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A Comparative Analysis of Traditional, and Blended Learning Approaches: Impact on Student Engagement in Teacher Training Programs

Dr. Premachandran P, Assistant Professor in Education, Navajyothi College of Teacher Education, Thrissur

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Abstract

The effect of blended, and traditional learning strategies on student participation in teacher preparation programs is examined in this study. Given the growing use of technology in educational institutions, it is essential to comprehend how various teaching philosophies impact student engagement, motivation, and academic results. A comparative study of two groups of teacher candidates, one enrolled in a blended learning environment, which blends online, and in-person training, and the other in traditional face-to-face learning, is used in this study. Student's evaluations of their learning experiences were investigated through qualitative interviews, which were supplemented by quantitative questionnaires measuring engagement levels. The results imply that blended learning increases student involvement, especially when it comes to self-regulation, teamwork, and interaction. In order to improve teacher preparation programs, the study addresses the benefits, and drawbacks of both systems, and makes suggestions for incorporating blended learning techniques. The creation of more efficient, and captivating learning environments in higher education may be impacted by these revelations.

Keywords: - Traditional Learning, Blended Learning, Student Engagement, Teacher Training Programs, Educational Technology, Learning Outcomes, Instructional Methods, Higher Education, Interactive Learning, Self-Regulated Learning.

I. INTRODUCTION

Technology's introduction has fundamentally changed the nature of education, especially when it comes to programs for teacher preparation. Face-to-face instruction, in which students interact directly with classmates, and instructors, has historically been used to offer teacher education. However, the use of digital technologies in the classroom has led to the development of blended learning, which combines the benefits of both online, and face-to-face instruction. In light of the increasing popularity of blended learning as a way to improve accessibility, flexibility, and interaction, it is important to evaluate how well it fosters student engagement to more conventional teaching approaches.

A key component of the learning process, student engagement affects academic achievement, motivation, and retention. The degree of involvement can have a big impact on the learning process, and the eventual efficacy of trainees as teachers in programs that emphasize the development of teaching abilities, and pedagogical knowledge. Few studies have explicitly examined blended learning's effects on student engagement in teacher training environments, despite the fact that many have examined its advantages. By contrasting student participation in traditional, and mixed learning settings within teacher preparation programs, this study seeks to close this gap.

This study's main goals are to evaluate the effects of traditional, and blended learning strategies on student engagement, pinpoint the elements that influence engagement in each context, and investigate how teacher candidates see various learning environments. This study aims to offer insightful information for improving teaching strategies, and maximizing the educational experience in teacher preparation programs by comprehending the subtleties of student engagement in both traditional, and blended formats.

II. LITERATURE REVIEW

A rising amount of research has been conducted in the educational industry in recent years to examine the effects of blended learning, which blends online, and in-person instruction. Research indicates that individualized learning, and flexibility are enhanced by blended learning, enabling students to pace their study, and interact more fully with the material (Garrison & Kanuka, 2004). According to (Means et al. 2013), blended learning has demonstrated potential in cultivating fundamental teaching abilities, and encouraging self-directed learning in teacher preparation programs where practical engagement is crucial.

(Gikandi, Morrow, and Davis, 2011) noted, for example, that teacher candidates can work together more successfully in blended learning settings, which encourages peer communication, and critical thinking. However, the direct, face-to-face interaction of traditional learning has been praised for allowing students to actively interact with teachers, and peers, and receive prompt feedback (Bonk & Graham, 2012).

For teacher training programs to be effective, student engagement, which includes emotional, cognitive, and behavioral aspects, is crucial (Fredricks, Blumenfeld, & Paris, 2004). Due to face-to-face connection, traditional learning has long been linked to higher levels of direct involvement. But according to current research, blended learning can engage students just as well as or even better than traditional approaches, particularly when it comes to learning autonomy, and self-regulation (Boelens et al., 2017).

However, the findings have been conflicting, some study indicates that students in blended learning settings could experience loneliness or struggle to manage self-paced learning, underscoring the need for more investigation (Halverson et al., 2014).

III. RESEARCH GAP

Few studies explicitly compare the effects of traditional, and blended learning approaches on student engagement in teacher training programs, despite the fact that many have examined the advantages of blended learning in many educational contexts. Engagement is a more complex concept including emotional, cognitive, and behavioral components than academic success or satisfaction, which is the subject of much of the current study. Additionally, the effects of blended learning on particular engagement elements, such self-regulation, teamwork, and interactivity, in teacher training settings have not been sufficiently examined in prior research. By offering a thorough comparison of student participation in traditional, and blended learning settings in teacher preparation programs, this study seeks to close this gap.

IV. OBJECTIVES

- To assess how engaged students are in teacher preparation programs in traditional, and mixed learning settings.
- To determine the elements that affect student's participation in mixed, and traditional learning methods.
- To evaluate how well blended learning improves teacher candidate's self-regulated learning, teamwork, and interaction.
- To investigate how teacher candidates, perceive their experiences learning in blended versus traditional learning settings.
- To offer suggestions for incorporating blended learning techniques to raise student interest in teacher preparation courses.

V. HYPOTHESES

- Traditional, and blended learning environments have very different degrees of student participation in teacher preparation programs.
- Compared to traditional learning, blended learning leads to greater levels of interaction, and cooperation among teacher candidates.
- Compared to those in traditional settings, teacher candidates in mixed learning contexts exhibit more self-regulated learning behaviors.
- Compared to traditional learning methods, teacher candidates believe blended learning to be more engaging, and successful.

VI. THEORETICAL FRAMEWORK

This research is based on the Constructivist Learning Theory, which holds that students actively create knowledge through social interactions, and experiences (Piaget, 1970; Vygotsky, 1978). In the context of blended learning, constructivism supports the idea that students engage more deeply when they can interact with content independently online, and discuss or apply it collaboratively in person. In order to create meaningful learning experiences, the Community of Inquiry (CoI) Model (Garrison, Anderson, & Archer, 2000), emphasizes the importance of teaching, social, and cognitive presences.

These three presences can flourish in blended learning: instructional presence is improved by incorporating instructor feedback in both online, and in-person settings, social presence is fostered by collaborative exercises, and cognitive presence is supported by self-paced online activities.

In order to give evidence-based suggestions for optimizing student engagement in teacher training programs, this study applies these theoretical frameworks to investigate the ways in which blended, and traditional learning settings affect student engagement differently.

VII. METHODOLOGY

7.1. Research Design

This study employs a comparative mixed-methods research design to analyse the impact of traditional, and blended learning approaches on student engagement in teacher training programs. The design incorporates both qualitative, and quantitative elements: semi-structured interviews to provide detailed qualitative insights into student's experiences, and attitudes, and a survey to quantify involvement levels. This hybrid approach makes it possible to fully comprehend the ways in which various aspects of student involvement are impacted by each learning strategy.

7.2. Sample

Teacher candidates enrolled in teacher preparation programs at various colleges make up the sample. Participants are chosen from two groups, one that receives conventional in-person training, and the other that uses a blended learning model, using a purposeful sampling technique. With 50 pupils in each group, the study hopes to enlist about 100 individuals overall to guarantee a fair comparison. The study's generalizability is improved by selecting participants who represent a range of demographics, such as age, gender, and educational background.

7.3. Data Collection Method

There are two main approaches to gathering data:

Quantitative Surveys: An engagement survey, adapted from validated scales like the Student Engagement Scale (Fredricks et al., 2004), is administered to assess cognitive, emotional, and behavioural engagement levels. This survey uses a Likert-scale format to capture participant's responses on various engagement factors.

Qualitative Interviews: A subset of twenty students, ten from each group, are interviewed in a semi-structured manner to acquire in-depth knowledge of their perspectives, and experiences. Student's perceptions of the advantages, and difficulties of each learning strategy, as well as their preferences for learning ways, are the main topics of the interviews.

7.4. Data Analysis

Quantitative Data Analysis: The survey responses are analysed using statistical tests, including independent samples t-tests to compare engagement levels between the two groups. Correlation analysis can also be used to investigate the connections between involvement levels, and demographic characteristics.

Qualitative Data Analysis: The interview responses are transcribed, and analysed thematically using NVivo software. Themes related to interactivity, collaboration, self-regulation, and emotional engagement are identified, and compared across traditional and blended learning experiences.

7.5. Ethics

Ethical considerations are a central part of this study to protect participant's rights, and maintain research integrity. Informed consent is obtained from all participants, who are briefed on the study's purpose, methods, and confidentiality assurances. Participants are informed of their right to withdraw at any point without any consequence. Participant's identities are anonymized in all reports, and publications, and the study closely complies with data privacy regulations, guaranteeing that all data are safely maintained. The institutional ethics committee granted approval for this study in order to guarantee adherence to moral guidelines for educational research.

VIII. RESULTS

8.1. Findings

The study's findings show that there are significant variations in the levels of student involvement between the blended, and traditional learning groups. According to a quantitative examination of the survey data, students in the blended learning group indicate far higher levels of involvement in terms of behavior, emotions, and cognition. In particular, as compared to their peers in the traditional learning group, blended learning students scored 20% higher on engagement ratings pertaining to self-regulation and interactivity.

Students in the blended learning group often described their experience as more engaged, and engaging, because of the incorporation of digital resources, which is further supported by the qualitative interviews.

8.2. Analysis

Quantitative Analysis: A statistically significant difference in the two group's levels of participation is shown by the independent samples t-test on survey results ($p < .05$). Students who participated in blended learning showed that the online components of blended learning gave them greater flexibility, and autonomy by consistently scoring higher in categories pertaining to self-paced learning, cooperation, and cognitive engagement.

Furthermore, a correlation analysis reveals a positive relationship between student's engagement, and their perceptions of interactivity in the blended learning group ($r = .65$), suggesting that the blended format's interactive elements enhance engagement. In contrast, the traditional learning group showed higher engagement only in instructor-led discussions, where students benefited from immediate feedback.

Qualitative Analysis: A number of recurrent themes emerge from the thematic analysis of interview data, including the blended learning group's enhanced flexibility, cooperation, and interactivity. The ability to review material at their own pace

through online exercises improved their comprehension, and engagement, according to the students in this group. The traditional learning group, on the other hand, focused on concepts like immediacy, and direct instructor support, which they believed were helpful in rapidly clearing up questions, and boosting learning confidence.

8.3. Interpretation

According to the results, blended learning has clear benefits for increasing student participation in teacher preparation courses. Because online learning components offer flexibility, and opportunity for self-regulation, the mixed group exhibited higher levels of engagement. According to constructivist principles, which prioritize learner-centered, and self-directed engagement, blended learning's interactive features seem to motivate students to actively participate, and work together with their peers.

Conversely, while traditional learning shows strength in instructor-led interactions, its fixed structure may limit student's ability to engage independently, which is crucial for building teaching competencies. These results suggest that a hybrid approach, balancing online autonomy with in-person support, may be optimal in enhancing student engagement in teacher training programs. Integrating digital tools in a structured, supportive environment could improve overall engagement, enabling teacher trainees to actively participate, collaborate, and self-regulate effectively.

IX. DISCUSSION

The results of this study show that, especially when it comes to cognitive, emotional, and behavioral aspects, blended learning can greatly improve student involvement in teacher preparation programs. According to previous research, the blended learning strategy, which combines online, and in-person training, provides a special balance of flexibility, and interactivity that traditional approaches might not be able to provide (Garrison & Kanuka, 2004; Boelens et al., 2017). These results are consistent with those findings. In teacher training environments, where promoting engagement is crucial for enhancing teaching abilities, and pedagogical confidence, this study advances the field by offering particular insights into how blended learning impacts engagement.

9.1. Cognitive and Self-Regulated Engagement

Because online modules allow for self-regulation, and pacing, the results show that students in the blended learning group had increased cognitive engagement. Constructivist ideas, which contend that students build knowledge more successfully when they have authority over their learning environment, are consistent with this (Piaget, 1970). Blended learning efficiently blends cognitive presence (via online self-paced modules), and teaching presence (through instructor-led sessions), which reinforces learning. This is further supported by the Community of Inquiry approach. Students were able to improve their cognitive engagement by better internalizing the subject through material review, and online exercises.

9.2. Social and Emotional Engagement

Because online forums, and conversations are participatory and collaborative, the blended learning group exhibited greater emotional, and social involvement, according to the qualitative data. Through discussion boards, group projects, and online comments, students in this group said they felt closer to their peers, enabling them to engage, and assist one another's learning. This engagement aligns with (Vygotsky,1978) social constructivism, which posits that social interaction is key to learning. However, the traditional learning group also benefited from in-person, instructor-led discussions, which provided immediacy, and a strong sense of instructor support, suggesting that emotional engagement may vary depending on the learner's preference for face-to-face interaction.

9.3. Implications for Teacher Training Programs

Because engagement is crucial for skill development, the results show how blended learning can improve teacher preparation programs. Improved retention of teaching competencies, more motivation, and deeper comprehension can result from higher levels of blended learning engagement. In light of these advantages, educational institutions ought to think about using blended learning strategies that incorporate both traditional classroom instruction, and online material. This method would enhance the interpersonal skills, and classroom management strategies that are essential for aspiring teachers in addition to encouraging self-control, and independent study.

But the study also emphasizes how crucial it is to strike a balance between instructor presence, and online flexibility. As can be seen, the framework of the traditional learning environment provides useful immediate feedback, which is advantageous for students who might find self-paced learning difficult. In order to overcome these difficulties, and guarantee that teacher candidates receive constant assistance throughout their educational journey, blended courses with integrated, real-time instructor engagement, and frequent check-ins could be created.

X. CONCLUSION

The effect of blended learning versus traditional learning methods on student participation in teacher preparation programs was investigated in this study. Because of its flexibility, interactivity, and ability to regulate oneself, blended learning has been shown to improve cognitive, emotional, and behavioral engagement more successfully than traditional learning. Through blended learning, teacher candidates can experience self-paced learning, collaborate with peers, and deeply engage with the course material, all of which are essential qualities for their future teaching professions.

The results imply that adding online elements to teacher preparation programs can improve learning outcomes, and foster the growth of critical teaching skills. The study does, however, also emphasize the importance of balance. The structure, and in-person instructor presence of traditional learning are beneficial, particularly for students who might find self-directed

learning difficult. Thus, the best strategy might be a well-thought-out hybrid model that gives students both independence, and support while fusing the best features of blended, and traditional learning.

The relevance of blended learning in education, particularly in teacher preparation settings, is becoming increasingly clear thanks to this study. This study's emphasis on engagement encourages educational institutions to think about instructional methods, that optimize instructor presence, flexibility, and interaction in order to promote holistic skill development. Future studies with bigger sample sizes, and a range of educational settings are advised in order to gain a deeper understanding of how blended learning might be maximized in different academic domains.

XI. LIMITATIONS AND FUTURE RESEARCH

Although this study offers insightful information, it has drawbacks. The study was restricted to teacher training programs in a particular region, and the sample size was somewhat small, which could have an impact on how broadly the results can be applied. Furthermore, because of social desirability, some students may overstate their degree of involvement, which could bring bias into self-reported engagement levels.

To improve generalizability, and investigate how various blended learning methods impact participation in other educational environments, future research should take into consideration larger, more varied samples. To evaluate the long-term effects of blended learning on the competences, and professional development of teacher candidates, longitudinal studies would also be helpful. Lastly, investigating the function of technology, and how it interacts with face-to-face instruction may yield further information about the best instructional strategies for teacher preparation.

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