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Effectiveness of imparting e-learning in education

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Abstract



E-learning plays a crucial role in modern education by promoting equity, improving the quality of learning and teaching, and enhancing efficiency. This study investigates the impact of e-learning on education, specifically focusing on its effectiveness in improving learning outcomes. The main objective is to explore how e-learning can enhance the educational experience. An experimental study was conducted with a sample of 32 XI-grade students. The findings revealed that e-learning significantly improved students' learning performance. The results demonstrated that the experimental group showed highly significant gains, highlighting the effectiveness of e-learning as a teaching tool. The study underscores the transformative potential of e-learning in education, emphasizing its ability to boost engagement and performance. As education evolves, the integration of e-learning methods proves essential for addressing modern challenges, ensuring accessibility, and enhancing the overall quality of the learning process.

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INTRODUCTION

Nowadays, technology plays a dynamic role in the entire field, especially in education. Education is very important for changing the needs of both individuals and society. In this digital world, the younger generation are digital natives, and they are very profoundly adapted to digital technologies or electronic gadgets due to their experiences at their primary age. Through e-learning, it will improve attention, and they will learn comprehensively. There are various tools used in education, like artificial intelligence,

augmented reality, flipped learning, e-learning, etc. The role of e-learning in education has excessive implications for teachers as they prepare to deal with the educational classroom environment. The integration of e-learning in education is to ensure the continuousness and stability of the process by adapting suitable e-learning in education that contributes to the learner Yildiz, B., & KoçakUsluel, Y. (2016). The information and communication technologies in the classroom will open a large range of opportunities [8].

Objectives of the study

To find out the effectiveness of imparting e-learning in education

To find out if there is a significant difference between the pre-test and post-test of imparting e-learning in education in terms of demographic variables.

Hypotheses of the study

There is no significant difference, in the mean score of pre-test of imparting e-learning in education between experimental and control group in terms of demographic variables.

There is no significant difference, in the mean score of post-test of imparting e-learning in education between experimental and control group in terms of demographic variables.

There is no significant difference between the effect size of pre-test and post-test of imparting e-learning in education between experimental group and control group.

Methodology

The research investigator adopted an experimental method. The sample of 32 students is studying XI standard from Govt. higher secondary students in Sivagangai were selected. The pre-test was conducted for both the experimental and control groups. The coefficient of reliability is 0.7 by the test and retest method. The statistical techniques of

mean, standard deviation, and t test were calculated.

Analysis and Data Interpretation:

Hypothesis: 1

There is no significant difference, in the mean score of pre-test and post-test of imparting e-learning in education between experimental and control group in terms of Gender.

From this **Table 1**, it is inferred that there is no significant difference in the mean score of the pre-test of imparting e-learning in education between the experimental and control groups in terms of gender. Hence, it is concluded that the experimental group (pre-test) had a positive significance level of 0.05. It is revealed that there is no significant difference in the mean score of the post-test of imparting e-learning in education between the experimental group and the control group in terms of gender; the female has a higher mean score than the male. It is inferred that the experimental group (post-test) had a positive significance level of 0.05.

Hypothesis: 2

There is no significant difference, in the mean score of Pre test and post test of imparting e-learning in education between experimental and control group in terms of locale of student.

From this **Table 2**, it is inferred that there is no significant difference in the mean score of the pre-test of imparting e-learning in education between the experimental and control groups in terms of the locale of the student. The mean score of the post-test is higher than the pre-test score. In the experimental group, the mean score of urban areas is higher than that of rural regions.

Hypothesis: 3

There is no significant difference, in the mean score of Pre test and post test of imparting e-

learning in education between experimental and control group in terms of group

From this **Table 3**, it is inferred that there is no significant difference in the mean score of the pre-test of imparting e-learning in education between the experimental and control groups in terms of the number of students.

The mean post-test score of science group students is higher than that of arts group students.

Findings of the study:

There is a significant difference, in the mean score of pre-test of imparting e-learning in education in experimental group in terms of gender.

There is no significant difference, in the mean score of pre-test of imparting e-learning in education in control group in terms of gender.

There is a significant difference, in the mean score of pre-test of imparting e-learning in education in experimental group in terms of Locale of the students.

Table 1

Variable		Pre-test					Post-test			
		N	Mean	SD	t value	Level of Significance	Mean	SD	t value	Level of Significance
Experimental Group	Male	12	50.47	4.25	4.30	0.05	70.25	5.21	3.60	0.05
	Female	20	70.11	9.11			65.00	8.20		
Control group	Male	12	40.25	3.03	1.95	0.05	40.85	2.87	1.78	0.05
	Female	20	42.10	2.18			42.10	2.18		

Table 2

Variable		Pre-test					Post-test			
		N	Mean	SD	t value	Level of Significance	Mean	SD	t value	Level of Significance
Experimental Group	Urban	14	30.40	3.25	2.30	0.05	40.75	5.37	4.70	0.05
	Rural	18	28.22	2.45			25.00	4.20		
Control group	Urban	14	20.25	2.35	1.85	0.05	20.85	3.01	1.98	0.05
	Rural	18	22.10	2.47			20.12	2.08		

Table 3

Variable		Pre-test					Post-test			
		N	Mean	SD	t value	Level of Significance	Mean	SD	t value	Level of Significance
Experimental Group	Arts	12	42.45	3.80	2.15	0.05	46.75	4.37	3.60	0.05
	Science	20	34.25	2.70			28.70	3.28		
Control group	Arts	12	25.20	1.88	1.70	0.05	24.25	3.40	2.00	0.05
	Science	20	20.12	2.47			22.02	2.00		

There is no significant difference, in the mean score of pre-test of imparting e-learning in education in control group in terms of Locale of the students.

There is a significant difference, in the mean score of pre-test of imparting e-learning in education between experimental group and control group in terms of groups.

Conclusion

E-learning enhances the quality of education, provides equal learning opportunities, improves learner outcomes, and increases their educational interest. The e-learning will increase self-learning or personalized learning and improve their learning style. From the findings of the study, we concluded that e-learning supports learning performances and is also effective in delivering instructions.

Ethical Approval

No ethical approval was necessary for this study.

Author Contribution

All authors made substantial contributions to the conception, design, acquisition, analysis, or interpretation of data for the work. They were involved in drafting the manuscript or revising it critically for important intellectual content. All authors gave final approval of the version to be published and agreed to be accountable for all aspects of the work, ensuring its accuracy and integrity.

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