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READINESS VERSUS RESPONSIVENESS: EVALUATING DIVERGENCES IN BLENDED LEARNING ADOPTION AMONG JUNIOR ELEMENTARY TEACHERS

Nadia

Phd Scholar, at Shaheed Benazir Bhutto University Shaheed Benazirabad

nadia857@gmail.com

Corresponding Author: *
Nadia

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ABSTRACT

This study investigates the readiness and responsiveness of Junior Elementary School Teachers (JEST) toward blended learning in Shaheed Benazirabad district. Blended learning, combining face-to-face and online instruction, has gained global attention for enhancing student engagement and accommodating diverse learning styles. Using a quantitative approach, data were collected via a 5-point Likert survey from 200 junior and senior JEST teachers in Taluka Nawabshah and Sakrand. Independent t-tests revealed no significant differences in readiness between junior (2021–2022 recruits) and senior (2018–2020 recruits) teachers, nor in responsiveness between newly recruited male and female teachers. The findings highlight the need for improved infrastructure and targeted training programs to support effective blended learning implementation. Policymakers should prioritize internet connectivity, technological resources, and comprehensive teacher training to enhance digital literacy and educational quality.

Key Words: *- junior elementary school teachers, jest teachers responsiveness, jest teachers readiness, blended learning, secondary schools.*

INTRODUCTION

In the Information Age, technology has significantly changed education by facilitating access to information, online discussions, and international collaboration. Online learning and virtual reality enhance learning experiences, it has made learning more individualized, adaptable, and enjoyable (Yajie & Jumaat, 2023). It is impossible to overstate the value of technology in education, especially in the context of blended learning (Cahapay et al., 2020; Dehraj et al., 2021).

The roots of Blended Learning (BL) can be seen into the mid-19th era when the pioneer of distance learning introduced a way to bridge the gap between students and instructors who were physically separated, known as Sir Issac Pitman started blended learning by sending study materials to students through the mail in the 19th century. This type of learning was known as distance learning at that time. Although distance learning techniques began evolving in the 1960s and 1970s, technology did not play a prominent role until those decades. Stanford University students used videos to learn without an instructor, CD-ROMs, and websites were developed to teach outside the classroom in the 1990s, and technology has transformed Blended learning (BL) since the 2000s (Batista-Toledo & Gavilan, 2022).

The term Blended Learning means the mixture or blend of traditional face-to-face (F2F) and modern digitalized/online teaching (Tayebinik & Puteh, 2013). Let's define it further to minimize the ambiguity about its meaning. The word "blend" means "to combine" or "a mixture", it means combining two or more aspects to get accurate outcomes of something, for instance, combining teaching methods,

technologies, pedagogical approaches, etc. to transfer the quality education to students to get great learning outcomes from them (Hrastinski, 2019).

Garrison and Kanuka provided one of the first definitions of blended learning, emphasizing a balance between in person and virtual instruction. A variety of learning methods are now included in it, such as in-person, computer-based, distance learning, and mobile learning, which allows for the use of digital media both inside and outside the classroom (Batista-Toledo & Gavilan, 2022; Garrison & Kanuka, 2004).

Blended learning (BL) is method to education that connects online learning with old-style classroom tutoring. This approach has grown increasingly common in modern time period as technology has made online learning more accessible and effective. Blended learning provides students with the ease and suitability of virtual learning, while still allowing for the benefits of face-to-face interaction with instructors and peers (Singh et al., 2021).

As a result, a variety of blended learning (BL) models have emerged. One well-liked approach is the "flipped classroom" where pupils first study the course materials on their own, then participate in live classes where they actively apply what they have learned through group projects and discussions. With this technique, learning may be more individualized and engaging (Low, Lee, Sidhu, Lim, Hasan, & Lim, 2021). In the "Online Discussions and Collaborative Projects" approach the use of internet forums and group projects is an additional noteworthy strategy. With the help of these activities, students can communicate meaningfully and share information with instructors and classmates in virtual settings. Online discussions give room for in-depth discussion and critical thinking, whereas group projects promote cooperation and problem-solving abilities (Castroa, et al., 2020). Many institutes offer "blended online and in-person courses", this is the third approach where some of the material is taught online but other parts need in-person interaction. With this strategy, students have flexibility while still receiving the advantages of face-to-face training (Littenberg-Tobias & Reich, 2020; Chung, & Gao, 2022; Hall, 2022). Lastly, "mobile technology and virtual simulations" can be used by blended learning (BL) to improve learning opportunities. Students may use educational apps, take part in computer simulations of real-world situations, or engage in virtual experiments. These innovations enable anytime, anywhere access to educational information and encourage active learning (Botelho et al., 2022). One of the best examples of virtual simulation is the website "Online Labs" which was developed by Amrita Vishwa, I personally experienced this website in her teaching and learning process.

Blended learning takes online learning to the next level by integrating it with traditional classroom instruction. In a blended learning environment, students typically spend part of their time in a physical classroom with an instructor and part of their time working independently online. This allows students to receive personalized instruction and support from their teachers, while also benefiting from the flexibility and convenience of online learning (Megahed & Hassan., 2022).It is an effective approach to education, with research indicating that it can lead to improved student outcomes, including higher levels of student engagement and achievement. As technology continues to evolve, blended learning will likely become even more widespread and important in the years to come (Bhadri & Patil., 2022).

Research objectives

1) To assess the significant differences in teachers' readiness for blended learning between Junior and Senior JEST teachers at District Shaheed Benazirabad, Sindh.

2) To analyze significant differences in newly recruited male and female JEST teachers' responsiveness to blended learning at District Shaheed Benazirabad, Sindh.

Research questions & hypotheses

1) Are there significant differences in teachers' readiness for blended learning between junior and senior JEST teachers at Shaheed Benazirabad, Sindh?

a) H_1: There are significant differences in teachers' readiness for blended learning between junior and senior JEST teachers at Shaheed Benazirabad, Sindh.

b) H_{01}: There are no significant differences in teachers' readiness for blended learning between junior and senior JEST teachers at Shaheed Benazirabad, Sindh.

2) Are there significant differences in junior (newly appointed) male and female JEST teachers' responsiveness to blended learning at Shaheed Benazirabad, Sindh?

a) H_2: There are significant differences in junior (newly recruited) male and female JEST teachers' responsiveness to blended learning at Shaheed Benazirabad, Sindh.

b) H_{02}: There are no significant differences in junior (newly recruited) male and female JEST teachers' responsiveness to blended learning at Shaheed Benazirabad, Sindh.

LITERATURE REVIEW

Blended Learning (BL) is a popular strategy that incorporates Information and Communications Technology (ICT) into the educational process by combining online and conventional classroom instruction. It provides flexibility, individualized learning, and teamwork. Through collaborative platforms and online forums, students can engage in independent research, access digital tools and multimedia content, and communicate with their peers and teachers. Digital literacy is promoted, students are given the necessary skills for the digital age, and blended learning supports various learning needs and styles (Yajie & Jumaat, 2023).

There are many reasons why blended learning has become more popular recently. First off, a bigger audience now has greater access to online learning due to the widespread availability and low cost of digital devices and internet access. This opened the door for blended learning strategies that integrate face-to-face (F2F) and virtual learning (Mason & Binsardi, 2022). Due to its ability to increase student engagement and outcomes, blended learning has become more widely recognized and accepted in the educational environment (Anthony et al., 2022). The advantages of blended learning have been emphasized in numerous studies for instance, Zheng and others found that students who participate in blended learning outperform those who only receive face-to-face or online education (Zheng et al., 2021). Moreover, it has been revealed that blended learning improves students' motivation (Ma & Lee, 2021; Nugroho et al., 2023), learning achievements and behavioral engagement, and self-regulated learning techniques (Schober et al., 2008; Yu, 2021; Gooch, 2023; Ul-Hassan et al., 2023).

The popularity of blended learning has also been aided by research on efficient learning techniques. According to studies, individualized education, active learning, and student participation result in better learning outcomes. Students can participate in group projects, discussions, and practical exercises through blended learning, which also makes use of online resources and interactive multimedia content (Fryer & Bovee, 2016; Yu, 2021; Li, 2022; Massaro, 2022).

The readiness of teachers is crucial to the success of educational initiatives, including blended learning. Well-prepared teachers have the knowledge, abilities, attitudes, and flexibility to adapt to new pedagogical approaches. They can incorporate technology, create interesting online activities, and give insightful feedback. They place a high value on professional growth and look for chances to advance technological and pedagogical literacy. This preparedness fosters student engagement, fosters a positive learning environment, and maximizes the advantages of blended learning for all students (Cahapay et al., 2020; Dehraj et al., 2021). In a quantitative study titled "Pre-service Teachers Perceptions about the Use of Blended Learning in a Science Education Methods Course," blended learning's efficacy in Turkey was examined. According to the study, blended learning can increase teachers' readiness to adopt cutting-edge teaching techniques by highlighting students' favorable perceptions of them. By learning more about blended learning's benefits, educators will have a better understanding of how it can increase their readiness to meet a variety of student needs and create a more stimulating learning environment. The results also showed that some technical elements of blended learning hampered learning. By providing the right training, technical assistance, and effective tech integration into the teaching process, it will be possible to increase teacher readiness for blended learning. The results also showed that some technical elements of blended learning

hampered learning. By providing the right training, technical assistance, and effective tech integration into the teaching process, it will be possible to increase teacher readiness for blended learning. Educators and policymakers can develop effective strategies to assist teachers in embracing blended learning methodologies by looking at teachers' readiness from these angles, ultimately improving the overall learning experience for students (Yılmaz & Malone, 2020).

The potential of blended learning (BL) to increase student engagement, motivation, and accomplishment has been acknowledged by educational institutions. To address the changing demands of students, several universities, colleges, and K–12 institutions have included blended learning in their curricula. In fact, according to a 2018 survey by the Babson Survey Research Group, 73.4% of academic leaders think that blended learning is superior to fully in-person training in terms of learning outcomes (Seaman, Allen, & Seaman, 2018).

It is important to remember that implementing blended learning calls for rigorous preparation, instructional design, and continuing support for instructors and students. Designing relevant online activities, guaranteeing equal access to technology, training educators, and preserving communication and support lines for students are just a few of the factors that go into effective implementation (LaFave, 2020; Ali et al., 2023; Mariam et al., 2023; Bizami et al., 2023).

One of the quasi-experimental mixed-methods studies investigated how well blended learning compared to conventional face-to-face instruction raised pre-service elementary teachers' math proficiency and attitudes (Yudt et al., 2023). The study focused on the significance of collaboration and infrastructure for blended learning in elementary classrooms (Kitchenham, 2005). Additionally, as the use of blended learning spreads throughout US classrooms, differentiated professional development and online coaching become crucial to aid elementary teachers in its implementation (Anderson, 2020). A similar study examined the effects of blended learning on students' academic achievement and teachers' perceptions, finding positive results despite difficulties (Kundu et al., 2021). In a study that placed a strong emphasis on teacher support and encouragement, blended learning's capacity to engage students and meet classroom needs was further highlighted (Kundu et al., 2021). Overall, these studies highlight how crucial it is to comprehend the potential of blended learning and give educators all the assistance they need to successfully implement it in elementary school settings.

The chapter by Fazio and Jaipal-Jamani (2023), introduces a large-scale professional development program (PDP) using blended learning for Canadian science teachers, resulting in favorable changes in their attitudes and practices toward innovative science instruction. Yurniwati and Yarmi (2020), carried out an empirical study in Bangladesh and proposed a model for efficient synchronous and asynchronous student-teacher interaction, enhancing cognitive development in a blended learning environment. Through a design-based research project, Shin (2021), concentrated on personalized and blended learning for K–12 classrooms, analyzing perceptions to gauge program effectiveness. Furthermore, Yurniwati and Yarmi (2020), discovered that web-based blended learning significantly enhanced aspiring elementary mathematics teachers' conceptual understanding of fractions. These studies demonstrate the transformative potential of blended learning in education, with benefits for both students and teachers.

For educational institutions to successfully implement blended learning, especially during the pandemic, they must fully comprehend the attitudes and perceptions of novice teachers (Duropan & San Jose, 2022). The qualitative-hermeneutic phenomenological study examined the experiences of beginning language teachers in this setting, revealing initial confusion followed by gradual acceptance and optimism despite difficulties like problems with module submission (Duropan & San Jose, 2022). Research has also emphasized the value of professional feedback in enhancing pre service teachers' understanding of classroom management (Prilop, Weber, & Kleinknecht, 2021). Blended learning and flipped classrooms, two technology-supported strategies, have demonstrated modest gains in student

achievement and teachers' self-efficacy (Schmid, Borokhovski, Bernard, Pickup, & Abrami, 2023). The importance of social interaction and problem-solving in the learning process has been studied in the context of blended learning for English language learners using MOOCs (Syahputra & Sagala, 2022). Systematic literature reviews showed the many advantages of using a blended learning approach when teaching math, including better learning outcomes and improved thinking abilities (Helsa, Darhim, Juandi, & Turmudi, 2021). The study of preservice teachers' attitudes toward convergence also found that positive attitudes were fostered by both blended and online learning environments (Choi & Park, 2022). Overall, these studies highlight how crucial it is to comprehend teachers' experiences and offer efficient technological support for raising academic outcomes.

In general, the background of blended learning includes its historical growth, the incorporation of technology, the establishment of instructional models, and the growing acceptance of its advantages in education. To meet the demands of a variety of learners and to fully utilize the power of technology for improved teaching and learning, blended learning has developed. Blended learning, which combines the greatest elements of in-person instruction and online learning, is still reshaping the educational environment and has great potential for the future.

METHODOLOGY

This study was designed quantitatively and paper based survey was used for the data collection from Junior Elementary School Teachers (JEST) of district Shaheed Benazirabad in order to analyze the readiness and responsiveness of teachers for blended learning. The population of the current study were newly appointed (in 2021-2022) junior JEST teachers and previously appointed senior (in 2018-2020) JEST teachers working in secondary schools. The researcher was also the part of both population and sample. The researcher had chosen a manageable and representative portion of a population that the researcher investigated to conclude a broader group without having to study every school or individual within the above-mentioned population.

Sample size

The researcher selected the sample using the non-probability sampling technique known as convenience sampling based on their accessibility and convenience. In this method, the researcher selected the subjects that are most accessible, frequently because they were easily accessible or needed less work to be included in the study due to unknown population size, lack of complete and accurate data about population, time, money, and lack of resources. The sample size were (n=200) Junior Elementary School Teachers (JEST) had chosen as a sample from the most convenient secondary schools of two Talukas of district Shaheed Benaziraabd i.e. Sakrand and Nawabshah.

Survey Instrument

The researcher herself visited the convenient schools for the purpose of primary data collection with the help of adapted five point Likert Scale questionnaire. The instrument adapted from Al-Hyari's (2020) study and Howard's (2021) study.

DATA ANALYSIS

The data were analyzed with the help of SPSS-21, inferential statistics were used and independent sample t-test were calculated and presented in tables. The validity and reliability of the instrument were also checked under the supervision of educational experts. The Cronbach alpha was measured by using SPSS and it was 0.174 that indicated the instrument was reliable.

Table 1

Gender * Appointment Crosstabulation				
Count				
		Appointment		Total
		Year 2021 - 2022	Year 2018 - 2020	
Gender	Male	61	32	93

	Female	65	42	107
Total		126	74	200

Table 1 shows the crosstabulation of participants' gender and appointment year. There were 61 newly appointed JEST male and 65 newly appointed JEST female participated while 32 senior JEST male and 42 senior JEST female participated. The total (n=200) JEST teachers participated in current research study.

Table 2

Group Statistics					
	Appointment	N	Mean	Std. Deviation	Std. Error Mean
Readiness_of_JEST_Teachers	Year 2021 - 2022	126	1.8066	.42547	.03790
	Year 2018 - 2020	74	1.8636	.35553	.04133

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Readiness_of_JEST_Teachers	Equal variances assumed	4.026	.046	-.970	198	.333	-.05700	.05874	-.17284	.05885
	Equal variances not assumed			-1.016	175.101	.311	-.05700	.05608	-.16768	.05368

Table 2 shows that, an independent samples t-test was conducted to compare the significant differences in the readiness to blended learning of junior (newly recruited, the year 2021-2022) and senior (recruited in 2018-2020) JEST teachers. There were no significant differences in the readiness to blended learning of junior (M=1.8066, SD=0.42547) and senior (M=1.8636, SD=0.35553) JEST teachers; t (198) = -0.970, p=0.333. The results suggest that there are no significant differences in the junior (newly recruited, the year 2021-2022) and senior (recruited in 2018-2020) JEST teachers in readiness for blended learning, and it is concluded that the alternative hypothesis is rejected while null hypothesis is accepted because the p-value is greater than 0.05 (p > 0.05) which provides higher evidence for the rejection of the alternative hypothesis (Ha).

Table 3

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Responsiveness_of_JEST_Teachers	Male	61	3.2545	.30450	.03899
	Female	65	3.1595	.34210	.04243

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Responsiveness of JEST Teachers	Equal variances assumed	.859	.356	1.643	124	.103	.09502	.05784	-.01946	.20949
	Equal variances not assumed			1.649	123.663	.102	.09502	.05762	-.01904	.20907

Table 3 shows that an independent samples t-test was conducted to compare the significant differences in the responsiveness to blended learning of junior (newly recruited, year 2021-2022) male and female JEST teachers. There were no a significant differences in the responsiveness to blended learning of junior (newly recruited, year 2021-2022) male (M=3.2545, SD=0.30450) and female (M=3.1595, SD=0.34210) JEST teachers; t (124) =1.643, p=0.103. The results suggest that there are no significant differences in the junior (newly recruited, the year 2021-2022) male and female JEST teachers in responsiveness to blended learning, and it is concluded that the alternative hypothesis is rejected while the null hypothesis is accepted because the p-value is greater than 0.05 ($p > 0.05$) which provides higher evidence for the rejection of the alternative hypothesis (H_a).

DISCUSSION

In this research two different questions were developed and analyzed. First question developed and analyzed the significant differences between senior and junior JEST teachers' readiness in blended learning.

The results of analysis in this regard shown that these two variables i.e. juniors' and seniors' readiness in blended learning are not significantly different. In general, it has been analyzed that both junior and senior teachers are not ready to use blended learning in their classrooms due to lack of confidence and ability to use technological equipment for blended learning.

Second question developed and analyzed the significant differences between newly appointed (junior) male and female JEST teachers' responsiveness in blended learning. The results of analysis in this regard shown that these two variables i.e. junior males' and junior females' responsiveness in blended learning aren't significantly differ. In general, it has been analyzed that both junior male and female teachers having highly positive attitudes for blended learning and they were in favor of the usage of blended learning in classrooms with proper guidance and trainings.

This study shows that JEST teachers have generally good attitudes regarding using technology for teaching and favor blended learning. The execution of curricula and the control of interaction are two areas where they lack confidence. Notably, there are no appreciable distinctions between junior and senior JEST teachers in terms of their level of preparation for blended learning. Even though respondents recognized blended learning's advantages, such as time savings and technological advancement, they also pointed out its drawbacks, including instructional clarity and sluggish internet connectivity. The study's overall findings stress the need for focused training and infrastructure upgrades to fully realize blended learning's promise of improved educational quality.

In key findings, this study offers a detailed analysis of JEST teachers' readiness and responsiveness for blended learning in the setting of Talukas Nawabshah and Sakrand. The results reveal that although JEST teachers typically recognize the benefits of blended learning, they encounter difficulties in actually putting it into practice, particularly when it comes to adapting the curriculum and creating a supportive online learning environment. In

addition, issues with technicality and internet speed need to be solved.

CONCLUSION

In conclusion, these results shed important light on the participant's demographics, readiness and level of comfort with using technology for teaching, and perceptions of blended learning with a focus on both its benefits and drawbacks, these findings painted a complete picture of how participants saw blended learning. While blended learning is widely appreciated due to its efficacy and demand, it is evident that there are also technical and instructional issues that must be resolved to maximize its advantages for both teachers and students. Regardless of their degree of experience, the research shows that all JEST teachers require focused support and training to close the confidence gap. Ultimately, as educational institutions and policymakers manage the integration of technology and blended learning into the educational system, grasping these lessons are essential.

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