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ATTITUDE TOWARDS E-LEARNING AMONG B.Ed. STUDENTS WITH RESPECT TO GENDER, METHODOLOGY AND COMPUTER / LAPTOP FACILITY AT HOME

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Abstract

E-learning is an instructional approach that uses electronic resources to deliver education. It allows knowledge and skills to be transmitted to multiple learners simultaneously or at different times. The main goal of e-learning is to provide an efficient user interface that integrates hardware, software, and networking components to meet the needs of various stakeholders. By incorporating multimedia tools such as graphics, video, music, and text, e-learning enhances the learning process. It offers flexibility, personalized learning experiences, and opportunities for collaboration, making it a valuable method of education in the digital era. The survey method was adopted for this study. The present study consisted of 540 B.Ed. students of Mahabubnagar, Nagarkurnool, Jogulamba gadwal, Wanaparthy, Narayanpet and Rangareddy (Part) districts of Telangana state. The data was obtained from the identified sample. Standardized Attitude towards e-learning scale was used for this study. For statistical analysis hypotheses testing, Mean and F test were applied.

The results of the study indicated that male B.Ed. students exhibited a relatively more favorable attitude towards e-learning compared to female students. Moreover, B.Ed. students with mathematics methodology were appear to be definitely better in their attitude towards e-learning when compared to students in other disciplines, such as Physical Sciences, Social Sciences, and Biological Sciences. Additionally, B.Ed. students who had access to a computer/laptop facility at home certainly better in their attitude towards e-learning in comparison to their counterparts without such access.

Keywords: Attitude towards e-learning, B.Ed. students, computer/laptop facility, gender, methodology.

E-learning concept

E-learning, which refers to electronic learning, constitutes a comprehensive and multi-dimensional domain in education. It has been recognized as a form of computer-enhanced education that is typically associated with the field of advanced learning technologies (ALT). The field of ALT pertains to the application of technologies and associated methodologies in learning, utilizing network and multimedia technologies.

Notably, due to the diverse social backgrounds of students and parents, as well as varying levels of learning standards and teacher training programs, it is challenging for educators to deliver consistent messages to all learners. Therefore, there is a need to provide standardized teaching and learning resources or methods, which has led to the advent of web-based learning or E-learning. This form of learning leverages information technology and related tools to deliver education to all students, including those in rural areas.

Attitude towards e-learning

E-learning, a versatile educational approach, is known by various designations that reflect its diverse applications, including Learning Support System (LSS), Learning Management System (LMS), Managed Learning Environment (MLE), Virtual Learning Environment (VLE), Learning Platform (LP), and Course Management System (CMS). The terminology employed varies across countries, with CMS serving as the predominant term in the United States, whereas VLE is commonly used in European countries. The fundamental purpose of e-learning is to provide an efficient user interface that integrates a wide range of hardware, software, and networking components to meet the requirements of various stakeholders. An effective e-learning system may incorporate multiple multimedia tools, such as still graphics, video, music, text, and moving graphics, to facilitate the learning process.

Online learning integrates Information and Communication Technologies (ICT) into the process of teaching and learning. It utilizes various tools like online platforms, conferences, websites, video CDs, television and mobile technologies (Sife, Lwoga, and Sanga, 2007). The transition to online education has been gradual, primarily because of several barriers identified from previous experiences. These barriers can be grouped into four main categories: institutional strategies, skills, resources and attitudes (O'Doherty et al., 2018).

Definitions of e-learning

"E-learning is the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters" (Guri-Rosenblit, 2005).

"E-learning is the delivery of education (all activities relevant to instructing, teaching and learning) through various electronic media" (Koohang & Harman, 2005).

E-learning covers a wide set of applications and processes such as web-based learning, computer-based learning, virtual classrooms and digital collaboration. It includes the delivery of content via the internet, extranet, audio and videotapes, satellite broadcast, interactive TV and CD-ROM.

Literature review

The researcher has reviewed related studies to find a base for current study. Ahmed, S., & Hina Hussain Kazmi. (2020) found that there was no significant difference between men and women faculty attitudes towards the use of ICTs. Periasamy, R. (2019) study revealed that men attitude was higher than the women B.Ed. trainees. Sripal, P. (2017) concluded that there was no significance difference in the attitude of men and women. Bindu, C. N. (2017) found that men teachers have better ICT awareness compared to their women counter parts. Ishmirekha Handique Konwar (2017) study revealed that both men and women student possess high attitude towards e-learning but women students have slightly higher attitude towards e-learning than men college students. Samir, T., & Hiren, J. (2017) concluded that attitude is not affected by differences in gender. Vivek Singh., Tana Riza. (2022) showed that the attitude of men students is higher than the attitude of women students towards e-learning. Kaur, A., & Singh, S. (2021) found that men pupil teacher's online teaching attitude more positive rather than women pupil teachers. Jaya Singh Dhas, L. (2017) found that there is no significant difference between the attitude of men and women students. B.V. Gopal, & Anandan, K. (2013) found that science subjects B.Ed. Students are having more level of attitude on e-learning than the arts subject student teachers. Cavas, Bulent., Cavas, Pinar., Karaoglan, Bahar & Kisla, Tarik. (2009) found that men and women science teachers in Turkey have the same perception about the use of ICT in education. The Turkish science teachers who own computers had more positive attitudes than those that did not. The overall findings showed that lot of work has been done in the area. Still there is a need to find out the status of B.Ed. students.

Need and significance of the study

Studying B.Ed. students' attitudes towards e-learning is important because it helps educational institutions understand their perceptions and preferences regarding online learning. This knowledge can inform curriculum development and training programs to prepare future teachers for integrating technology effectively in the classroom. By identifying barriers and challenges, institutions can provide support and resources to enhance B.Ed. students' digital competence. Additionally, insights gained from studying these attitudes can inform policy decisions and promote the adoption of e-learning in teacher education programs. Ultimately, understanding B.Ed. students' attitudes towards e-learning allows for better preparation of future teachers and ensures their ability to meet the demands of modern classrooms.

Objectives:

1. To know the attitude towards e-learning among B.Ed. students with respect to gender.
2. To know the attitude towards e-learning among B.Ed. students with respect to methodology.
3. To know the attitude towards e-learning among B.Ed. students with respect to computer/laptop facility at home.

Hypothesis

Considering the review of literature done, the hypothesis for the present study:

1. There is a difference in attitude towards e-learning with respect to gender.
2. There is a difference in attitude towards e-learning with respect to methodology.
3. There is a difference in attitude towards e-learning with respect to computer/laptop facility at home.

Methodology

Descriptive survey method was adopted for this study.

Sample

Stratified random sampling technique was used to select the colleges and B.Ed. students for the study. Including 08 secondary teacher training colleges from Mahabubnagar, 06 from Nagarkurnool, 04 from Jogulamba gadwal, 07 from Wanaparthy, 02 from Narayanpet and 02 from Rangareddy (part). Thus, the total number of selected were 29.

The total population of the B.Ed. students is 2700 from 29 colleges of 6 districts. Total 650 B.Ed. students from Mahabubnagar, 600 from Nagarkurnool, 300 from Jogulamba gadwal, 700 from Wanaparthy, 150 from Narayanpet and 300 from Rangareddy (part) were available. Sample was selected by using simple random sampling technique. The total number of B.Ed. students selected as sample for the study was 540 (20% of the Universe).

Variables: In this study independent variables were 'gender', 'methodology' and 'computer/laptop facility at home' and dependent variable was 'Attitude towards e-learning'.

Tools: For data collection the researcher has used two scales.

1) **Personal data sheet:** Personal data sheet was constructed to obtain personal information of the B.Ed. students. It consisted of the following items: Name of the student, Gender (Male / Female), Methodology (Mathematics / Physical Science / Biological science / Social sciences), Computer/laptop facility at home (Yes / No).
2) **Attitude towards e-learning scale:** Attitude towards e-learning scale was a standardized scale developed by Dimpal Rani (2015).

Validity and Reliability of the scale

The author of the scale established both content and construct validity. Correlation between items scores and total scores were also used for validity. The reliability of the scale was evaluated through the utilization of the Test-Retest method. The obtained correlation coefficient was +0.87, indicating a significant relationship at a significance level of .01.

Administration of the Scales

The researcher approached the selected colleges, and administered the tools with necessary explanation. The attitude towards e-learning scale was distributed to B.Ed. students, accompanied by detailed instructions provided by the researcher. The scale was administered to total of 540 B.Ed. students from 29 B.Ed. colleges across six districts were included in the study. i.e., Mahabubnagar, Nagarkurnool, Jogulamba gadwal, Wanaparthy, Narayanpet and Rangareddy (Part). The obtained scores were analysed with IBM SPSS statistics 29.0. Descriptive statistics consisting of t-test and one way ANOVA was applied. The obtained results were discussed in the following tables.

Results

Hypothesis 1: "There is a difference in attitude towards e-learning with respect to gender".

To test the above hypothesis, t-test has been employed to find out the differences between men and women B.Ed. students with respect to attitude towards e-learning. The table 1 presents the results.

Table 1: ***Showing 'Attitude towards E-learning' among B.Ed. students with respect to Gender.***

Dimension	Gender	N	Mean	S.D.	t-value	Sig.	Df
Attitude towards E-learning	Men	144	151.62	15.371	0.297	0.766	1, 538
	Women	396	151.18	14.851			

* p<.05

a. Predictor: Gender

b. Dependent Variable: Attitude towards e-learning

In 'Attitude towards e-learning', the mean score of men was 151.62, and women was 151.18, indicating above average and heterogeneous responses. The calculated t- value 0.297 with a df 1, 538 was found to be 'statistically not significant'. However, the difference in mean scores indicate that men appear to be relatively better than women in "Attitude towards E-learning".

Hence Hypothesis-1 states that "There is a difference in attitude towards E-learning with respect to gender". was rejected. This finding is supported by *Ahmed, S., & Hina Hussain Kazmi. (2020), Periasamy, R. (2019), Sripal, P.(2017), Bindu, C. N. (2017), Ishmirekha Handique Konwar (2017), Samir, T., & Hiren, J. (2017).*

But the findings of Vivek Singh., Tana Riza. (2022), Kaur, A., & Singh, S. (2021), Jaya Singh Dhas, L. (2017) Were contradicted the hypothesis and revealed that there is no difference between men and women students in their "attitude towards e-learning".

Hypothesis-2: "There is a difference in attitude towards e-learning with respect to methodology".

To test the above hypothesis, one-way analysis of variance (ANOVA) has been used to find out the differences among B.Ed. students. Results are presented in the table 2.

Table 2: Showing Attitude towards E-learning among B.Ed. students with respect to Methodology.

Dimension	Methodology	N	Mean	S.D.	F-Value	Sig.	df
Attitude towards e-learning	Mathematics	135	155.42	14.203	6.112	<.001*	3, 536
	Physical Sciences	54	152.87	12.016			
	Biological Sciences	108	147.87	15.185			
	Social Sciences	243	150.19	15.423			
	Total	540	151.30	14.978			

* p<.05

a. Predictor: Methodology

b. Dependent Variable: Attitude towards e-learning

In the 'Attitude towards e-learning' The calculated mean score for mathematics, physical sciences, biological sciences and social sciences methodology students was 155.42, 152.87, 147.87 and 150.19 indicating average and heterogeneous responses. The calculated F value 6.112 with a df 3, 536 was found to be statistically "significant at 0.05 level" Therefore, it may be concluded that, mathematics students appear to be definitely better than others; followed by Physical sciences, social sciences and biological sciences in 'attitude towards e-learning'.

Mathematics > Physical Sciences > Social Sciences > Biological Sciences

The hypothesis 2- stating that "There is a difference in attitude towards e-learning of B.Ed. students with respect to methodology" was accepted. This finding is supported by *Periasamy, R. (2019), B.V. Gopal, & Anandan, K. (2013).* But the findings of Vivek Singh., Tana Riza. (2022), Kaur, A., & Singh, S. (2021), Jaya Singh Dhas, L. (2017), J M, Arul sekar., AS Arul Lawrence (2015). were contradicted the hypothesis.

Hypothesis-3: "There is a difference in attitude towards e-learning with respect to computer/laptop facility at home".

To know the differences in attitude towards e-learning among B.Ed. students with respect to computer/laptop facility at home, t-test has been used, the Results are presented in the table 3.

Table 3: Showing "Attitude towards E-learning" - Computer/Laptop wise.

Dimension	Computer /Laptop facility at Home	N	Mean	Sd	t-Value	Sig.	df
Attitude towards e-learning	Yes	132	154.94	14.458	3.24	0.001*	1, 538
	No	408	150.12	14.971			

* p<.05

a. Predictor: Computer/laptop facility at home

b. Dependent Variable: Attitude towards e-learning

In 'Attitude towards e-learning', the mean score obtained by students with computer/laptop facility at home were 154.94 and without were 150.12 indicates that above average & average and homogenous response. The calculated t- value 3.24 with a df 1,538 was found to be statistically "*significant at 0.05 level*", indicating that those students with computer/laptop facility at home were certainly better than those without computer/laptop facility at home in 'Attitude towards e-learning'.

With > Without

The hypothesis 3- stating that "There is a difference in attitude towards e-learning of B.Ed. students with respect to computer/laptop facility at home" was accepted.

This finding is supported by Cavas, Bulent., Cavas, Pinar., Karaoglan, Bahar & Kisla, Tarik. (2009)

Discussion

The researcher aimed to study attitude towards e-learning among B.Ed. students with respect to gender, methodology, and computer/laptop facility at home. The findings revealed that men showed a relatively higher 'attitude towards e-learning' compared to women. Students studying the Mathematics methodology exhibited a more positive 'attitude towards e-learning' than other students. Moreover, B.Ed. students with access to a computer/laptop at home displayed a better 'attitude towards e-learning' than those without such facilities.

H1: There is a difference in attitude towards e-learning with respect to gender. Study concluded that men appear to be relatively better than women in attitude towards e-learning.

H2: There is a difference in attitude towards e-learning with respect to methodology. Mathematics methodology students were certainly better than others in 'Attitude towards e-learning'; followed by physical sciences, social sciences and biological sciences students.

H3: There is a difference in attitude towards e-learning with respect to computer/laptop facility at home. Study concluded that B.Ed. students with computer/laptop facility at home definitely better than others in attitude towards e-learning.

Conclusion

According to the study findings, it appears that men tend to exhibit a more positive attitude towards e-learning compared to women. The study concluded that B.Ed. students who are pursing mathematics methodology demonstrated the most favorable attitude towards e-learning, followed by those in physical sciences, social sciences, and biological sciences. Furthermore, it was also found that B.Ed. students who had access to a computer/laptop facility at home showed a significantly more positive attitude towards e-learning compared to their counterparts without such access.

In addition to the above, the following were revealed: -

- 40% B.Ed. students worry about their ability to use e-learning; very slow in using internet; e-learning is difficult for them.
- Three-fourth of the B.Ed. students still do not feel e-learning is as interactive as classroom teaching-learning process and more interesting than class room learning.
- 89% do not feel that e-learning: Keeps them upto date; good substitute for teacher; need not ask others for a topic; learning becomes fun; relatively new concept; cheap source of information; very easy to use; is a boon; makes more confident; can effectively work outside the class with the help of e-learning.

Educational Implications

Based on the findings of the study the researcher has drawn few educational implications.

1. The institutions have to provide the regular orientations on the new concepts in e-learning, hardware orientation to arrange and adjust the computer peripherals to make B.Ed. students more competent.
2. Orientation programme should be conducted to boost the confidence in e-learning to the students in theory and practical.
3. The Institution will have to take steps for students' comprehensive professional development, supportive system, resource accessibility, collaboration with neighbouring institutions.
4. Online courses such as MOOCs should be introduced and encouraged.

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