Research Article

THE EFFECTIVENESS OF PLACE-BASED EDUCATION WITH TECHNOLOGY TO IMPROVE SCIENCE LEARNING ACHIEVEMENT OF GRADE 5 BHUTANESE STUDENTS

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ABSTRACT

This study explored the effectiveness of place-based education with technology to improve science learning achievement and satisfaction of grade 5 Bhutanese students. The study employed a mixed-methods design with 31 grade 5 research participants from one of the primary schools in the central part of Bhutan over a period of 4 weeks. The purposive sampling technique was utilized since there was only one section of grade 5 in the school. The learning achievement tests were conducted to collect quantitative data and semi-structured interviews to collect qualitative data. The quantitative data was analyzed using a paired sample t-test, and the qualitative data was analyzed using thematic analysis. The data analysis of the learning achievement tests showed that the mean score of the post-test (17.98) was much higher than the pretest (10.03). The data also revealed the mean difference of 7.95 and the significance (p) value of 0.01, which indicated that place-based education with technology was efficacious in improving the learning achievements in science. Similarly, the findings from the semi-structured interview discovered that the research participants had remarkable learning satisfaction. Therefore, the findings of the study highlighted that place-based education with technology was one of the teaching approaches that improved learning achievement and enhanced students' learning satisfaction in learning science.

Keywords : place-based education, technology, learning achievement, learning satisfaction

1. INTRODUCTION

The journey of modern education in Bhutan began during the reign of the first King Gongsa Ugyen Wangchuck (1907–1926), who established a school in the Haa region. According to Tshering

(2017, as cited in Tenzin, 2023), in 1961, the third King Jigme Dorji Wangchuck instituted the nation's modern education system with the implementation of the First Five-year Development Plan. In preparation of the future requirement for the technical competence, Bhutan implemented science education using a curriculum that was adapted from India (Childs et al., 2012). Science curriculum in Bhutan had undergone several changes focusing on competency-based learning and was revised to address the challenges to prepare the students for the twenty-first century era. These changes were focused on competency-based learning which fosters critical and analytical thinking. These changes are a part of a broader effort to modernize Bhutan's educational system while upholding traditional values, and they are being made continuously in response to feedback from educators and stakeholders (Tenzin, 2023). Additionally, the reforms were also motivated by the need to enhance its quality, contextual relevance, tackling problems like overload, fragmentation, and the absence of inquiry-based learning (Dorji et al., 2022).

Despite several revisions and reforms, science is still regarded as one of the most challenging subjects for Bhutanese students. According to the result analysis of Ministry of Education and Skills Development (MoESD) in grade 6 common Examination conducted by Bhutan Council for School Examination and Assessment (BCSEA) in the year 2023, the national average score in English was 71.69%, Dzongkha 73.91%, Social Studies 73.81%, Mathematics 69.56%, Science 68.06% and ICT with 63.58% (Ministry of Education and Skills Development [MoESD], 2024). In 2024, the national average score in English was 71.92%, Dzongkha 73.22%, Social Studies 77.96%, Mathematics 66.14%, Science 68.44% and ICT 67.09% (MoESD, 2025). In this study, the result analysis for grade 6 common examination is mentioned only for two consecutive years since it was discontinued in the year 2006 and later reinstated in the year 2023. The average mean marks of science in the nation were also low compared to the other subjects like English, Dzongkha, and Social Studies. According to the Programme for International Student Assessment for Development [PISA-D] (2017), students in Bhutan scored 45.1% in scientific Literacy. The score was significantly below OECD (Organization for Economic Co-operation and Development) average and the best education systems in Asia (Bhutan Council for School Examinations and Assessment, 2019).

As stated by the Royal Education Council (2023), science is often perceived as a complex and challenging subject, making it difficult for students to comprehend and engage with. This perception presents a significant obstacle to educators' efforts in their mission to foster positive scientific beliefs and attitudes among young learners. Such generalizations have led many students to avoid experiential learning and science-related pursuits in favor of subjects perceived as easier. Therefore, it is essential to reform science education that stimulates curiosity and exploration among learners. There are also well-documented studies of diminishing interest in science and

science-related activities in primary schools (Jarvis & Pell, 2002). The diminishing interest in learning science was due to the traditional method (lecture method) of teaching and learning which is confined within the four walls of the classroom. This method often fails to promote student engagement, learning by doing, long term retention and also critical thinking. Consequently, the desire and interest to learn science decreases, limiting their interaction with scientific content and hindering their ability to apply scientific knowledge to real-world challenges (Freeman et al., 2014).

The global education landscape, including Bhutan exhibits demand for an approach that enhances relevance, interactivity, and efficacy of science education to improve students' learning achievement. To address these challenges, integration of place-based education (PBE) with technology presents a promising solution. Studies indicated that place-based education is the foundational element to instruct various subjects, including language arts, Mathematics, Social Studies, and Science. By emphasizing on engaging, practical learning experiences situated in the local environment, this approach improves learning achievement while fostering stronger connections between students and their communities (Sobel, 2004).

In the context of education, technology goes beyond just the tools that are utilized; it also encompasses the comprehension of how these tools can be effectively woven into teaching methods to improve learning achievements (Mishra & Koehler, 2006). So, technology like Google Lens can be integrated with a place-based education approach. Though the use of Google Lens technology for teaching and learning might seem outdated technology in the developed countries during the post pandemic era but not for the underdeveloped and developing countries. In Bhutan, Rigzin (2021) states that even basic media, such as recorded audio clips, rhymes, and texts, as well as technology, such as PowerPoint presentations and brief video clips, were rarely utilized in Bhutanese classrooms, particularly in primary schools. Even though most schools have projectors, they are frequently underutilized in primary schools. So, Google Lens technology can still be used in Bhutan for teaching and learning as it is one of the developing countries.

Integration of PBE with technology can produce a distinctive educational experience that teaches students how to apply reliable data to practical exercises and environmental exploration (Desamito, 2022). According to Eijck and Roth (2010, as cited in Coughlin & Kirch, 2010), PBE would help to improve the academic learning achievement of the students through active learning, learner-centered learning, and learning through hands-on experiences using real world challenges. Technology can also aid to improve learning achievement for students by facilitating interactive experiences, giving them access to a wealth of materials, allowing for personalized learning, and encouraging critical 21st-century skills (Kalyanai, 2024). Studies indicate that the integration of technology can positively influence students' learning achievement. According to

Carle et al. (2009, as cited in D'Angelo, 2018), students who studied academic content in the classrooms integrating technological tools exhibited better achievement compared to their peers in traditional, non-technological settings. Similarly, Heafer (2004) states that technology enhances students' ability to access a wide range of information and resources, thereby enabling more in-depth exploration of the subjects from diverse perspectives. Carstens et al. (2021) also asserts that the integration of technology enables students to interact with global perspectives, thereby enhancing their educational experiences from local to global contexts.

Place-based education with technology not only improves academic learning achievement but also stimulates interest and motivation to learn science using concrete scientific ideas about the rich natural biodiversity in the community. According to the studies, PBE makes abstract scientific ideas concrete by assisting students in contextualizing their learning in real-world situations (Semken & Freeman, 2020). By integrating PBE with modern technology, it enables dynamic learning and further boosts students' motivation (Tilhou, 2023). It also improves learning by encouraging motivation and engagement through individualized and interactive experiences (Kalyani, 2024). Therefore, PBE with technology was seen as one of the potential solutions to improve students' learning achievement and satisfaction to learn grade 5 science.

2. RESEARCH OBJECTIVES

This study aimed to investigate the effectiveness of place-based education with technology to improve science learning achievement of grade 5 Bhutanese students by addressing the following objectives:

2.1 To investigate the effectiveness of place-based education with technology to improve science learning achievement of grade 5 Bhutanese students.

2.2 To investigate grade 5 Bhutanese students' satisfaction towards using place-based education with technology in learning science.

3. SCOPE OF THE STUDY

The scope of the study comprises location, population and sample, content, and time frame of the study. The study was carried out in one of the primary schools of Bumthang district which is located about 7 kilometers away from the main town in the central part of Bhutan. This research utilized purposive sampling and 31 students were selected to participate in this study.

The study was conducted in science subjects developed by the Royal Education Council, Ministry of Education and Skills Development (MoESD). Four lesson plans were designed to

investigate the effectiveness of place-based education with technology. The study took place over a month with 50 minutes of 2 periods every week. The data were collected during the summer semester of the academic year, 2025.

4. RESEARCH QUESTIONS

4.1 To what extent does the use of place-based education with technology improve the science learning achievement of grade 5 students in Bhutan?

4.2 How do grade 5 Bhutanese students exhibit satisfaction towards learning science after using place-based education with technology?

5. CONCEPTUAL FRAMEWORK OF THE STUDY

In this study, there were two variables; independent variable and dependent variables. The application of place-based education with technology was an independent variable where technology was used to identify plants grown in their community. Whereas students' learning achievement and satisfaction were dependent variables.

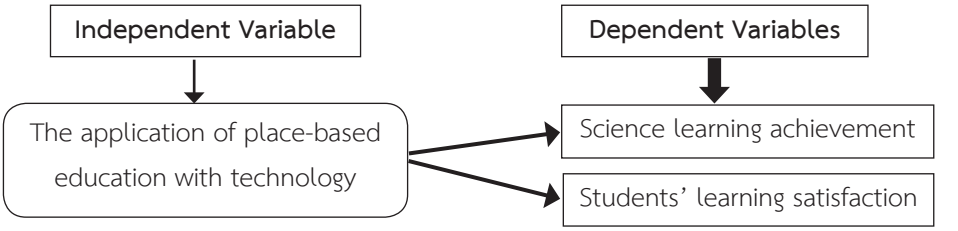

Figure 1 Independent and Dependent Variables.

6. RESEARCH METHODOLOGY

6.1 Research Design

The research design of this study was a mixed methods design. According to Leavy (2017), a mixed methods research design is an extensive method that combines qualitative and quantitative research techniques in one study. George (2025) also states that mixed methods research integrates aspects of both quantitative and qualitative approaches to address our research questions. By combining these two methods, it can provide a more comprehensive understanding than a singular quantitative or qualitative study, as it harnesses the advantages of both approaches.

The study utilized mixed methods design to have a deeper comprehension of the data. The achievement tests (pretest and posttest) were used to collect quantitative data and semi-structured interviews with all the students were used to collect qualitative data. Therefore, both quantitative and qualitative data were collected to investigate the effectiveness of PBE with technology to improve science learning achievement of grade 5 Bhutanese students.

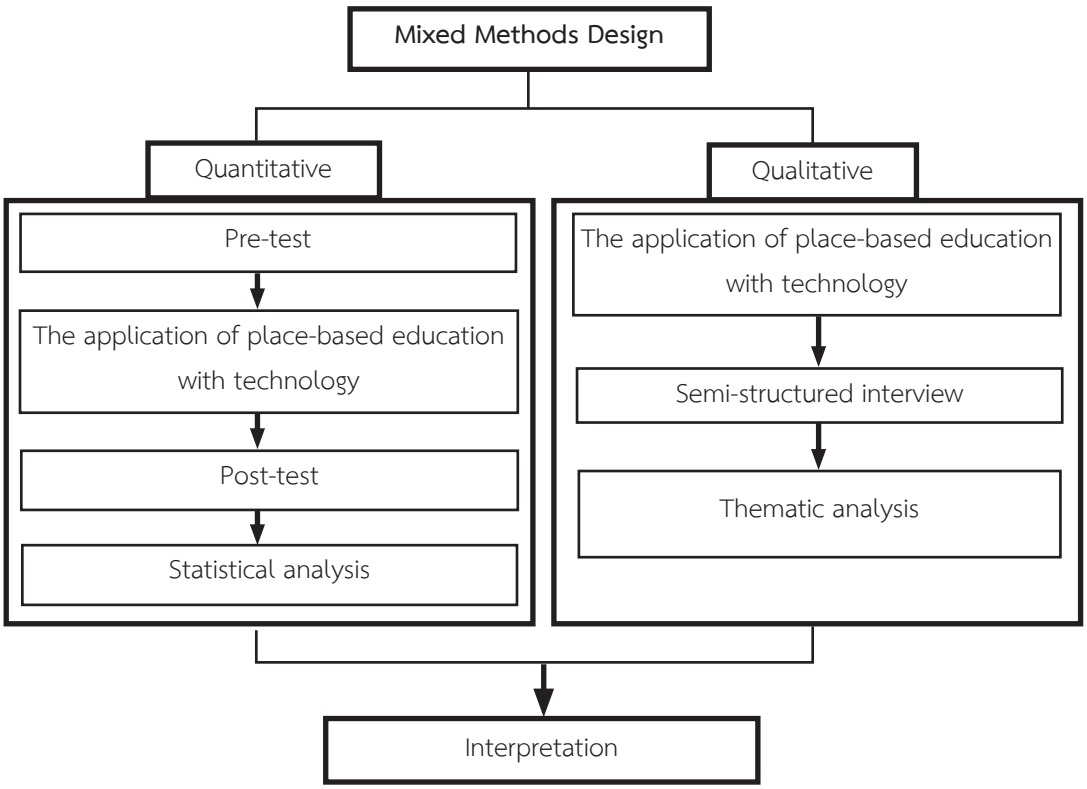

Figure 2 Research design of the study.

6.2 Research Instruments

In this study, three research instruments were used to collect the data. The data were collected from lesson plans, achievement tests before and after the treatment (pretest and posttest), and semi-structured interview. The learning achievement test and semi-structured interview were conducted to investigate the effectiveness of PBE with technology (Google Lens) to improve learning achievement and learning satisfaction in science with grade 5 Bhutanese students.

Lesson Plans: The study used four lesson plans of 100 minutes each. The lesson plans were taught for 4 weeks with 2 periods each in a week so each period was allotted 50 minutes. It was designed to teach green plants from strand one (life process) which is a part of curriculum developed by the Royal Education Council (REC).

Learning Achievement Tests: The learning achievement tests (pretest and posttest) were used to collect the quantitative data of the study. The test consisted of 25 marks and the test items were developed using the guidelines of BCSEA and Bloom's taxonomy. It consisted of 5 marks for multiple choice questions, true or false questions, fill in the blanks and 10 marks short answer questions. The pretest was conducted before the intervention and posttest was conducted after the intervention using the same questions. The data from the pretest and post were compiled and analyzed using paired sample t-tests.

Semi-structured Interview: According to George (2023) a semi-structured interview is a tool for collecting data that depends on posing questions within a pre-established framework of themes. The study used semi-structured interviews to investigate the learning satisfaction of Bhutanese students in grade 5 science using PBE with technology (Google lens). The interview was conducted face to face with each participant using 5 questions and based on 4 themes: students' curiosity and interest, desire to learn, conceptual understanding and learning preferences. The researcher was also open to any other themes that may arise during the course of the semi-structured interview. The research participants were given a choice to answer either in English or Dzongkha (National language of Bhutan).

6.3 Data Analysis:

To analyze the data, the study focused on two research objectives that were to improve learning achievement and investigate learning satisfaction of the research participants. The quantitative data analysis for the learning achievement test (pretest and posttest) was done using paired sample t-tests. The mean, standard deviation, and significant value of pretest and posttest were calculated in order to do a comparative statistical analysis. The qualitative data for students' learning satisfaction was collected through the semi-structured interview with the research participants. The semi-structured interview was conducted by one of the colleagues from the researcher's school to get authentic data and also to avoid bias among the students. All the responses were recorded in audio during the time of interview and later translated and transcribed in English. The data was analyzed using a thematic analysis approach with the themes and patterns through the coding system.

6.4 Validity:

Content validity refers to how well an assessment tool accurately reflects and represents the specific construct it aims to evaluate (Rusticus, 2014). The content validity of these research instruments like lesson plans, test items and semi-structured interview questions were validated by three experts. The experts were a professor from Rangsit University, Thailand, and two Principals from Bhutan with Master Degrees from the Royal University of Bhutan. The validation of these research instruments was done using Item Objective Congruence (IOC). The average result of IOC for all the 4 lesson plans, learning achievement test questions, semi-structured interview questions by three experts were +1 indicating that the research instruments were congruent.

6.5 Reliability

To check the reliability of achievement test questions, the researcher carried out a pilot test. The test was conducted out of 25 marks using the pretest and posttest questions with 30 grade six students studying in the same school before the intervention was carried out. Kuder Richardson formula (KR-20) was used to check the reliability coefficient of the learning achievement test. In this study the KR-20 coefficient for the instrument was 0.73 which was greater than 0.70 showing that the test items were reliable for future use.

6.6 Ethical Consideration

The researcher sought approval from the Research and Development Institute of the Rangsit University, Thailand and from the Ministry of Education and Skills Development (MoESD) in Bhutan. Furthermore, the researcher sought approval from the District Education Officer, Principal and the subject teacher concerned. The researcher also consulted and sought approval from the parents and guardian to conduct the study since the research participants were below the legal age. All the necessary approval from different stakeholders were sought before the process of data collection procedure and kept by the researcher throughout the study. The anonymity and confidentiality of the research participants were maintained throughout the study by using codes instead of using their personal information. The codes were given starting from A001 to grade 6 students and B001 to grade 5 students.

7. RESEARCH RESULTS

7.1 Result of learning achievement test (Quantitative data)

The first objective of this research was to investigate the effectiveness of PBE with technology to improve science learning achievement of grade 5 Bhutanese students. To collect the data on learning achievement, pretest and posttest incorporating 20 questions were conducted before and after the intervention was implemented. A comparative statistical analysis of pretest

and posttest scores of the research participants was done within the group using paired sample t-tests comparing mean, standard deviation and significant value.

Table 1 Paired sample t-test analysis of pretest and posttest.

Pretest		Posttest		Mean Difference	t	Significant-value
M	SD	M	SD			
10.03	2.52	17.98	3.86	7.95	16.25	0.01

Table 1 presents the findings of the paired sample t-test analysis for learning achievement of the sample group before and after the intervention. The mean score of the pretest was 10.03 whereas the mean score of the posttest was 17.98. The mean difference between pretest and posttest was 7.95. The standard deviation of the pretest and posttest was 2.52 and 3.86 respectively as presented in the table above. It was evident from the data presented in table 1, where the posttest score was comparatively higher than the pretest score with significance at the 0.01 level indicating the effectiveness of PBE with technology approach to improve learning achievement in science.

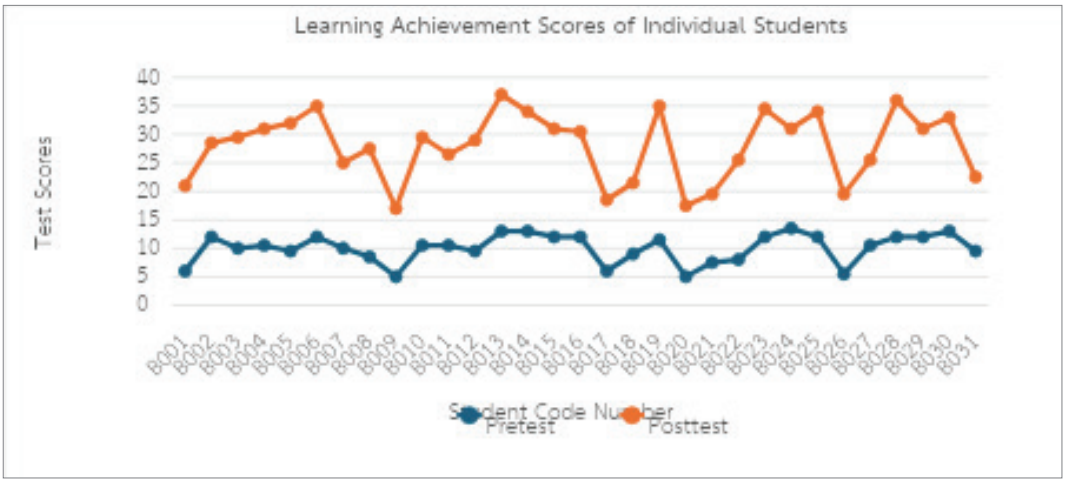

Figure 3 Learning achievement scores of individual students in pretest and posttest.

Figure 3 presents learning achievement scores of individual students in pretest and posttest. The orange line in the graph represents pretest and the blue line represents posttest for individual student's learning achievement. The gap between the two lines indicated the level of improvement made by each research participant after the intervention. The graph clearly showed that all the research participants had performed significantly better in the posttest compared to the pretest indicating positive impact of the intervention.

7.2 Result of semi-structured interview (Qualitative data)

The qualitative data of students' learning satisfaction was collected through semi-structured interviews to further respond to the second objective of the study. To investigate learning satisfaction and supplement quantitative findings of the study, five open-ended interview questions were asked as follows: (1) Have you enjoyed your science lesson? Why? (2) Did PBE with technology ignite your curiosity and interest in learning? How? (3) Did you feel motivated to explore further on the topic using place-based education with technology? Explain. (4) How did place-based education with technology help you to improve your learning experiences in science? (5) Would you prefer to learn other topics in science through place-based education with a technology approach? Why? The data were analyzed and interpreted into themes that are aligned with the research objectives and research questions of the study as follows:

(1) Curiosity and interest

All 31 research participants were captivated to learn science when PBE was integrated with technology. The learning of science became more dynamic and interesting as a result of the intervention. The research participants shared favorable responses and they expressed that learning through this approach had ignited curiosity and interest in learning science as they got the opportunity to explore the flora of their community using the technology (Google Lens). The following were the opinions expressed by the research participants.

"Yes, I have enjoyed my science lesson because I got the opportunity to do the activities outside the class and use technology (Google Lens) to learn." (Student code number: B006, personal communication, June, 10, 2025).

"It was fun to learn because technology (Google Lens) helped us to identify the names of the plants." (Student code number: B017, personal communication, June, 10, 2025).

(2) Desire to learn

Learning became satisfying and rewarding as the research participants were able to understand the concept and retain it for a longer duration. These helped them to stimulate

the desire to learn further in-depth about the topic through PBE with technology. All research participants shared that this approach provoked the desire to learn furthermore and beyond the topic. The following were opinions shared by the research participants.

"Yes, I wanted to learn more about different species of plants, flowers, animals and also about outer space." (Student code number: B004, personal communication, June, 10, 2025).

"I wanted to learn in depth about the parts of a flower and pollination." (Student code number: B024, personal communication, June, 10, 2025).

(3) Conceptual understanding

Most of the research participants shared that learning became meaningful beyond the memorization of the concepts taught. They mentioned that they were able to comprehend the concept, connect ideas, transfer and apply knowledge to solve real world challenges. They expressed remarkable learning satisfaction as this approach gave them more opportunities to interact and work with their friends which also improved their social learning through peer collaboration and discussion.

"I have learnt many names of flowers and plants grown in our community using technology (Google Lens). I have also learnt different parts of plants and flowers." (Student code number: B018, personal communication, June, 10, 2025).

"I learnt more about plants using technology (Google Lens) and I could remember the names of the plants for a longer duration since we have seen the plants in real." (Student code number: B021, personal communication, June, 10, 2025).

(4) Learning preferences

All the research participants mentioned that they preferred to learn other topics in science through this approach. Technology (Google Lens) gave access to vast resources and PBE gave them the platform to use the resources to gain on hand on experiences in learning. The access to vast resources using technology also promoted self-learning and a sense of ownership to their learning. They mentioned that they got the opportunity to go beyond the four walls of the classroom to learn by doing. The following were the opinions shared by the research participants.

"I would prefer to learn through place-based education with technology because I got the opportunity to use electronic gadgets. I understood the concept better since I got hands-on experiences to learn." (Student code number: B002, personal communication, June, 10, 2025).

"I prefer to learn with place-based education with technology because when I went outside to learn, I felt peaceful and focused. I could also concentrate and learn better. When I saw the things in real, I could remember and understand better." (Student code number: B005, personal communication, June, 10, 2025).

Since the study was open to any other themes that might come up during the interview, these are the supplementary themes that emerged during the process of semi-structured interview.

(5) Emotional well-being

Despite improving learning achievement and satisfaction, this teaching approach helped the research participants to improve their emotional well-being too. It helped them to reduce stress and promote a positive mood for learning as they had the opportunity to explore beyond the four walls of the classroom. The following were the opinions shared by the students.

"I prefer to learn with place-based education with technology because when I went outside to learn, I felt peaceful and focused. I could also concentrate and learn better. When I saw the things in real, I could remember and understand better." (Student code number: B015, personal communication, June, 10, 2025).

"I like to learn using place-based education with technology because when we go outside my mind becomes refreshed and relaxed. The technology helps us to learn independently." (Student code number: B010, personal communication, June, 10, 2025).

(6) Self learning

Some research participants shared that PBE with technology has promoted self-directed learning. The access to vast resources using technology also promoted self-learning and gave them a sense of ownership to their learning. It also helped them to explore deeper by investigating real-world challenges and developing their own solutions.

"The lesson was interesting because we went outside and used technology (Google Lens) to learn. I also knew that I could use technology to learn other topics by myself." (Student code number: B029, personal communication, June, 10, 2025).

"When we went outside, I felt calm and I was able to learn better. With the help of technology, I learnt the names of flowers and plants by myself and would be able to teach our parents too." (Student code number: B004, personal communication, June, 10, 2025).

The qualitative findings indicated that integrating PBE with technology enhanced students' curiosity, motivation, conceptual understanding, and learning satisfaction. It also promoted self-directed learning, emotional well-being, and a preference for hands-on, interactive science learning. Therefore, it was proven that the use of place-based education with technology increased the level of satisfaction of grade 5 Bhutanese students in learning science.

8. CONCLUSION AND DISCUSSION

The study revealed two key conclusions. The conclusions of the study were, teaching and learning through PBE with technology (Google Lens) to improve science learning achievement of grade 5 Bhutanese students was successful. It had a positive impact on the learning achievement and increased the level of satisfaction towards the use of PBE with technology approach.

8.1 Discussion

The study on the effectiveness of PBE with technology to improve science learning achievement was proven as one of the effective approaches for teaching and learning science after the comparative statistical analysis of learning achievement tests. The mean score for the pretest was 10.03 and 17.98 for the posttest. The mean difference between pretest and posttest was 7.95 and the mean score in the posttest was comparatively higher than the mean score of the pretest. The mean difference between the posttest and pretest obviously proved that the research participants performed better after the intervention. The significance value (p) was 0.01, which also indicated that PBE with technology was efficacious for improving learning achievement in science. The findings of the study aligned with the findings of Lee and Chiang (2016) who stated that place-based education in teaching science improved not only students' sense of place but also improved their science learning achievement. Similarly, Thinley et al. (2022) found that students' engagement and learning achievement in science was improved after using PBE as a teaching approach. These indicated that a place-based education approach had a significant effect in improving the learning achievement of the students. However, the improvement of the score of the students B001, B009, B017 and B 020 as shown in figure 3 was still below 50%. This was due to the lack of prior self learning and inquiry-based learning experiences since they were accustomed to traditional methods of teaching which were confined within the four walls of the classroom. Additionally, they had minimal experiences in using technology due to their backgrounds from economically disadvantaged families.

The semi-structured interview was conducted to investigate students' learning satisfaction towards using PBE with technology in learning science. The findings revealed that all the research participants found learning through PBE with technology was interesting and joyful. The activities

were carried out using real objects which made the learning engaging and enriching. The study also showed that learning became more meaningful as the research participants were able to understand the concepts better and retain the information for longer duration. They were motivated and their learning desire was stimulated as it provided students with opportunities to learn beyond the classroom. They expressed their desire to explore further about the topic and beyond it indicating positive learning satisfaction. From this, it was evident that PBE with technology not only improved academic learning achievement but also increased students' learning satisfaction. These results were parallel with the findings of Fu and Komatsu (2024) who supported that PBE increases students' connection to their local environment, engagement and learning which are closely linked to greater learning satisfaction. Kezang et al. (2023) also found that applying PBE principles increased student engagement and made learning more meaningful. Kolb's (1984) experiential learning theory highlights that experience is transformed into knowledge. Through local fieldwork, PBE gives students real-world experiences that are followed by reflection and conceptualization, which improves retention and meaningful learning. Technology integration also makes it possible for students to record and examine their experiences, which enhances satisfaction and engagement. The principles of place-based education proposed by Sobel (2004) emphasizes that education should be grounded in the local place, incorporating practical experiences, and cultivating a sense of connection with the environment and community. These concepts were reflected in the participants' reports of enjoyment, engagement, and curiosity, indicating that PBE with technology helps not only cognitive learning but also the emotional and motivational aspects of satisfaction. Finally, all the research participants expressed that learning through PBE with technology was more engaging and enjoyable compared to the traditional teaching approach.

8.2 Conclusion

In conclusion, the overall findings of the study revealed that PBE with technology for teaching and learning science was an effective approach to improve science learning achievement. It was evident from the mean score differences of 7.95 between the pretest and the posttest. The posttest score was comparatively higher than the pretest. The data analysis from semi-structured interviews found that the research participants were thrilled and fully satisfied exhibiting remarkable learning satisfaction to learn through PBE with technology. Therefore, this study revealed that PBE with technology was one of the effective teaching approaches for grade 5 science.

9. RECOMMENDATIONS

9.1 Recommendation for Implementation

The findings of this study revealed that students' learning achievement was significantly improved. The scores of the post-test were higher than the pre-test. Therefore, the researcher highly recommends implementing PBE with technology in teaching and learning science.

The study recommends using PBE with technology in all the primary subjects to make learning meaningful, engaging and to improve learning achievement of the students.

The leaders in the schools can encourage the teachers to use this approach since it provides an opportunity to explore and relate the learning with their own surroundings. It makes their learning relevant to the real world and ignites curiosity, interest and desire to learn.

9.2 Recommendations for Future Research: In light of some of the study's shortcomings, the researcher would like to suggest the following recommendations for the future research.

The findings of study were confined to only 31 grade 5 Bhutanese students in science from one month. Therefore, the researcher suggests conducting similar studies with a large number of sample sizes in different grades and for longer duration.

A similar study could be carried out in other subjects by integrating different technologies to the approach as it had become an integral part of human life in this post pandemic era.

The study employed only a few research instruments, which may have limited the depth of the findings. Therefore, the researcher recommends employing a variety of research instruments to collect comprehensive data and strengthen the findings.

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