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Low-ability Students' learning experiences with technology integration in post- pandemic mathematics classroom

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Abstract

The rapid growth in the use of technology enhanced learning during and following the COVID-19 pandemic has had a major impact on the way mathematics education is delivered, especially for students who have low ability. In the context of Nepal and post-pandemic, in order to integrate digital tools, opportunities and challenges were presented to learners who are struggling with mathematical concepts, digital literacy, and academic confidence. This research thus intended to discuss the lived learning experiences of low-ability B.Ed. level students when they encountered technology-integrated post-pandemic mathematics classrooms. Through the descriptive phenomenological design, data were obtained from three B.Ed. level students in the form of structured open-ended questionnaire consisting of 38 reflective questions. Their answers were analyzed by Moustakas phenomenological procedures that include horizontalization, meaning-unit extraction, thematic clustering, and synthesis of composite essence. The results showed that the learners had the enabling and constraining effects of technology. They reported better visualization, more explanatory and practice opportunities, but also reported challenges with poor internet connectivity and device limitations, low technological confidence, and emotional tension. Four central themes emerged reconstruction of mathematical identity through technology continued digital barriers, greater engagement through interactive tools, and emotional negotiation in adapting to technological learning.

Keywords: *Low-Ability Students, Phenomenology, Post-Pandemic Classroom, Technology Integration, Mathematics Education*

Introduction

The spread of the Covid-19 pandemic has created one of the most extensive and rapid disruptions to education globally in the modern history of education. School closures impacted over 1.6 billion students globally (Dawadi et al., 2020), and schools were forced to implement remote, digital or hybrid forms of education almost overnight. While technology-enabled learning aided in ensuring continuity of education, we can see from research that such changes only worsened pre-existing inequities, especially across vulnerable and low-performing learners (Di Pietro, 2023). In less-developed countries such as Nepal, a historical context of digital infrastructure inconsistency and disproportionate access has proven to present novel challenges and opportunities to mathematical learning in the post-pandemic educational set-up.

Mathematics, which is often seen as a hard and abstract subject, is particularly sensitive to disruptions in teaching delivery (Mukuka et al., 2021). Low-achieving students, also known as low-ability students (those who have difficulty meeting the expected standard for mathematical proficiency), have a tendency to need structure, feedback, and time to practice. These supports were not consistently available with pandemic-related remote learning, however (Amelia et al., 2020). As education systems return to physical classrooms, technology is still playing a large role in blended learning, digital simulations, virtual manipulatives and online assessments (Attard & Holmes, 2020). However, little is known about how such integration is experienced by low-ability students in post-pandemic mathematics classrooms, especially in the context of higher education in Nepal.

Partial insights are available from existing research. Studies show that technology has the potential to increase mathematical engagement, confidence and conceptual understanding - particularly if used in an interactive and collaborative way (Fabian et al., 2018; Ku et al., 2014; Diyal, S. B., & Pandey, R. 2022). At the same time, digital tools may also marginalize students who are not technologically literate, have access, or support (Dawadi et al., 2020; Upadhayaya et al., 2021). In Nepal, teachers themselves were struggling to adapt to digital pedagogies before and during the pandemic, but plenty of them gradually developed new competencies and resilient teaching practices (Joshi et al., 2023). For low ability learners in mathematics, the interaction of these various factors can influence the identities, emotions, and engagement of learners in profound ways.

Despite an increasing amount of global scholarship on technology-enhanced mathematics learning, there is an extremely limited body of phenomenological studies that consider the lived experience of low-ability learners, in particular in the post-pandemic context in Nepal. This gap is important as phenomenology focuses on how people interpret, feel and experience education and provides nuanced information about people's motivations, challenges and meaning-making processes.

To fill this gap, the present study examines lived experiences of three B.Ed. level students from Tribhuvan University who self-identify as low ability learners of Mathematics. Using descriptive phenomenological approach, the research investigates how these learners experienced technology-integrated mathematics classrooms after

the pandemic and how such interactions affected their engagement, emotions and perceptions regarding learning.

Research Objectives

To explore low ability students' learning experiences with technology integration in a post-pandemic mathematics classroom is primary objective of this study.

Research Questions

Based on the above mentioned objectives, How do low-ability students experience technology-integrated learning in post-pandemic mathematics classrooms? In what ways do low-ability students engage in technology-integrated mathematics classes? is considered as research questions.

Literature Review

The role of technology in mathematics learning has been given a new spotlight in the wake of the Covid-19 pandemic that compelled educational institutions across the world to rely heavily on digital tools to ensure continuity of instruction. Globally, students faced large-scale disruptions with students who were already struggling in school being disproportionately affected (Di Pietro, 2023). For instance, in Nepal where technological inequalities and infrastructural limitations have existed for long, the pandemic exacerbated the existing gaps with respect to access, digital literacy and pedagogical preparedness (Dawadi et al., 2020). Consequently, the post-pandemic mathematics classroom has become an intersection of the traditional teaching and digital platforms, online assessments and virtual learning environments. Scholars have argued all along that technology has transformative potential for enhancing mathematical understanding and enabling visualization and more opportunities for interactive engagement. Meta-analytic research studies have highlighted a positive role of digital technologies in conceptual learning, feedback cycles, and motivation if well integrated within mathematics classes (Diyal, S. B., & Pandey, R. (2024). Similarly, blended learning environments (the combination of face-to-face and online modalities) have been found to foster flexibility, self-paced learning and greater understanding as long as students are given sufficient guidance and access to supportive technological tools (Attard & Holmes, 2020). However, such benefits are not experienced uniformly as the success of technological integration is dependent on multiple factors including learner characteristics, digital readiness, teacher competency and institutional infrastructure.

Among the students who have been most affected by the swing to digital modalities are the low-ability or underachieving student in mathematics. Research shows that low achieving learners, often have difficulties with foundational concepts, low mathematical confidence and increased anxiety when engaging with the formal mathematical concepts (Shrestha et al., 2021). For these students, the disruptions in the structured learning of classroom instruction can have long-term implications especially when the shift necessitates for the student to navigate the online platforms independently or learn to use unfamiliar technological tools (Amelia et al., 2020). During the pandemic period, low-ability students often faced the challenges of

internet instability, device accessibility, and an overwhelming amount of self-directed learning demands - a set of circumstances that made remote mathematics learning especially difficult (Mukuka et al., 2021). Nevertheless, research has also suggested that, if properly scaffolded, digital tools can be used to improve mathematical understanding for low-performing learners. Interactive environments like game-based platforms have been proved to provide more motivation and confidence in mathematics, particularly if they are designed to provide gradual progression and immediate feedback (Ku et al., 2014). Likewise, digital artifacts and manipulatives support the learning on visualizing relationships and understanding abstract concepts, which reduces the cognitive load and supports the exploratory learning methods (Swidan & Daher, 2019). These results suggest that technology, if carefully implemented, could be a compensatory mechanism for some learners that normally struggle in traditional mathematics classes.

However, the trend towards digital and blended learning also brings significant barriers such that they particularly affect low ability students. Research that has been carried out in Nepalese context points out to some lingering problems such as low availability of devices, poor internet connectivity, and digital literacy among students and teachers (Dawadi et al., 2020). Graduated level researches show that most learners did not feel prepared to interact with online platforms on their own, leading to losing motivation and engagement (Upadhayaya et al., 2021). Teachers, too, experienced a steep process of adaptation, moving from a starting point of resistance to an active mediation of the use of digital tools and often learning by trial and error during and after closure of schools (Joshi et al., 2023). This unevenness in technological readiness on the part of both educator and learner created environments in which low ability students were particularly vulnerable to disengagement and academic setbacks. Evidence from studies of remote learning in mathematics indicates that learners often found it difficult to concentrate, follow instructions and receive meaningful feedback - problems that were compounded by a lack of face-to-face support for learning from many low performing students (Mukuka et al., 2021). Emotional reactions like frustration, anxiety, and fear of error in using technology also led towards inconsistent engagement levels, as was consistent with previous studies showing that low ability learners are particularly susceptible to academic and environmental disruptions (Amelia et al., 2020).

Despite these challenges, research does indicate a number of areas where technological tools can make a meaningful contribution to low ability learners when aligned to pedagogical intent. Mobile collaborative learning, for example, offers opportunities for peer interaction and exploration and encourages multimodal interaction with mathematical ideas (Fabian et al., 2018). Digital scaffolds can facilitate the mathematical potential of the learners from the lower socioeconomic background as demonstrated by Bach et al. (2025) by breaking the tasks into manageable steps, encouraging strategic thinking and mitigating cognitive load. Moreover, blended learning environments promote flexible routes for learners to go back and review content, revisit explanations and practice skills at their own pace, which may be especially helpful for students who lack foundation competencies

(Attard & Holmes, 2020). These understandings highlight the importance of teacher guiding, instructional design and the strategic use of digital tools in mathematics classrooms. Technology alone is not a way to enhance learning outcomes, but rather its value is contingent on thoughtful integration, support and responsiveness to the needs of the learner.

Across both global and the Nepalese contexts, the available literature shows consistent evidence that technology is both an enabler and a barrier for the low-ability students. When digital tools can offer clear structure, visual cues, interactive opportunities and supportive feedback, they have the potential of strengthening the mathematical understanding and engagement of learners. When poorly implemented or insufficiently supported, however, technology increases inequalities and student lack of confidence. These dual dynamics make it important to discuss not only the outcomes but the lived experiences of the low-ability learners during the technology-integrated mathematics learning period for the post-pandemic. Phenomenological research, which places emphasis on subjective perception and interpretation of meaning, is primed to shed light on the interpretation, feelings and responses these learners have towards digital tools in their mathematics classrooms. It is important to understand their experiences in order to design equitable, inclusive and effective post-pandemic mathematics instruction in Nepal and elsewhere.

Methodology

This study used a descriptive phenomenological design to examine the lived experiences of low-ability students involved in the use of technology-integrated learning in mathematics in the post-pandemic learning context. Phenomenology was chosen as it aims to find out how the individuals interpret and make meaning out of their experiences and how the researcher can capture the essence of their experiences as faithfully as possible. Guided by Husserlian principles, the researcher practiced bracketing, whereby the researcher put aside his or her own assumptions, in order to ensure that the voices of the participants emerged in their authentic form and without interpretive bias.

The participants were three Bachelor of Education (B.Ed.) students of Tribhuvan University, Nepal. Among the students selected for the research, two are students who are still being recruited by the researcher, while the third student is a student who studies at a different campus but has close family ties to the researcher. Each of the participants self-rated themselves as having low ability in mathematics based on their prior schooling experiences, performance levels and confidence in the subject. Their educational trajectories had been significantly impacted by the pandemic of the Coronavirus (COVID-19), which interrupted their learning environments as usual, and imposed new technological expectations. Participant 1 explained that he or she was moderately interested in mathematics but not really conceptually understanding; Participant 2 explained that their mathematical background was "very weak" and that it was "difficult" for them to solve problems; while Participant 3 explained that mathematics was always "challenging but manageable." Collectively, these learners were a group of people working through the

intricacies of technology-enhanced mathematics learning without much foundational confidence.

Data collection was done with a structured open-ended questionnaire that comprised 38 reflective questions. These prompts elicited participants to explain in more detail their mathematical background, familiarity with technology, learning experiences during the pandemic, engagement in the post-pandemic blended classrooms, challenges and facilitators during the pandemic, emotional reactions, and perceived changes in their learning processes: Participants responded in either English or Nepali and all responses in Nepali were translated into English for analysis. The open-ended design opened up the possibility for participants to describe in depth their lived experiences while at the same time retaining consistency in their responses.

The procedure used to analyze the data was a modified version (Moustakas, 1994) of the phenomenological analysis procedure. The process started with the horizontalization where all the relevant statements were identified and given the same importance. These statements were then grouped into meaning units that were analyzed for similarities and grouped into thematic clusters representing common patterns across the experiences of the participants. Textural descriptions were created to describe what the participants experienced based on the Participants' words, structural descriptions examined how these experiences occurred, which contextual and situational factors influenced these experiences. Finally, a composite essence was created which synthesized the essence of the low-ability learners' experiences and learning with technology-integrated mathematics learning at the post-pandemic context. Direct quotes from participants were sprinkled in throughout to retain the truthfulness of the participants' voices and to emphasize the completeness of their lived experiences.

Findings

Analysis of the responses from the study participants led to the identification of four prominent themes which describe the lived experiences of low-ability learners negotiating a technology-integrated mathematics classroom in the post-pandemic context. These themes - rebuilding the mathematical identity with technology, dealing with digital barriers and unequal access, interacting with interactive and supportive tools, adapting emotionally to technological learning - reflect this complex interaction between technology, personal confidence and learning environments. The descriptions below combine the voice of participants and interpret their experiences in a phenomenological framework.

Theme 1: Reconstructing Mathematical Identity Through Technology

Participants' experiences showed that technology played an important part in transforming the way they viewed themselves as learning mathematics. For some it was discovered that technological tools were helpful to understand things more and feel more confident, but for others the transition to digital learning served as a reminder of their long-standing academic struggles. Participant 1, for instance, indicated that "I was interested in studying various concepts and with technology it became easier to understand" which might indicate that the interactive demonstrations

and visual supports aided in turning abstract concepts into accessible content. This echoes the way digital tools can act as mediators of meaning making especially for those learners who struggled with traditional methods before.

In contrast, Participant 2 categorizes their mathematical background as weak saying that "my level in mathematics was weak, and solving problems was difficult". Despite this, they recognized that "using technology made learning easier than before", implying that there is a positive shift in self-perception due to increased access to explanations, examples or guided practice. Participant 3 echoed this sentiment and stated that "learning mathematics using technology has been very supportive and productive", which shows how technology can help low ability learners interpret their capabilities in a new light.

Overall, in this theme, it shows that the integration of technology allowed the participants to renegotiate their mathematical identities. Sometimes, digital tools became an intermediary between bewilderment and understanding and helped learners to regain confidence and reconfigure their attitude towards mathematics, as long as they were available and properly scaffolded.

Theme 2: Navigating Digital Barriers and Unequal Access

Despite the potential that technology can have on learning, there were often significant barriers that impacted on the learning experiences of the participants. These difficulties were predominantly about digital inequalities, including lack of internet connectivity, poor access to devices and digital literacy skills which impact more on those students with lower levels of academic confidence. Participant 2 emphasized the seriousness of these obstacles and stated, "There were the issues of internet connectivity, the availability of devices and understanding the lessons." Such challenges are consistent with the national realities in Nepal on the persistent digital divide where infrastructural barriers still exist to access equitable opportunities for post-pandemic learning.

Similarly, Participant 3 noted that, "most of the challenges were related to poor connections and not fully understanding how to operate some apps", which identifies both technical and cognitive barriers. Even the relatively technology comfortable Participant 1 admitted that "sometimes I was not sure about anything" which illustrates the pervasiveness of uncertainty that technology can insert, even in more familiar technological learners.

This theme suggests that technology can expand and contract the gap in learning. For students of lower abilities the lack of consistent access coupled with poor technological preparation can make this difficult and support Di Pietro's (2023) findings that vulnerable learners were disproportionately affected by learning disruptions during the pandemic. However, technology was therefore a route to opportunity and/or a possible barrier depending on students' access to stable technology tools with connectivity and supportive networks.

Theme 3: Engagement Through Interactive and Supportive Technologies

There was a shared realization among all the participants that technology improved engagement and aided understanding, if the conditions were in place for access and good instructional guidance. Participant 3 explained the positive effect of

digital learning environments: "Post-pandemic mathematics classes were mostly based on technology, and it helped me practice regularly and learn more comfortably". This is reflective of how structured digital platforms can facilitate consistent practice and independent exploration which is a must have for low-ability learners.

Participant 1 expressed similar benefits and said, "It's pretty good, as it is the world of technology which makes learning much easier," translated into increased motivation and perceived ease of learning. Participant 2 added that "technology in mathematics learning was very effective and supportive for me," which illustrates emotional and cognitive support induced by technological tools.

Participants interacted using different types of digital content, such as viewable demonstrations, online tutorials, virtual discussions using Zoom or Google Meet, online LMS-based assignments, YouTube explanations, and mobile applications. These tools offered repeat exposure to concepts, opportunities to review content and alternate pathways to comprehension. Such interaction is consistent with the existing literature that indicates interactive digital environments increase student motivation, boost conceptual understanding, and increase learner autonomy (Fabian et al., 2018; Ku et al., 2014). For the students with low mathematical confidence, these supportive features helped them to participate more and engage more.

Theme 4: Emotional Negotiation and Adaptation to Technological Learning

Participants' experiences with technology-integrated mathematics learning which were expressed with mixed emotions - with varying degrees of curiosity and enjoyment, to fear, uncertainty and technological anxiety. Participant 2 captured this ambivalence where she said, "Sometimes it was fun but sometimes I was afraid that I wasn't going to be able to use the technology." This fluctuation of emotions is indicative of tensions outlined in Self-Determination Theory where there are feelings of being competent and autonomous which influence the motivation of students to participate (Chiu, 2021).

Participant 3 offered a more positive emotional adaptation: "On the whole it was encouraging. I could adapt to learning mathematics with technology" which may suggest that through familiarity and time, there was an increase in comfort and confidence. Participant 1 was also described as being generally satisfied, but having moments of doubt, "It's pretty good, but I am not sure about everything." These reflections reveal that emotional response is quite an important factor in engagement and this is certainly the case for low ability learners who are already struggling academically.

This theme is more general in nature, in that low-achieving learners may find a higher level of anxiety when faced with unfamiliar digital tasks (Amelia et al., 2020). However, with the right amount of exposure, support, and easy to use tools, technology can also lead to positive emotions and increase learner's willingness to go after. The emotional landscape of technological learning is therefore complex because it is influenced by both possibilities of empowerment and risk of overwhelm.

Composite Essence of the Lived Experience

Taken together, the four themes provide an insight into the differences in the way low-ability learners approached the post-pandemic technological learning environment, and in terms of mathematical confidence and digital readiness. To many the incorporation of technology allowed for new ways to comprehend through visualization, repetition, and easy to read explanation. Yet persistent inequalities in access and digital literacy generated substantial barriers that sometimes exacerbated uncertainty and confirmed existing problems. Participants' experiences were characterized by tensions of emotions, of feeling motivated and overwhelmed, of feeling empowered but apprehensive, of adapting to new thought of technology. Ultimately, technology both contributed to a scaffolding support and to a challenging hurdle in a deep way that influenced the way the learners participated in, saw and made sense of mathematics in this transformed picture of education.

Discussion

The results of this phenomenological research help to understand the complexity and multiplicity of the experiences of low-ability students in the learning of mathematics with the use of technology in the post-pandemic scenario of Nepal. These experiences were formed through an intricate dynamic of opportunities and constraints, feelings of emotional ups and downs, and changing forms of engagement. While the use of technology did provide new ways to access understanding and practice in mathematical concepts, there were challenges that were presented which in some ways perpetuated pre-existing academic vulnerabilities among students.

One finding is key in relation to the extent that technology helped to change the mathematical identity of students. For some of the learners, digital tools permitted visualization and independent practice and different explanations thus resulting in a more positive relationship with mathematics. This is consistent with research that implies that technological artifacts and interactive tools can support those learners who have difficulty with abstract reasoning, in order to allow them to work on mathematical ideas in a more concrete way (Swidan & Daher, 2019). Similarly, there is some meta-analytic evidence to suggest that digital technologies facilitate conceptual understanding and academic confidence, particularly if technologies are integrated in an intelligent manner (Diyal, S. B., & Pandey, R., 2023). Participants' reflections prove these findings as several of the participants reported increased ease, clarity and comfort with mathematics tasks when supported by technology.

However, identity reconstruction was not consistent. Low-ability learners tended to express their feelings of uncertainty, fear and self-doubt in using unfamiliar digital platforms. This is in accordance with Di Pietro's results (2023) whereby the pandemic aggravated learning loss and increased academic insecurities, particularly among vulnerable students. In line with Self-Determination Theory, students' experience of competence varied according to usability of the tools, availability of support and reliability of their technological environment (Chiu, 2021). Their stories reveal that the technology had the potential to both confirm and negate their confidence according to how accessible and manageable they found it to be.

A second theme is the digital barriers that were still present for students in the post-pandemic period. Issues like unstable internet, lack of availability of devices and lack of digital literacy were common with the participants. Such challenges have been encompassing in Nepal's contexts properly where the national ICT policies are in place but the implementations have been unlevelled (Dawadi et al., 2020). Such barriers strike the low ability learners hardest, who require consistency of guidance and consistency of learning environments in order to make progress. Studies on online and distance learning related in Nepal also found that students often felt daunted by the technological demands and engagement was reduced and motivation dropped (Upadhayaya et al., 2021). The results of this study reflect these greater trends and show that low-ability learners may risk being further marginalized when educational technologies are introduced without appropriate support.

Despite these barriers, technology was also a great tool for engagement. Participants stated that they were inspired by interactive features, accessible explanations and having access to concepts in their own time. This contributes to research that mobile and digital platforms can add enjoyment and stimulate exploration and improve learner sense of agency (Fabian et al., 2018; Ku et al., 2014). For low ability learners the fact that they can pause, repeat and independently navigate through learning materials is a particular benefit. Attard and Holmes (2020) point that blended learning environments, if supported, can contribute to higher levels of engagement by permitting students to learn flexibly and meaningfully.
But engagement is not the intellectual but it is profoundly the emotional. Participants' descriptions indicate that they felt curious, enjoyed and anxious and fearful of making errors simultaneously. These emotional tensions are in line with findings by Amelia et al. (2020) who note that the resilience and emotional comfort of students in learning mathematics is often found in the emotional responses they have towards their learning environments. Digital platforms, while being empowering, can also be a cause of anxiety based on the way that unmanageable tasks appear, or based on fear of failure in connection with digital technologies. The post-pandemic learning environment, therefore, is a place of emotional negotiation, and one in which low ability learners are constantly negotiating between motivation and apprehension.

Overall, the findings are very much coherent with sociocultural and constructivist theories that call for knowledge to be influenced by the social interaction and the cultural context and access to supportive tools (Joshi et al., 2023). Technology alone cannot lead to improvement rather its effectiveness relies on how it is integrated, scaffolded and mediated by the teachers. This study assists in strengthening the demand for holistic approaches to education in the area of mathematics through the use of digital tools, which have to consider the cognitive and emotional aspects of learning.

Implications of the Study

The implications of this study are many and important for establishing the foundations of mathematics education in the post-pandemic period especially for low ability learners who are still grappling with multiple academic and technological

issues. An implication of all this is the need for more powerful technological scaffolding. Low ability students are greatly assisted by set step by step instruction when using digital tools with clear demonstrations, guided practice and simplified interfaces assisting in reducing cognitive load and supporting deeper understanding (Bach et al, 2025). Ensuring that digital resources are properly introduced step by step and explained well can help in building a lot of confidence and engagement in the learning process of those people.

Another important implication is in regards to the ongoing digital inequality in Nepal. The study adds to the burning need for institutional and government investment in reliable internet connection, low-cost devices and comprehensive ICT training programmes. As long as systemic inequities are not addressed, technology will continue to work to drive the widening of learning disparities to favor the low-ability students from disadvantaged backgrounds (Dawadi et al., 2020). Improvement of the access is therefore imperative to ensuring equitable participation in technology enhanced mathematics learning.

The results also suggest the importance of good teacher professional development in the area of digital pedagogy. Teachers need to be equipped not only to make their way through the technological tools but through them in some meaningful ways in instruction. Professional development should be based on instructional design, effective online communication and strategies on emotional support of learners that reflect the adaptation processes seen among teachers during and after the pandemic (Joshi et al, 2023). When teachers are well prepared they are better able to mediate technology use to create supportive and productive learning environments (Diyal, S.B., & Pandey, R., 2022).

Equally as important is the emotional support that is needed by low ability learners in adapting to new technological demands. The results have shown that often students are anxious, fearful and doubtful of using unfamiliar digital tools. Creating low-pressure, encouraging classroom environments can help to lower the emotional barriers and to create environments of safety and confidence. It is important to recognize and react to the emotional labor involved in adapting to technologies in order to sustain learner motivation.

A further implication is in the design and the choice of digital tools. Resources used in mathematics classrooms should be student-centered and the focus should be on ease of use, visual clarity, immediate feedback and opportunities for personalization. Tools that fit the ability and preferences of the learners are more likely to allow engagement and better learning. Finally, the study offers evidence on perpetuating blended learning as sustainable instructional model. Combining face-to-face with digital resources means that it is possible to be flexible and accessible as the learning materials are available to learners at their convenience allowing them to practice independently and receive support in the classroom and beyond. This hybrid approach can be used to help bridge the gap between traditional and technologically integrated learning of mathematics specifically for low ability students.

Conclusion

This phenomenological study helps in understanding lived experiences of the low ability B.Ed. students in a case that integrates technology in mathematics learning in a post-pandemic context of Nepal. The findings reveal the potential of digital tools as a transformative force and persistent barriers that influence engagement of low-achieving learners with mathematics. Technology provided ways for better understanding, visualization, and flexibility and allowed some learners to re-create their mathematical selves in a way that was more positive. However, technological problems (from access to emotional fears) complicated these experiences, in some cases, reinforcing student perceptions with ideas of difficulty and inadequacy.

Ultimately, the study emphasizes more the fact that technology is not a panacea and that it is not an intrinsic barrier, but it is its effect in the way it is mediated, supported and contextualized. For technology to be an equalizing and empowering force, education systems need to be based on a holistic approach that addresses technological disparities, develops teacher capacity and create emotionally supportive learning environments. As Nepal continues to move towards more digitalized forms of education, the voices of low ability learners provides important insight into how to plan for inclusive, meaningful and effective mathematics education for the future.

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