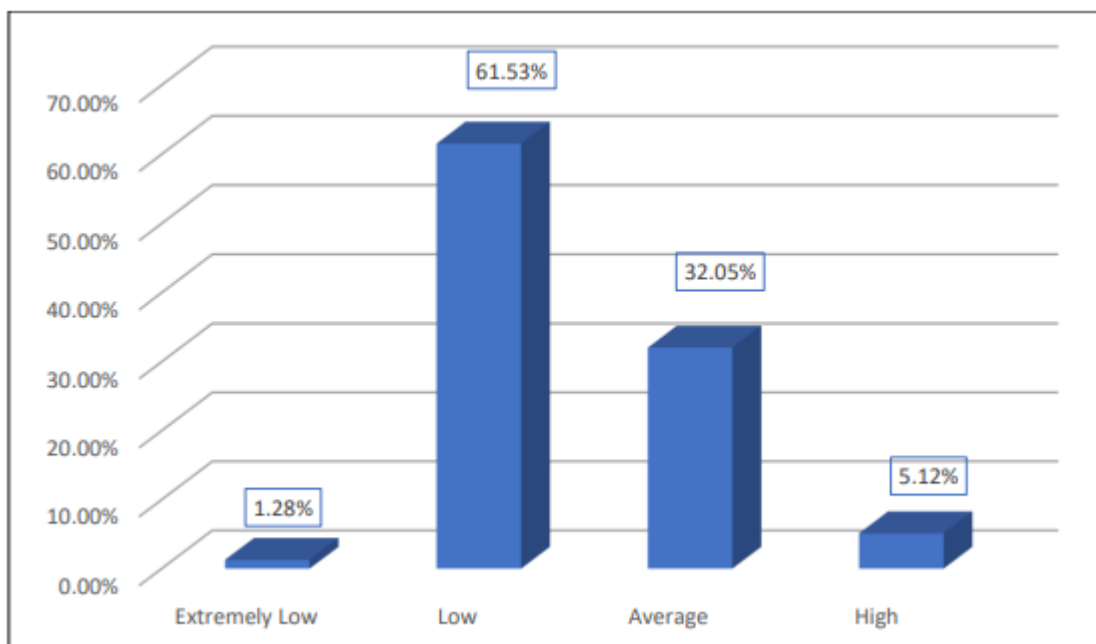


Figure 2: Bar graph showing the Classification of students in relation to the level of e-learning.

Hypotheses Testing

Hypothesis 1 – There will be no significant difference in attitude of male and female senior secondary school students with respect to e-learning and its dimension (e-learning interest, usefulness, ease of e-learning and e-learning confidence)

To test the above-mentioned hypothesis independent t-test was used and the results are presented in the following table.

Table 3: Results of independent t-test between attitudes towards E-learning and its dimension (e-learning interest, usefulness, ease of e-learning and e-learning confidence) and gender of the senior secondary school students.

VARIABLE	MALE (47)		FEMALE (31)		Mean difference	t-value	df	p-value	Sig.
	Mean	Std. Dev.	Mean	Std. Dev.					
Overall E-learning	213.72	20.518	216.48	21.618	-2.760	-.569	76	>0.05	NS
DIMENSION									
E-learning Interest	43.57	5.863	43.19	5.868	.381	.281	76	>0.05	NS
Usefulness	87.26	8.771	87.52	8.778	-.261	-.128	76	>0.05	NS
Ease of E-learning	46.23	4.631	47.29	4.444	-1.056	-1.002	76	>0.05	NS
E-learning confidence	36.66	5.906	38.48	5.709	-1.824	-1.353	76	>0.05	NS

NS: Not significant at 0.01 and 0.05 level

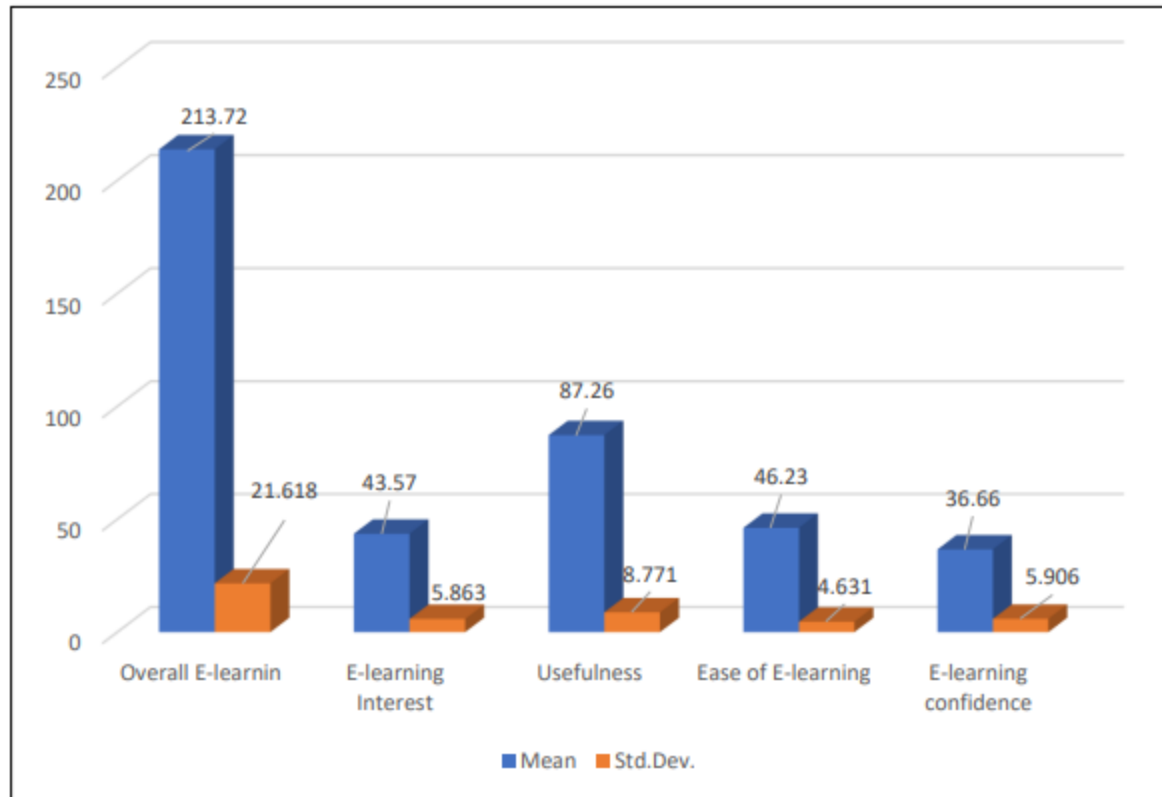


Figure 3: Shows difference between attitudes towards E-learning and its dimension and gender of the senior secondary school students

Based on the results of table 3 it is depicted that male and female senior secondary school students do not differ significantly with respect to their attitude towards e-learning and its dimensions (e-learning interest, usefulness, ease of e-learning and e-learning confidence) ($t = -0.569 \geq 0.05$) at 0.05 level of significance. Therefore, the null hypothesis H01 is accepted. It means male and female senior secondary school students have same attitude towards elearning. This outcome is supported by of Katz et al. work (1995), who stated that “no important variation between attitude scores for male and female”.

There is no significant difference between male and female senior secondary school students with respect to e-learning interest, since t-value is 0.281 as well as p value is greater than 0.05 level. Therefore, the null hypothesis H01 is accepted at 0.05 level with regard to e-learning interest. It means that male and female students have same interest in e-learning.

There is no significant difference between male and female senior secondary school students with respect to e-learning usefulness, since t-value is -0.128 as well as p value is greater than 0.05 level. Hence the null hypothesis H01 is accepted at 0.05 level with regard to e-learning usefulness. It means that male and female students possess same usefulness of e-learning.

There is no significant difference between male and female senior secondary school students with regard to ease of e-learning, since t-value is -1.002 as well as p value is greater than 0.05 level. Hence the null hypothesis H₀₁ is accepted at 0.05 level with regard to ease of e-learning. It means both male and female students do not face difficulty while using e-learning.

There is no significant difference between male and female senior secondary school students with regard to e-learning confidence, since t-value is -1.353 as well as p value is greater than 0.05 level. Hence the null hypothesis H₀₁ is accepted at 0.05 level with regard to e-learning confidence. It means that male and female students have same confidence to apply e-learning.

Hypothesis - 2: There will be no significant relationship between factors (e-learning interest, usefulness, ease of e-learning and e-learning confidence) of e-learning of senior secondary school students.

To test the above-mentioned hypothesis the Pearson correlation coefficient was used and results are discussed in the following table.

Table 4: Results of Pearson correlation coefficient between Factors (e-learning interest, usefulness, ease of e-learning, e-learning confidence) of E-learning of the senior secondary school students.

Factors of E-learning	E-learning Interest	Usefulness	Ease of E-learning	E-learning Confidence
e-learning Interest	1.000	.659^{**}	.415^{**}	.574^{**}
Usefulness		1.000	.471^{**}	.738^{**}
Ease of E-learning			1.000	.547^{**}
E-learning Confidence				1.000

Note: ^{**} denotes significant at 0.01 level

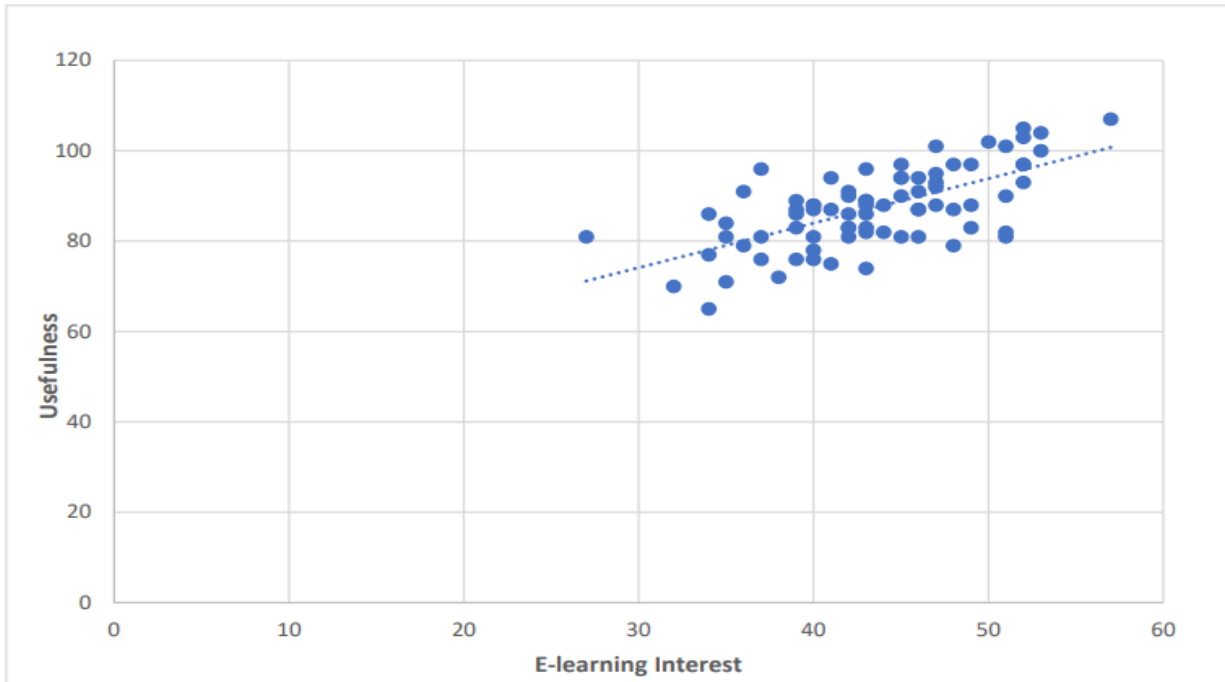


Figure 4: Shows correlation between e-learning interest and usefulness of e-learning of the students

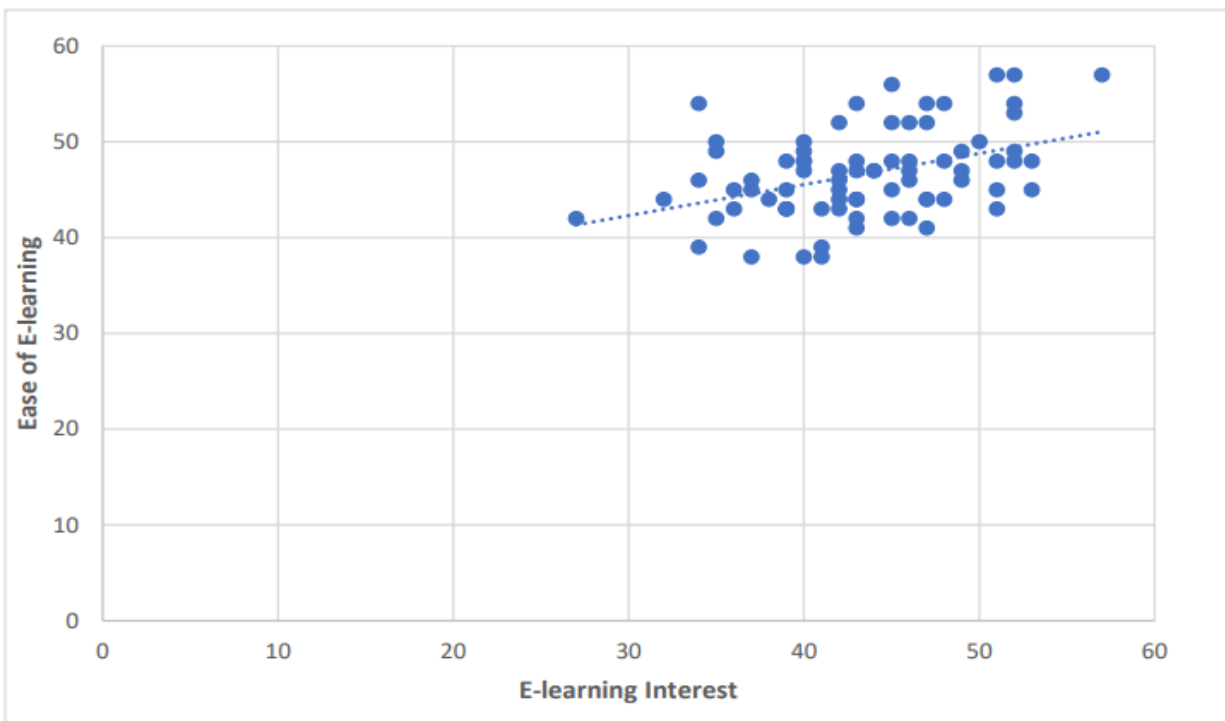


Figure 5: Shows correlation between e-learning interest and ease of learning of the students

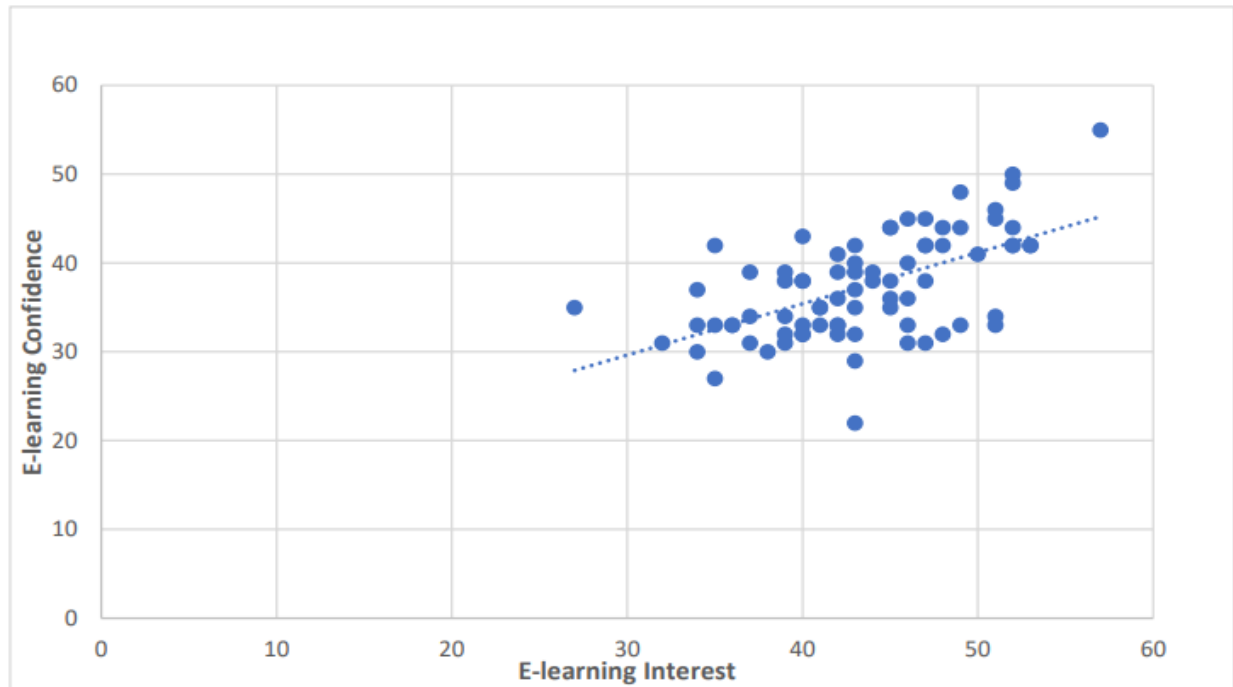


Figure 6: Shows correlation between e-learning interest and e-learning confidence of the students

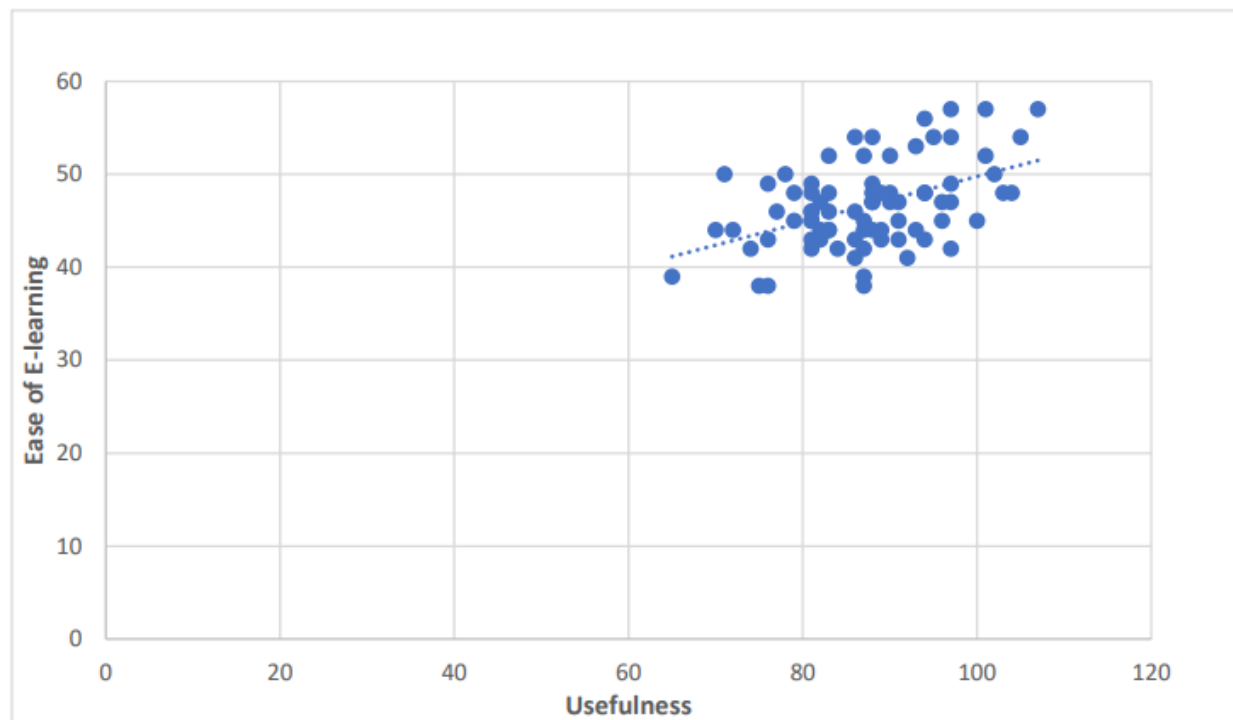


Figure 7: Shows correlation between usefulness and ease of e-learning of the students

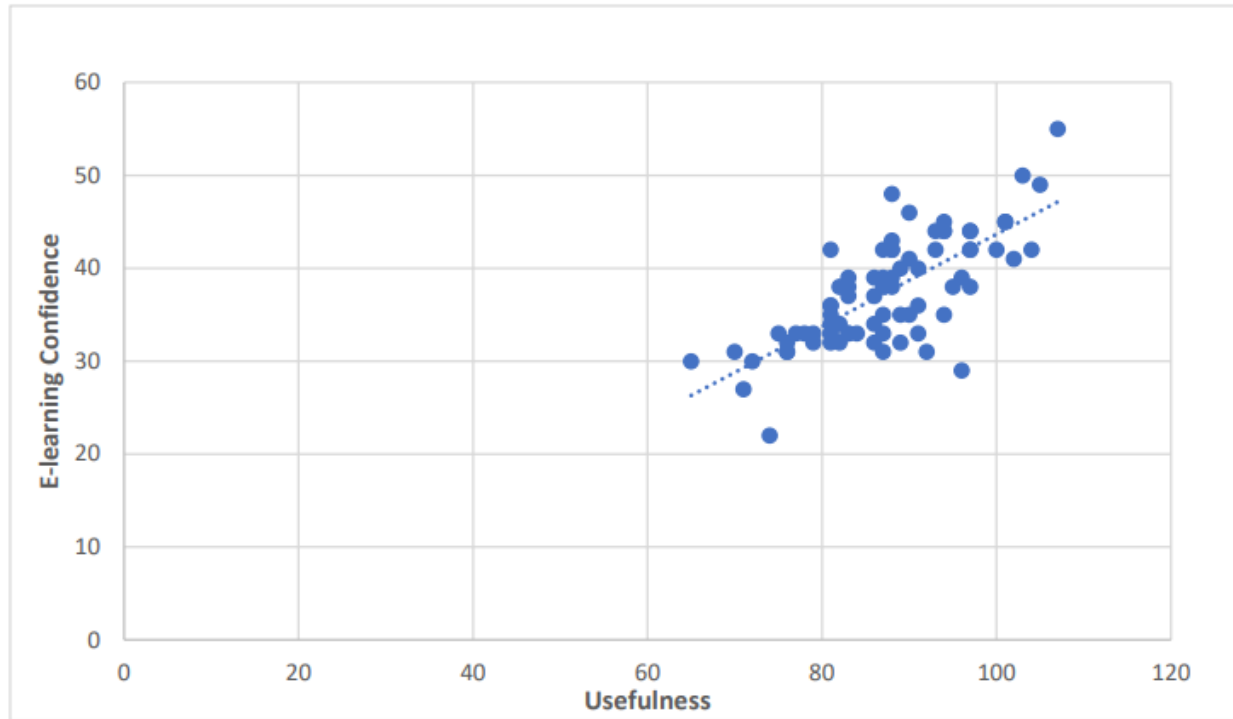


Figure 8: Shows correlation between usefulness and e-learning confidence of the students

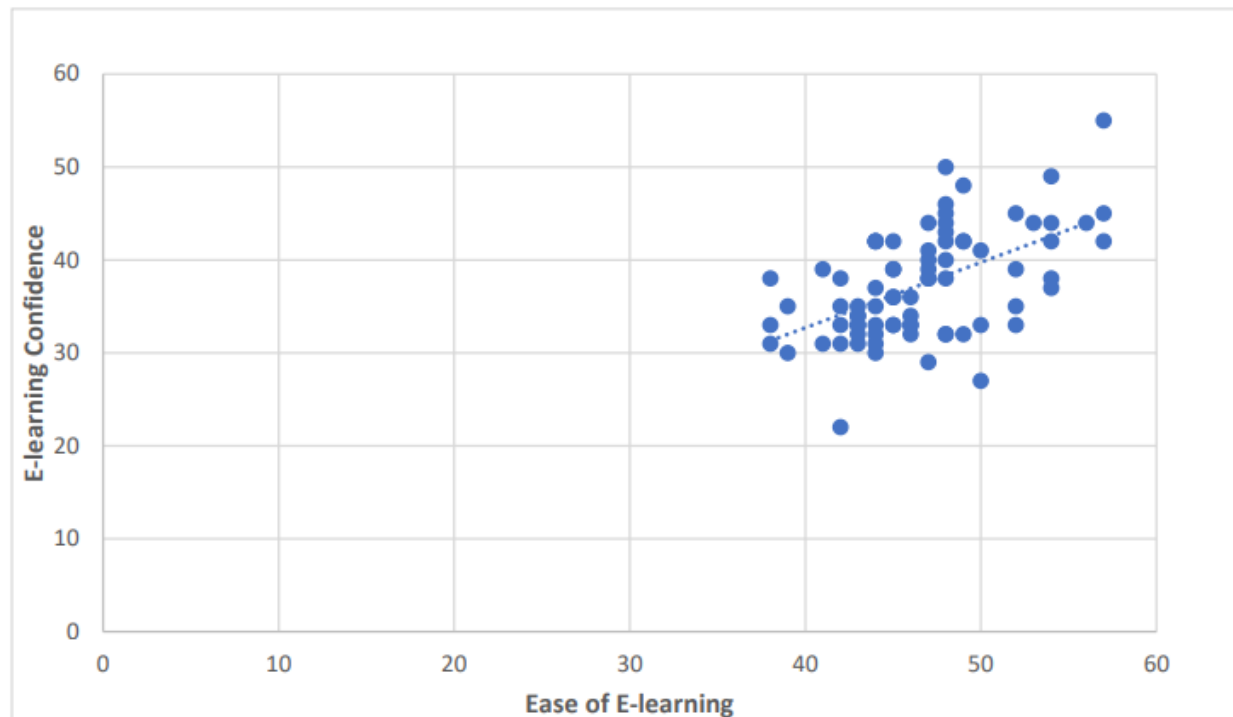


Figure 9: Shows correlation between ease of e-learning and e-learning confidence of the students

Pearson product correlation of e-learning interest and usefulness was found moderately positive and statistically significant ($r = 0.659$, $p \leq 0.01$). Hence null hypothesis H02 is rejected at 0.01 level. It shows that an increase of interest towards e-learning would lead to a higher usefulness of e-learning. Similarly, correlation of e-learning interest and ease of e-learning was found low positive and statistically significant ($r = 0.415$, $p \leq 0.01$). Hence, null hypothesis H02 is rejected at 0.01 level. It indicates that an increase of e-learning interest would give more comfort to use e-learning to the students. Likewise, correlation of e-learning interest and e-learning confidence was found moderately positive and statistically significant ($r = 0.574$, $p \leq 0.01$). Hence null hypothesis H02 is rejected at 0.01 level. It displays that an increase of e-learning interest would boost confidence better towards e-learning. Pearson product Correlation of usefulness and ease of e-learning was found low positive and statistically significant ($r = 0.471$, $p \leq 0.01$). Thus, null hypothesis H02 is rejected at 0.01 level. It shows that an increase of usefulness of e-learning would lead to higher ease of e-learning. Similarly, correlation of usefulness and e-learning confidence was found highly positive and statistically significant ($r = 0.738$, $p \leq 0.01$). Therefore, null hypothesis H02 is rejected at 0.01 level. It demonstrates that an increase of usefulness towards e-learning would give more confidence to the students. Likewise, correlation of ease of e-learning and e-learning confidence was found moderately positive and statistically significant ($r = 0.547$, $p \leq 0.01$). Hence null hypothesis H02 is rejected at 0.01 level. It indicates that while ease of e-learning is increased confidence of the students towards e-learning is also increased.

Conclusion

Usage of Electronic learning or e-learning is increasing during the covid pandemic in India. The development of ICT in educational system will benefit students to boost their confidence and develop motivation level. Nevertheless, some difficulties are still prevailing in developing countries, such as a lack of understanding and an organized approach to technology, as well as the transformation of the educational system (Nawaz and Qureshi, 2010). In this investigation, the researcher wanted to determine the attitude towards e-learning of the senior secondary school students. After analysing data, researcher have found that gender did not have any effect on attitude of students towards e-learning and its components. As senior secondary school students have low attitude towards e-learning, it is expected that senior secondary school students will not be uses e-learning strategy frequently in their learning. In terms of gender effect, the present study discovered that male and female students had relatively similar favourable attitude toward e-learning. This study is consistent with the findings of Hussein (2007), who discovered no significant differences in the attitudes of male and female students. The study revealed positive correlation between different factors of e-learning such as ease of e-learning, e-learning confidence, usefulness, and e-learning interest. From different literature on e-learning it is inferred that ease of e-learning, usefulness, e-learning confidence and e-learning interest are requisite abilities and skills for a student who had positive attitude towards e-learning.

Suggestions for further research

Time and resource constraints may provide a potential obstacle. It is important to highlight that while the results reported in the paper provide useful insights that expand the limited body of work on e-learning in India, they are based on study of a small number of institutions and participants. Furthermore, senior secondary students may be less technically inclined than other students to accept e-learning, which may restrict the generalizability of the findings of the study. It would be interesting to perceive if the results provided in the research might extended to other participants and schools.

The present study is basically a quantitative study. so, in future qualitative study may be conducted to have a more in-depth understanding of attitudes of senior secondary school students. Only gender is chosen as a demographic variable. Thus, other demographic variables could be used in future to have different results.

The present study specifically focused on senior secondary school students. So, a similar study needs to be replicated on primary, secondary higher school/college/university students to produce some latent results. This study is only conducted on 78 senior secondary school students. It should be applied on a larger sample.

References

- Ali, N., Jamil, B., Sethi, A., Ali, S. (2016). Attitude of nursing students towards elearning. *Adv Health Prof Educ*.2(1), 24-29
- Berteau, P. (2009). Measuring students' attitude towards e-learning: A case study. *Proceedings of 5th International Scientific Conference on e-Learning and Software for Education* [https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.623.6294 and rep=rep1 and type=pdf](https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.623.6294&rep=rep1&type=pdf)
- Dhamija, N. (2014) "Attitude of Undergraduate Students Towards the use of eLearning." *MIER Journal of Educational Studies, Trends and Practices*, vol.4 (1), pp. 123-125. <https://doi.org/10.52634/mier/2014/v4/i1/1493>
- Dhiman, K., Birbal, S., Bhim, C. M. (2014). Attitude of University Students towards E-learning in West Bengal. *American Journal of Educational Research*, vol. 2(8), pp.669-673. <http://pubs.sciepub.com/education/2/8/16>
- Fry, K. (2001). E-learning markets and providers: some issues and prospects. *Education Training*, pp.233-239 [http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.195.3960&rep=rep1 and type=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.195.3960&rep=rep1&type=pdf)
- Hussain, I. (2007). A study of student's attitude towards virtual education in Pakistan. *Turkish Journal of Distance Learning*, 8(2), 69-79. Retrieved February 26, 2013 from http://tojde.anadolu.edu.tr/tojde26/pdf/article_6.pdf . Katz, Y. J., Evans, T., and Francis, L. J. (1995). The reliability and validity of the Hebrew version of the Bath County

- computer attitude scale. *Journal of Educational Computing Research*, vol.13(3). pp.237-244. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.623.6294> and rep=rep1 and type =pdf
- Kisanga, D. H. (2016) "Determinants of Teachers' Attitudes Towards E-Learning in Tanzanian Higher Learning Institutions." *The International Review of Research in Open and Distributed Learning*, vol. 17(5), pp. 109-125
<https://files.eric.ed.gov/fulltext/EJ1117380.pdf>
- Nawaz, A. Qureshi, A.Q. (2010). Sustained technical support: Issues and prospects for eLearning in HEIs. *Global J. Manage. Bus. Res.*, 10(9), 32-39. 10. R., Krishnakumar, and M., Rajesh, K. (2011)"Attitude of Teachers' of Higher Education towards E-learning." *Journal of Education and Practice*, vol. 2(4). pp.48- 53
<https://core.ac.uk/download/pdf/234633185.pdf>
- Rani, D. (2008). Manual for Attitude towards e-learning Scale, Ludhiana (Punjab)
- Rhema, A. and Miliszewska, I. (2014) "Analysis of student attitudes towards elearning: The case of engineering students in Libya." *Issues in informing science and information Technology*, vol. 11, pp. 169-190. https://www.researchgate.net/publication/320656158_
- Richard, H., and Haya, A. (2009). Examining student decision to adopt web 2.0 technologies: theory and empirical tests. *Journal of computing in higher education*, 21(3), pp.183-198. https://www.researchgate.net/publication/225118562_Examining_student_decisions_to_adopt_Web_20_technologies_Theory_and_empirical_tests
- Sebnmen, K. I. (2015). Investigation of Students' Attitudes towards e-learning in terms of different variables. *Journal of Educational Research and Reviews*, vol.10(1), pp. 81-91
<https://doi.org/10.5897/ERR2014.1980>
- Suri, G., and Sharma, S. (2013) "The impact of gender on attitude towards computer technology and e-learning: An exploratory study of Punjab University, India." *International Journal of Engineering Research*, vol. 2(2), pp. 132- 136
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.402.2643&rep=rep1&type=pdf>
- Thakkar, S. and Joshi, H. (2017). Students' Attitude towards E-learning. *International Journal of Advance Engineering and Research Development*, vol. 4(11), pp.209-213
<https://www.researchgate.net/publication/321269125>
- Zabadi, A.M. and Al-Alawi, A.H. (2016). University Students' Attitudes towards ELearning: University of Business and Technology (UBT)-Saudi Arabia-Jeddah: A Case Study, *International Journal of Business and Management*, Published by Canadian Center of Science and Education, Vol. 11. No. 6, pp. 286-295
<https://www.researchgate.net/publication/299642832>