INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY

RESEARCH ARTICLE

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Competing Interests: None

Effect of Prezi Based Presentations on Achievements of Pre-Service Teachers in Teacher Education Curriculum Contents

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Abstract

Objectives: The main objective of study was to find out whether adopting Prezi-based presentations in the teacher education topic of Curriculum and School had any positive effects on pre-service teachers' academic performance. **Method**: A single-group pre-test and post-test experimental design was used in the study to examine the effects of Prezi-based presentations in the classroom. The 90 pre-service teachers from the Department of Education at the Gandhigram Rural Institute (Deemed to be University), Dindigul, Tamil Nadu, India, were selected as a sample using the purposive sampling method. **Findings**: The study's major conclusions showed that using Prezi for presentations was an effective approach for enhancing pre-service teachers' level of achievement in teacher education subjects. **Novelty :** The present study is a maiden attempt at examining the effect of Prezi-based presentations on the achievements of pre-service teachers, which will be of immense importance to the research community interested in working on cloud-based presentations for enhancing students' achievements in teacher education curriculum content**.**

Keywords: Achievement; Curriculum; Preservice Teachers; Prezi based presentation; Teacher Education

1 Introduction

Prezi is a well-known presentation programme to make a presentation using a sophisticated and dynamic web tool[1]. The architect Adam Somlai-Fisher created the Prezi presentation in 2009, and he personally prepared all of the detailed pictures, microphotographs, little arrows, and backgrounds for each presentation in order to demonstrate interactive design and dynamic groupings in order to effectively deliver his work to the audience. He began using the Zoomable User Interface for presentations in 2001 after numerous efforts and eventually built the current Prezi after overcoming manufacturing challenges[2].

Prezi's presentation is regarded as a non-traditional display since, in contrast to traditional presentations, it can combine written and non-linear displays. It is an

advanced application for showing the relationships and connections between the subject's ideas, and it offers the ability to create, update, or display presentations as well as store and share presentations in a way that enables viewing of images in a bigger size[3]. Prezi can be utilized to create both linear and non-linear presentations, as well as media presentations and as a tool to discover different ideas on a virtual canvas. Prezi has the ability to zoom in and out when displaying images and videos.In addition, Prezi can display Powerpoints and allow users to select their preferred Prezi background. Prezi is affordable, useful, and adaptable; it can be stored and used anywhere and is available in online and offline versions, requiring only a computer, tablet, and Internet connection.

With Prezi, a Web 2.0 presentation application, teachers and students can incorporate multimedia data into an endless digital canvas and present such visualisations non-linearly[4]. For creating and storing digital presentations, it offers a variety of account types and tools. The most distinctive aspects of Prezi are its practically infinite workspace and its dynamic visual presentation features. Because it is web-based, the students can work together with their peers to digitally edit presentations, which is a useful learning opportunity[5]. Prezi encourages student learning while assisting teachers in reducing the amount of time they spend instructing students directly. Prezi, a learning and teaching tool, helps teachers assist students' writing and listening abilities[6].

Prezi allows for active learning and participation in the classroom, which improves comprehension, retention, and enjoyment for students as well as teachers. They are better able to educate others and offer knowledge in a fun and engaging way. Prezi presentations possess more impressive visual designs that play a significant impact in attracting and holding students' attention[7]. Prezi aids students in improving relevant learning, including overcoming obstacles in a challenging virtual environment[8]. Prezi can assist teachers in communicating complex ideas and improving their attractiveness in interesting ways so that students will be encouraged to learn. It also has more active benefits than many other learning methods, as pupils listen to the learning process less successfully and struggle to visualise the offered material[9].

Prezi helps students visualise the material they are studying, increases their willingness to study, and boosts teachers' confidence while reducing their teaching anxiety. Additionally, it motivates aspiring educators to use inventive Prezi presentations and high-speed Internet. Future teachers are today's pre-service teachers, and their education is the most crucial stage in determining whether they will have more opportunity to learn about using technology into their instruction. Future educators must receive training in fusing technology with education if they are to be effective in their roles as teachers. If there is a flaw in this, it will discourage them from using technology in their teaching activities moving forward[10]. With this context, the study was undertaken to examine the role that Prezi-based presentations play in boosting student achievement in teacher education curriculum and school.

1.1 Objectives

- To develop the Prezi based presentations for teaching the contents- curriculum and school to pre-service teachers
- To find out the effect of using Prezi based presentation in enhancing the achievements among prospective teachers, and
- To analyse the prospective teachers' achievement in the content of curriculum and school with reference to subject groups-Arts and Science; frequent use of internet-regular and irregular; and the previous knowledge on using Prezi - Yes and No.

1.2 Hypotheses

H_{01}: There is no impact of Prezi based presentation in enhancing the achievement level of pre-service teachers in selected teacher education content.

H_{02}: There is no impact of pre-service teachers' subject background-Arts and Science on their achievement level after the Prezi application in teaching.

H_{03}: There is no impact of frequent internet usage of pre-service teachers on their academic achievement level after the Prezi application in teaching.

H_{04}: Taking into account pre-service teachers' prior Prezi knowledge, there is no significant difference in their achievement results on the post-test.

2 Methodology

The study's research design employed an experimental approach. Single group pre-and post-tests were used to investigate the effects of Prezi-based presentations on the achievement levels among the pre-service teachers. Using the purposive sampling method, 90 pre-service teachers from the Gandhigram Rural Institute (Deemed to be University), Dindigul, Tamil Nadu, India, were chosen as the study sample.

The selected content from subject- Curriculum and School was taught in traditional way of teaching to the selected pre-service teachers before pre-test and conducted an achievement test to them. Similarly, another content from the same subject- Curriculum and School was taught to the selected pre-service teachers before post-test with use of Prezi based presentation and conducted post achievement test to the pre-service teachers.
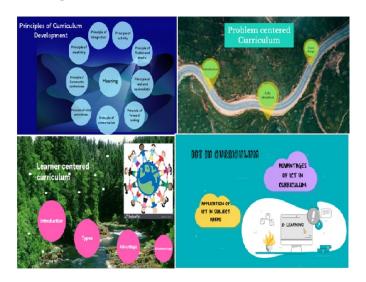

Fig 1. Selected contents in Prezi presentation

2.1 Instruments Used

The pre-service teachers were given the achievement pre-test and post-test in teacher education material- Curriculum and School. The pre-test and post-test were conducted over the course of one month. The investigators created 50 multiple-choice questions as part of the test materials, which were then subjected to the customary standardization processes. In the achievement test, the participants' correct answers to each question received a score of one mark, and their incorrect answers received a score of zero mark. As a result, the maximum score on the achievement test, which has 50 questions overall, is 50. With reference to the data analysis report, the study's findings are outlined in the paragraphs that follow.

3 Results and Discussion

The mean achievement scores and standard deviations of Pre-service teachers in pre-test and post-test are analyzed in the following table to know whether there is any significant mean difference in pre-test and post test scores.

Table 1. Mean Achievement Scores of Pre-service Teachers in Pre-test and Post-test

Test	N	Mean	Std. Deviation	Effect Size (r)	t- value	p-value
Pre-Test	90	29.94	3.74	0.57	11.39	0.00
Post-Test	90	35.33	3.95			

Table 1 shows that, the mean scores of selected sample in pre-test and post-test are 29.94 and 35.33 respectively. The mean achievement scores of sample in pre-test and post-test highlights that pre-service teachers acquired a better achievement in post-test and hence it is concluded that there was a positive effect of using Prezi based presentation in teaching the teacher education contents to pre-service teachers.Prezi is more effective than the traditional teaching approach at raising students' academic achievement, according to results of earlier studies [11,12]. Additionally, the use of Prezi in classroom teaching and learning provided the students with more learning opportunities. Effect size is defined in the above table as the percentage of the difference between the pre-test and post-test results that can be attributed to the chosen intervention, which can be either regular classroom training or education using Prezi. If the effect size value is 0.8 and above, it means that there was a large effect of intervention; if it is 0.5 to below 0.8, then it assumes that there was a medium effect; and if it is 0.2 to below 0.5, then it shows there was a small effect [13]. In this study, the investigators used experimental treatment and then the effect size was calculated to

know the effect of treatment. The calculated effect size value 0.57 in this study indicates that there was a medium effect of using Prezi based presentation in teaching teacher education contents to the pre-service teachers. Further, the calculated t (11.39) and p (0.00 < 0.05) values indicate that there is a significant difference between the mean scores of pre-service teachers in pre-test and post-test. Therefore the assumed hypothesis- H_{01} is rejected.

The mean achievement scores of sample in post-test with reference to their subject background and their previous knowledge on Prezi presentations are analyzed in Table 2.

Table 2. Mean Achievement Scores of Pre-service Teachers in Post-test with reference to subject and Prior knowledge in Prezi

Pre-service Teacher		N	Mean	Std. Deviation	t- value	p-value
Subject	Arts	45	35.40	3.88	0.16	0.87
	Science	45	35.27	4.08		
Prezi Knowledge	Yes	38	35.63	3.85	0.61	0.54
	No	52	35.12	4.05		

Table 2 Explains that, the mean scores of selected sample of Arts and Science background in post-test are 35.40 and 35.27 respectively. It shows that there was no much difference between them and it is confirmed through the calculated t (0.16) and p (0.87 > 0.05) values. Since the p-value is greater than 0.05, it means that there was no significant difference between these two mean values and hence the assumed hypothesis- H_{02} is accepted. Further, the mean scores of selected sample with and without prior knowledge background in Prezi presentation in post-test are 35.63 and 35.12 respectively. It is also demonstrates that there was no much difference between them and it is confirmed through the calculated t (0.61) and p (0.54 > 0.05) values. Since the p-value is greater than 0.05, it means that there was no significant difference between these two mean values and hence the assumed hypothesis- H_{03} is accepted.

There are surprisingly few researches looking at how Prezi presentations affect students' academic achievement in relation to their subject areas and past Prezi presentation usage. Nevertheless, some studies [4,8] discovered that having an understanding of information and communication technology helps users improve their knowledge through Prezi. Additionally, one study discovered that there was no discernible difference between the accomplishment scores of students using the Prezi application and their prior knowledge [14].

The impact of Prezi application on mean achievement scores of sample with reference to their frequent use of internet — using often, using few times in a week, using rarely is analyzed in Table 3.

Table 3. Mean Achievement Scoresof Pre-service Teachers in Post-test with reference to their internet usage

Internet Usage	Mean	Std. Deviation	Source	Sum of Squares	df	Mean Square	F	p-value
Often	35.63	3.97	Between Groups	5.75	1	5.75		
Few times	35.07	3.95	Within Groups	1386.14	87	15.93	0.36	0.55
Rare	35.30	4.06	Total	1391.89	88			

The use of technological devices in classroom teaching learning processes facilitates the students' learning processes [15]. With the realization on the usefulness of technological in instruction, most of the teachers now-a-days are showing interest in using technological devices for their teaching purposes. Apart for this, many of the student community spends more times for using smart phones, tablets, and Internet access in their daily life. There are a number of reasons why utilising technology can negatively impact academic performance. [16]. The data given in the above table-3 also reveals the effect of frequent usage of internet by students for their academic purposes. The data results indicate that, the mean scores of selected sample, who often used internet, few times in a week and rarely used, in post-test are 35.63, 35.07 and 35.30 respectively. These mean scores also imply that there was no much difference among them. Whereas some studies found that internet usage has significant effect on student's academic achievements [17,18]. Further, the calculated F (0.36) and p (0.55 > 0.05) values show that there was no significant difference among the mean scores of pre-service teachers who often used internet, few times in a week and rarely used because of the arrived p-value is greater than 0.05. Therefore, the assumed hypothesis- H_{04} is also accepted.

4 Conclusion

The quality of training practice provided to pre-service teachers determines the caliber of teacher education programmes. The training programme should offer plenty of opportunities to experience using technology in the classroom. They should also

be encouraged to use technology in the classroom for educational tasks. Teaching is a challenging profession now-a-days due to the causes of COVID-19 pandemic throughout the globe. Every teacher is expected to be a master not only in the subject but also in utilizing the worthy teaching learning methods and materials according to the need of the individual learner and the subject contents. Teachers must be aware on selecting the latest ICT techniques which will feasible to uplift the students' learning interest and achievements.

Prezi is a powerful tool for getting students' attention and improving the classroom environment. Additionally, it helps them to have worthwhile educational experiences. The study's key finding demonstrates that academic performance of pre-service teachers was increased through the Prezi application into classroom instruction. Hence, it is suggested that the prospective teachers may be encouraged to use and practice Prezi presentation in their practice teaching. Learning new teaching techniques and practice them are all the need of the hour for promoting quality teacher education in the country. Every school system largely depends on teachers for qualitative improvements. Hence, the development of Prezi based presentation is potentially powerful tool for extending the professional knowledge among the pre-service teachers.

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