

Analysis of Psychological Preparedness of Immersive Learning Experience to Math Learners

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ABSTRACT:

Immersive learning environments are increasingly integrated into higher education programs mathematics, where students apply theoretical knowledge through laboratory activities, simulations, problem-solving tasks, and other performance-based learning experiences. Despite their instructional value, the psychological preparedness of learners entering these environments remains less examined. This study explored the psychological readiness and challenges experienced by mathematics learners during immersive learning activities. A qualitative descriptive research design was employed. The participants consisted of twelve (12) college students enrolled in mathematics programs from universities in Calbayog City, Philippines. Participants were selected through purposive sampling to ensure prior exposure to immersive academic activities. Data were collected through semi-structured interviews conducted via online platforms and phone calls and were transcribed verbatim. The data were analyzed using thematic analysis to identify recurring psychological patterns. The findings indicated that learners commonly experienced mixed emotions of anticipation and nervousness prior to immersive activities. Hesitation and reduced confidence were often associated with perceived lack of preparedness, fear of making mistakes, and social comparison with peers. During immersive tasks, students reported psychological pressure resulting from visible evaluation, sudden instructional adjustments, time constraints, and the need to integrate theoretical knowledge with practical execution. Emotional conditions such as anxiety, self-doubt, overthinking, fatigue, and frustration were found to influence concentration and performance. The study concluded that psychological preparedness plays a significant role in shaping learners' engagement and performance in immersive learning environments. Strengthening emotional readiness and confidence may support more effective participation in immersive learning experiences of Math learners.

Keywords: Psychological Preparedness, Immersive Learning Experience, Math Learners

1. INTRODUCTION

Contemporary higher education continues to transition toward experiential and immersion-oriented learning environments

designed to strengthen technical competence and professional readiness. Psychological readiness in demanding academic settings involves emotional stability, mental

preparedness, and the capacity to regulate cognitive responses when confronted with unfamiliar challenges (Carpio et al., 2024). Mamani-Choque et al. (2025) described immersive environments as instructional spaces that situate learners inside realistic problem contexts where knowledge application occurs simultaneously with task execution. Such environments demand cognitive coordination, rapid decision-making, and emotional regulation while tasks unfold in real time. Soelistya et al. (2023) further argued that immersive academic experiences expose students to complex learning conditions that require simultaneous conceptual reasoning and procedural performance. These conditions extend learning beyond theoretical comprehension toward direct engagement with technical processes and real-world problem structures. Despite the pedagogical benefits associated with immersive learning, the internal psychological condition of learners entering these environments often receives limited academic attention (Shan et al., 2026). Instructional discourse commonly emphasizes equipment, curriculum design, or technological integration while overlooking the internal readiness required to sustain effective participation. Consequently, the psychological dimension of immersion emerges as an important yet underexplored aspect of contemporary educational practice.

Psychological readiness in demanding academic settings involves emotional stability, mental preparedness, and the capacity to regulate cognitive responses when confronted with unfamiliar challenges. Greco et al. (2022) associated psychological preparedness with perceived self-efficacy, explaining that confidence in personal capability influences willingness to engage with demanding academic tasks. Gómez-Apaza et al. (2025) expanded this perspective through a discussion of self-efficacy

as a motivational construct shaping effort, persistence, and adaptive responses during challenging learning experiences. Karakuş (2024) emphasized that cognitive flexibility strengthens learner adaptability when environments introduce new or unpredictable problem conditions. Together, these perspectives suggest that psychological readiness functions as a dynamic internal state influenced through belief systems, prior exposure, and emotional regulation capacity. Without adequate mental preparation, immersive activities may generate hesitation, uncertainty, or internal conflict even before task execution begins. Such reactions do not necessarily indicate academic weakness; instead, these responses reflect the demanding psychological environment created through performance-oriented instruction. Understanding the internal experiences accompanying immersion therefore contributes to a more holistic interpretation of student engagement. Educational environments that require technical accuracy and visible demonstration of competence naturally intensify emotional responses during learning encounters.

Immersive math academic experiences frequently generate emotional tension because learning occurs within observable, performance-centered environments. Almarzouki (2024) explained that anxiety interferes with working memory processes, reducing cognitive efficiency during complex task performance. Putwain et al. (2023) reported that anticipatory anxiety often emerges when individuals interpret upcoming tasks as evaluations of personal competence rather than developmental learning opportunities. Many learners experience anxiety and reduced confidence when performing academic tasks that require real-time problem solving and evaluation. Studies indicate that

math anxiety and lack of confidence significantly influence students' engagement and performance in learning environments (Inoferio et al., 2024). Latino et al. (2025) observed that academic environments characterized through visible performance and instructor monitoring tend to increase emotional sensitivity among students. Emotional tension does not always hinder learning outcomes; moderate levels of stress may stimulate focus and effort when balanced with supportive instructional conditions. However, elevated emotional pressure without sufficient psychological preparation can disrupt concentration and hinder effective problem solving (Córdova et al., 2023). Immersive environments frequently introduce uncertainty through unfamiliar tools, complex instructions, or strict time requirements, creating additional psychological strain for learners entering such tasks. Emotional reactions therefore become intertwined with cognitive functioning during immersive academic activities. The psychological experience accompanying immersion becomes as significant as the technical task itself.

Self-doubt and social comparison represent additional psychological factors influencing learner engagement in immersive environments. Self-doubt is a common psychological barrier experienced by learners when performing tasks in front of peers or instructors. Research shows that self-doubt can negatively affect confidence, clarity of thinking, and overall performance (Berry et al., 2024). Silk et al. (2024) described Social sensitivity could 'dial up' socioemotional processes at numerous levels of complexity. If adolescents have high social sensitivity, they might be more emotionally reactive to explicit cues indicative of social inclusion or exclusion. A educational settings emphasizing public demonstration of competence may intensify concerns about

mistakes or negative evaluation. Deng et al. (2022) connected academic pressure with heightened emotional responses when students interpret performance outcomes as indicators of personal capability or identity. Such psychological interpretations often lead to hesitation before initiating tasks or reluctance to experiment with unfamiliar techniques. Academic settings requiring visible skill execution may amplify these reactions since outcomes become immediately observable within peer groups or instructor feedback. According to Downing et al. (2022), Internal comparison with classmates may further reduce confidence even when knowledge levels remain adequate for task completion. The resulting psychological tension can limit spontaneous participation and reduce willingness to take intellectual risks. Understanding these psychological influences helps clarify why immersive tasks generate varied responses among students encountering identical learning environments.

The complexity of math immersive learning increases when instructional activities demand rapid shifts between conceptual reasoning and procedural execution. Almarzouki (2024) documented that stress conditions may impair memory retrieval and reduce cognitive flexibility during demanding mental operations. Emotional stimuli competing for attention can interrupt concentration and weaken task performance efficiency. Meccawy et al. (2023) explained that learners experiencing low self-efficacy demonstrate greater difficulty integrating multiple cognitive processes during performance-based learning environments. Immersive academic tasks frequently require students to calculate, troubleshoot, analyze, and physically execute procedures within a limited time frame. When emotional tension intersects with such cognitive demands, mental overload

may occur. Cognitive overload disrupts logical reasoning, slows decision-making, and increases the likelihood of procedural mistakes. Under these circumstances, learners may experience momentary mental blocks even when theoretical understanding remains intact. The interaction between emotional pressure and cognitive complexity therefore becomes a defining characteristic of immersive learning experiences. Educational contexts within the Philippines present additional dimensions shaping learner psychological preparedness. Rungduin and Reyes (2015) discussed socioemotional characteristics of Filipino learners, noting strong sensitivity to expectations connected with academic success and social perception. Students transitioning into higher education frequently experience uncertainty when encountering unfamiliar academic demands or instructional approaches. Legarde et al. (2025) emphasized that active learning environments in Philippine higher education strengthen engagement when emotional support and instructional guidance remain present. These insights highlight how cultural values connected with achievement, family expectations, and peer perception influence student responses to demanding academic environments.

Growing academic interest in immersive learning continues to emphasize technological innovation, curriculum integration, and skill development outcomes. Positive academic effects emerging from simulation-based and experiential instructional strategies. Yet psychological conditions preceding and accompanying immersion remain insufficiently explored in existing literature. Many investigations focus on performance results or technological effectiveness rather than the internal experiences shaping learner engagement. Emotional readiness, cognitive stability, and

self-perception influence how students interpret immersive learning demands and respond to complex academic tasks. Exploration of these psychological processes offers valuable insight into student adaptation within demanding instructional environments. Inclusive and supportive learning environments play an important role in enhancing students' sense of psychological safety and readiness to participate in learning activities (Leon et al., 2024). Greater understanding of learner psychological preparedness may guide educational institutions toward supportive instructional practices that balance technical rigor with emotional stability. Such knowledge contributes to improved math learning environments where students can navigate immersive experiences with stronger confidence and mental clarity. Continued examination of psychological readiness within immersion-based education therefore provides meaningful direction for both research and instructional development.

2. LITERATURE

2.1 Emotional Readiness Before Immersion

Immersive academic activities often expose math learners to emotionally demanding learning conditions because participation requires direct engagement with complex tasks under observable instructional environments. Emotional readiness refers to the ability to regulate internal reactions when confronting unfamiliar procedures, technical instruments, or real-time problem solving. Suson et al. (2025) explained that learning environments involving direct performance evaluation often generate heightened emotional awareness among students. Awan and Nadeem (2025) described anticipatory academic stress as a psychological response that emerges when individuals perceive upcoming tasks as challenging or

uncertain. Zhang (2024) associated anxiety with increased cognitive vigilance, explaining that moderate emotional tension may encourage focused attention during demanding academic tasks. Cheng et al. (2022) emphasized that emotional sensitivity frequently intensifies when academic tasks involve visible demonstrations of competence in front of peers or instructors. A learning environments emphasizing active participation encourage deeper engagement yet may increase emotional pressure among students unfamiliar with performance-based instruction. Emotional readiness therefore becomes a significant internal factor shaping student participation in immersive learning activities. Academic tasks such as laboratory experimentation, technical simulations, or workshop demonstrations often require immediate responses, creating an environment where hesitation may affect performance outcomes. Emotional responses such as nervousness, excitement, or anticipation may arise simultaneously during these experiences. Balanced emotional regulation allows learners to transform nervous energy into productive engagement with academic challenges. Without sufficient emotional preparation, however, immersion may generate anxiety that disrupts concentration and procedural accuracy (Wu & Ma, 2025).

Emotional readiness becomes particularly relevant when academic tasks require math learners to interact with unfamiliar technologies or procedures within limited time frames. King et al. (2026) noted that stress-related emotional responses influence attention regulation and information processing during demanding activities. Self-efficacy as a psychological belief that strengthens emotional stability when individuals approach complex tasks. Sabaratnam et al. (2025) explained that confidence in personal capability influences

willingness to confront challenging academic situations. The concept of emotional adaptability, referring to the ability to adjust internal responses when environments introduce unexpected learning demands. Emotionally supportive instructional environments promote psychological resilience among learners navigating unfamiliar academic tasks. Experiential learning conditions encourage deeper knowledge construction when emotional readiness accompanies technical engagement. Emotional preparedness therefore contributes to a learner's capacity to approach immersive academic situations with clarity and stability. Technical activities that involve experimentation or troubleshooting often require learners to tolerate uncertainty while attempting different solutions (Omar et al., 2025). Emotional readiness supports persistence during these exploratory processes. Math learners are capable of maintaining calm cognitive engagement are more likely to navigate errors constructively rather than interpret mistakes as indicators of failure. As immersive learning becomes increasingly integrated into modern education, emotional preparedness emerges as a significant component supporting effective student participation.

2.2 Self-Confidence and Psychological Readiness

Psychological readiness prior to immersive learning often reflects the level of confidence learners possess regarding personal competence and ability to complete complex tasks. Confidence is important on how learners present ideas, participate in academic discussions, and perform in learning environments that require active interaction (Españo et al., 2025). Academic environments emphasizing practical demonstration frequently require students to rely on internal confidence before initiating technical procedures. Saks

(2024) described self-belief systems as cognitive mechanisms shaping motivation, effort, and persistence during difficult learning activities. Yaghoubi et al. (2025) reported that uncertainty about personal ability may trigger hesitation before individuals begin performance-based tasks. Liuhong Yan, et al. (2025) suggested that stress responses intensify when individuals interpret academic challenges as threats rather than opportunities for learning. Experiential learning conditions demand greater personal responsibility compared with passive instructional approaches. Confidence prior to immersion therefore influences how students interpret the demands of upcoming tasks. When learners approach activities with stable psychological readiness, engagement becomes more proactive and exploratory (Dong et al., 2020). Conversely, uncertainty about personal competence may generate hesitation that delays participation or reduces effort. Academic preparation alone may not guarantee confidence when unfamiliar environments introduce unpredictable conditions. Psychological readiness therefore functions as an internal condition influencing willingness to confront immersive academic challenges.

According Burton (2026), confidence development often emerges through repeated exposure to experiential learning opportunities that strengthen familiarity with technical tasks. Experiential education strengthens student competence through structured engagement with real-world scenarios. Supportive instructional environments encourage confidence development when learners receive constructive feedback during task performance. Shengyao et al. (2024) observed that academic self-doubt frequently declines when individuals gain experience navigating complex learning situations. Psychological resilience with increased willingness to attempt challenging academic tasks despite initial uncertainty.

González-Calvo (2020) noted that confidence grows when learners interpret mistakes as part of skill development rather than personal inadequacy. Confidence therefore evolves through interaction between instructional environment, learning experience, and internal belief systems. Students encountering immersive learning for the first time may experience hesitation because such environments require immediate application of knowledge. As exposure increases, psychological readiness often improves through familiarity with procedures and expectations. Educational settings encouraging experimentation and reflection help students interpret challenges constructively. Strengthening confidence prior to immersive activities allows learners to approach academic tasks with greater mental clarity and engagement.

2.3 Psychological Pressure

Immersive learning tasks often involve simultaneous cognitive and procedural demands that create psychological pressure during performance. Academic activities such as laboratory analysis, digital system troubleshooting, or technical demonstrations require learners to process information rapidly while executing precise actions. Pelegrina et al. (2020) reported that anxiety may reduce working memory capacity during complex tasks, limiting the ability to process multiple instructions at once. König et al. (2023) described stereotype threat and performance pressure as psychological conditions that interfere with cognitive functioning during evaluative situations. Roy and Swargiary (2024) emphasized that stress-related hormonal responses influence memory retrieval and concentration during demanding mental operations. Chen et al. (2024) discussed attentional interference as a phenomenon occurring when emotional stimuli compete

with cognitive task processing. A low self-efficacy with increased vulnerability to performance pressure during academic activities. Environments involving visible assessment may intensify psychological awareness among students. Immersive learning therefore places learners in conditions where intellectual understanding must coexist with emotional regulation. Technical activities that require accuracy and speed can generate internal tension when mistakes carry immediate consequences. Psychological pressure often intensifies when students perceive that instructors or peers closely observe task performance (Rožman et al., 2025). Managing these emotional conditions becomes essential for maintaining cognitive clarity during immersive academic work.

Psychological pressure does not automatically produce negative academic outcomes; certain levels of challenge may enhance concentration and motivation. Motivation and support systems significantly influence students' persistence and readiness to engage in challenging academic tasks (Chavez et al., 2023). Mesghina et al. (2022) explained that moderate performance pressure may encourage students to invest greater effort in complex tasks. Closs et al. (2022) suggested that authentic learning environments promote deeper understanding when challenges reflect real professional expectations. Immersive instruction exposes learners to practical difficulties encountered in professional contexts, strengthening problem-solving ability. Psychological resilience develops when learners gradually adapt to challenging learning environments. Schwartz (2025) connected adaptive cognitive flexibility with improved responses to demanding tasks requiring quick adjustment. Exposure to complex learning situations therefore contributes to intellectual growth when psychological support

accompanies instructional demands. Structured guidance and constructive feedback help learners interpret pressure as a component of skill development rather than a source of intimidation. Over time, repeated immersion may transform initial stress into productive engagement with academic challenges. Psychological preparedness therefore allows learners to navigate demanding tasks while maintaining cognitive focus.

2.4 Emotional States Affecting Performance

Emotional states experienced during immersive learning activities often influence the quality of academic performance and problem-solving ability. Emotional responses such as confidence, tension, or uncertainty shape attention patterns and cognitive engagement during complex tasks. Tyng et al. (2017) explained that emotional stress may alter memory processes responsible for recalling previously learned information. Santos Alves et al. (2022) connected emotional regulation with improved decision-making during stressful academic situations. Performance outcomes in immersive environments therefore depend not only on knowledge acquisition but on psychological conditions present during task execution. The math learners experiencing emotional stability often demonstrate clearer reasoning and more organized problem-solving strategies. In contrast, intense anxiety may disrupt logical thinking even when conceptual understanding remains adequate. Emotional awareness therefore becomes a significant dimension influencing performance within immersive educational environments (Singh, 2024).

Academic performance during immersive learning experiences frequently reflects the interaction between emotional regulation and technical competence.

Dalimunthe et al. (2024) emphasized that supportive instructional climates encourage students to approach challenging tasks with greater confidence. Experiential learning environments foster deeper understanding when learners feel psychologically safe to experiment and refine skills. Qi M et al. (2025) associated positive emotional experiences with increased persistence and sustained academic engagement. Emotional regulation therefore influences how learners interpret both success and error during immersive tasks. Educational settings emphasizing supportive feedback may transform mistakes into opportunities for intellectual growth. Learners who maintain emotional balance during complex activities are better positioned to sustain attention and refine technical skills. Understanding emotional influences on performance therefore contributes to more effective instructional strategies within immersive learning (Mukhemar et al., 2025).

3. METHODOLOGY

3.1. Research Design

This study employed a qualitative descriptive research design to examine the psychological preparedness of college learners engaged in immersive learning environments. A qualitative approach was considered appropriate because the investigation aimed to understand the internal experiences, perceptions, and emotional responses of learners as they encountered hands-on and experiential academic activities. Rather than measuring variables numerically, the design enabled an in-depth exploration of the mental and emotional processes that occur before and during immersive learning experiences in mathematics.

Through qualitative description, participants were encouraged to narrate personal experiences related to psychological

readiness, confidence levels, emotional reactions, and mental challenges encountered during immersive learning activities. This design allows researchers to present participants' accounts in a straightforward manner while preserving the authenticity of the data. According to Lim (2025), qualitative descriptive studies are particularly appropriate when the goal is to obtain detailed descriptions of human experiences within real-life contexts. Such an approach remains close to the participants' original narratives without imposing excessive theoretical interpretation. Within educational settings that emphasize laboratory work, technical demonstrations, and simulation-based learning, this methodological orientation provides a clear representation of how math learners psychologically respond to immersive academic tasks.

3.2 Sampling

The study utilized purposive sampling as the method for selecting respondents. This sampling technique was applied because the research required individuals who had direct experience with immersive learning activities within their academic programs. Purposive sampling enables the selection of participants who possess relevant knowledge and exposure related to the phenomenon being investigated. Alaba et al. (2026) emphasized that the credibility and depth of qualitative findings depend significantly on the appropriateness of the sampling process used to identify information-rich participants.

Not all college students are regularly exposed to immersive activities such as laboratory experimentation, technical simulations, workshops, or practical demonstrations. Random sampling would therefore increase the likelihood of including respondents who lack meaningful exposure to such learning contexts. Through purposive

sampling, participants from different universities in Calbayog City. These programs typically involve practical and immersive learning components that require active engagement and technical performance. Selecting participants with such exposure ensured that the collected narratives reflected genuine psychological experiences associated with immersive learning environments.

3.3 Participants

The study involved twelve (12) college students enrolled Mathematics programs in universities located in Calbayog City. These participants were selected because they had already engaged in immersive academic activities as part of their coursework. Such experiences include laboratory sessions, technical demonstrations, simulations, and workshop-based tasks that require active participation and performance in practical learning environments. Their direct involvement in these activities allowed them to provide meaningful insights into the emotional and mental processes encountered within immersive learning situations. College learners were specifically chosen because the early years of tertiary education represent a transitional phase characterized by increased academic demands and new forms of learning engagement. Immersive instructional activities often require technical competence, immediate decision-making, and visible performance in front of peers or instructors. These expectations can influence students' psychological responses, including levels of confidence, hesitation, anxiety, or mental preparedness. Examining the experiences of Math learners at this stage provides valuable insight into how psychological readiness develops within performance-oriented academic environments. The selected participants therefore represented individuals capable of describing both the emotional

preparation and psychological pressures encountered during immersive learning activities.

3.4 Research Instrument

The primary research instrument used in this study was a semi-structured interview guide designed to obtain detailed narratives regarding learners' psychological preparedness in relation to immersive academic experiences. The instrument focused on capturing participants' emotional states, mental readiness, confidence levels, and psychological reactions associated with practical and experiential learning activities commonly encountered Mathematics. Semi-structured interviews were selected because this format allows flexibility in exploring participants' experiences while maintaining consistency in the topics discussed across all respondents. According to DeJonckheere et al. (2019), semi-structured interviews enable deeper exploration of personal perceptions and internal experiences by allowing the researcher to ask follow-up questions that clarify or expand significant responses during the conversation.

The interview guide consisted of open-ended questions organized according to the analytical focus of the study. These questions were structured to explore learners' psychological readiness prior to participating in immersive activities as well as the psychological challenges encountered while performing such tasks. Open-ended questioning allowed respondents to describe their experiences, thoughts, and emotional reactions in their own words, providing richer and more meaningful qualitative data. As presented in Table 1, the interview guide was organized into two main components reflecting the central dimensions of the inquiry. The first component focused on learners' psychological readiness before entering immersive learning environments,

while the second component examined psychological challenges and emotional responses experienced during the performance of immersive tasks. This structure ensured that the instrument captured both preparatory mental processes and the psychological conditions that emerge during actual engagement in immersive learning activities.

Table 1. Instrument of the study

Objectives	Interview questions
1. To examine the psychological readiness of Math learners prior to engaging in immersive learning activities.	1. Before your first immersive learning activity in college, what emotions did you experience, and what do you think caused those feelings? 2. What situations or thoughts usually make you hesitate or lose confidence right before starting an immersive activity? 3. What personal routines, thoughts, or strategies do you use to mentally or emotionally prepare yourself before entering a hands-on or technical activity?
2. To analyze the psychological challenges of Math learners encounter during immersive learning experiences and how these influence their performance.	1. During an immersive activity, can you describe a situation where you felt overwhelmed, pressured, or mentally challenged? What triggered that experience? 2. What psychological struggles (such as anxiety, self-doubt, confusion, pressure to perform, or overthinking) affect you the most while

performing
immersive tasks?

3. Can you share a specific experience where your emotional or mental state directly influenced the quality of your performance during an immersive learning activity?

3.5. Data Gathering Procedure

Data collection was conducted through online interviews and phone call interviews depending on the availability and internet accessibility of the respondents. Participants who had stable internet connectivity participated in online interviews through digital communication platforms, while those with limited connectivity were interviewed through phone calls. This flexible approach ensured that all selected participants were able to share their experiences without technological barriers affecting their participation. Each interview lasted approximately 20 to 35 minutes, allowing sufficient time for respondents to narrate their experiences and reflections regarding immersive learning activities. Prior to the interviews, participants were informed about the purpose of the study and provided consent for participation and audio recording. With permission granted, all interviews were recorded to ensure accurate documentation of the responses. The recorded conversations were then transcribed verbatim, maintaining the exact wording, expressions, and sequence of the participants' statements. No summarization or alteration was applied during transcription. These verbatim transcripts served as the primary qualitative dataset for examining patterns related to learners' psychological experiences in immersive learning environments.

3.6. Data Analysis

The collected qualitative data were analyzed using thematic analysis. This analytical method was selected because it allows the systematic identification of recurring patterns and meanings within narrative data. The transcribed interviews were first read multiple times to develop familiarity with the participants' statements and contextual expressions. During this stage, the researcher carefully examined descriptions related to emotional reactions, mental preparation, psychological challenges, and personal reflections connected to immersive learning activities. After the initial review, meaningful segments of the transcripts were coded based on recurring psychological expressions and experiences described by the participants. Codes that shared conceptual similarities were grouped together to form broader analytical categories. Through continuous comparison and refinement of these categories, central themes were developed to represent common patterns across the participants' experiences. The themes were reviewed several times to ensure that they accurately reflected the narratives contained in the data. This process enabled the study to present an organized interpretation of the psychological dimensions associated with immersive learning experiences among the respondents.

3.7. Ethical Considerations

Ethical principles were strictly observed throughout the conduct of the study. All twelve participants were provided with a clear explanation of the purpose of the research, the procedures involved, and the voluntary nature of their participation. Prior to the interviews, informed consent was obtained from each respondent to ensure that participation occurred without any form of pressure or obligation. Participants were informed that

withdrawal from the study could occur at any stage without any negative consequences. Confidentiality and anonymity were maintained throughout the research process. Instead of using real names, coded identifiers were assigned to each participant in order to protect personal identities. All audio recordings and transcribed documents were stored securely and were accessible only to the researcher. The collected data were used exclusively for academic and research purposes. These ethical safeguards ensured that participants were able to share their experiences openly while maintaining privacy and protection of their personal information.

4 RESULTS

Objective 1. To examine the psychological readiness of Math learners prior to engaging in immersive learning activities.

Question 1. *Before your first immersive learning activity in college, what emotions did you experience, and what do you think caused those feelings?*

1.1 Mixed Anticipation and Nervousness

A majority of the participants described experiencing a mixture of anticipation and nervousness before participating in their first immersive academic activity. This emotional combination reflects the psychological transition learners undergo when moving from classroom-based theoretical learning to real-world or practical engagement. Circumstances often generate excitement because learners anticipate applying knowledge in a meaningful and realistic context. However, the same situation can trigger nervousness due to uncertainty about expectations, unfamiliar procedures, or the possibility of committing mistakes. The emotional overlap between enthusiasm and anxiety indicates that immersive learning environments create both opportunity and psychological pressure

simultaneously. These reactions suggest that early immersive experiences are perceived not only as academic tasks but as personal tests of competence and readiness. As a result, students often approach these activities with heightened emotional awareness, balancing curiosity with concern about how they will perform.

"Honestly, it was a mix of emotions excited but also nervous because I wasn't sure if I could meet the expectations of my professor, classmates, and even myself."

"Upon starting our first activity in Engineering, I was excited, but at the same time, nervous because I might not be able to perform well and embarrass myself if I couldn't do the task."

"Before my first biology lab, it was really mixed emotions. I was excited but also scared because I didn't know what to expect. The pressure mostly came from the fear of failing and my expectations of myself."

1.2 Anticipated Evaluation and Performance Pressure

Several participants associated their emotional responses with perceived expectations from instructors, classmates, and personal academic standards. Entering an immersive learning environment often creates the impression that performance will be immediately observed and evaluated, which intensifies psychological pressure even before the activity begins. For students enrolled in technical or scientific programs, practical tasks frequently involve visible demonstrations of competence, increasing awareness of possible judgment from others. This anticipation of evaluation can lead to heightened sensitivity toward mistakes or imperfections during performance. Learners may therefore experience internal pressure to prove that they possess the necessary knowledge and technical ability expected within their field of study. The concern about meeting academic expectations

can become a significant emotional factor influencing psychological readiness. When students believe that immersive activities reflect their capability as future professionals, the perceived stakes of the experience increase substantially. Consequently, emotional readiness becomes intertwined with concerns about academic credibility and personal performance standards.

"As a Power Plant Engineering student, I felt a heavy mix of excitement and pressure. The thought of finally applying what I learned in theory made the whole thing feel intense even before it started."

"Before my first biology lab, it was really mixed emotions... The pressure mostly came from the fear of failing and my expectations of myself."

Question 2. *What situations or thoughts usually make you hesitate or lose confidence right before starting an immersive activity?*

2.1 Perceived Lack of Personal Preparedness

Many participants described hesitation arising from feelings of insufficient preparation before beginning an immersive task. Even when students possess theoretical understanding, uncertainty about practical execution can weaken confidence. Immersive activities often require immediate application of procedures, technical steps, or problem-solving strategies, which can create psychological pressure for learners who feel unprepared. This perceived gap between knowledge and performance may trigger self-doubt and hesitation. Students sometimes question whether they have reviewed the necessary material thoroughly enough or whether they can recall procedures accurately during the activity. Such internal questioning can interrupt focus and reduce confidence just before the task begins. The anticipation of performing incorrectly may become a significant psychological barrier that discourages

immediate engagement. These responses illustrate how feelings of preparedness strongly influence learners' willingness to approach immersive academic tasks with confidence.

"Most of the time, my confidence drops when I feel like I'm not fully prepared. It's like my mind and body are not aligned to perform."

"I usually hesitate when I feel unsure about my understanding of the task. I'm worried that if I don't get it right the first time, it will affect everything. That thought alone can shake my confidence."

"Usually, I lose confidence when I feel like others are more prepared than me. If I'm not able to review the procedures, that's when I start doubting myself."

2.2 Anticipation of Errors and Consequences

Another factor influencing hesitation involves the anticipation of making mistakes during the activity. Performance-based tasks in laboratories, workshops, or simulations often require accuracy and careful execution, which can make students overly cautious. The thought of committing errors may generate anxiety, especially when learners imagine possible negative outcomes such as incorrect results, procedural disruptions, or embarrassment in front of peers. Instead of focusing on the learning process, attention becomes centered on avoiding mistakes. This mental shift can reduce confidence and delay active participation. When learners overanalyze potential problems, the immersive task may appear more intimidating than it actually is. Such anticipation reflects the psychological weight associated with practical learning environments where outcomes are immediately observable. Consequently, fear of mistakes becomes a significant barrier affecting psychological readiness before the activity even begins.

"The biggest thing that makes me pause before starting an activity is the fear of making a mistake. Sometimes it's not even a real problem, but my own mind becomes my enemy."

"Most of the time, I lose confidence when I think too much about the possible mistakes I could make. The more I hesitate, the more I realize I'm just delaying my own learning."

2.3 Social Comparison and Peer Perception

Some participants indicated that hesitation emerges when comparing personal abilities with those of classmates. Observing peers who appear more confident or experienced can create feelings of inadequacy, even when the difference in ability may not be substantial. Immersive learning environments frequently involve collaborative or observable activities, making students more conscious of how their performance might be perceived. This awareness can intensify the fear of negative judgment or criticism from others. As a result, learners may become preoccupied with how their actions will appear rather than concentrating on the task itself. The psychological effect of social comparison can therefore reduce confidence and contribute to self-doubt before the activity begins. When students interpret others' competence as a benchmark for their own ability, it may reinforce feelings of being unprepared or less capable. Such perceptions demonstrate how interpersonal dynamics influence psychological readiness in immersive learning environments.

"I usually lose confidence when I start comparing myself to my classmates who seem better. It makes me feel like I'm already behind even before starting."

"I'm afraid to be criticized, even though I know it's part of learning."

Question 3. *What personal routines or strategies do you use to mentally prepare yourself before entering a hands-on or technical activity?*

3.1 Managing Pre-Activity Tension

Some participants described using simple calming techniques to reduce anxiety before engaging in immersive tasks. These strategies focus on stabilizing emotional reactions and helping learners regain mental focus prior to the activity. When students experience nervousness or pressure, deliberate relaxation practices can help regulate breathing and slow racing thoughts. By creating a brief moment of calm, learners are able to shift their attention away from worry and toward the task at hand. Such practices demonstrate an awareness of how emotional states influence performance readiness. Managing tension before beginning an activity allows students to approach the experience with greater clarity and control. These responses suggest that emotional regulation forms an important part of psychological preparation for immersive learning. Even small personal routines can help learners restore confidence and mental balance before engaging in demanding practical tasks.

"I calm myself by breathing, even just three or four deep breaths."

"I rest for a moment before entering, literally holding onto the strap of the bag while breathing deeply."

3.2 Reviewing Knowledge Before Action

Several participants explained that they mentally prepare themselves by reviewing important concepts or procedures shortly before beginning an activity. This practice allows learners to reactivate relevant knowledge and reinforce confidence in their understanding of the task. By revisiting formulas, instructions, or procedural steps, students strengthen the connection between theoretical knowledge and practical application. The process of reviewing

information provides reassurance that they possess the necessary background to perform the activity effectively. It reduces uncertainty and helps organize thoughts before engaging in technical tasks. Cognitive preparation in this form serves as a bridge between classroom learning and hands-on performance. When learners mentally rehearse procedures or revisit key concepts, the activity becomes more predictable and manageable. Such preparation strategies highlight how knowledge reinforcement contributes to psychological readiness for immersive learning environments.

"Then I center myself by reviewing quietly the most basic steps of the activity."

"Sometimes I quickly rewrite the main formulas or concepts on a small notepad, just to give my mind a quick refresh."

3.3 Positive Self-Reassurance

A number of participants emphasized the importance of maintaining a supportive internal mindset before entering an immersive activity. Instead of focusing on potential mistakes, these learners consciously remind themselves that errors are a natural part of the learning process. This form of self-reassurance helps reduce perfectionistic pressure and encourages a more constructive perspective toward challenges. When students allow themselves the freedom to learn through trial and error, the fear of failure becomes less overwhelming. Such attitudes promote resilience and encourage continued engagement even when tasks become difficult. Accepting imperfection helps shift attention toward learning rather than evaluation. This psychological approach supports a healthier relationship with performance-based academic activities. By maintaining a positive internal dialogue, learners strengthen their confidence and readiness to participate actively in immersive learning experiences.

"I also assure myself in my mind that it doesn't have to be perfect. Just be present."

"Mentally, I remind myself that it's okay to make mistakes, because it's part of learning."

Objective 2. To analyze the psychological challenges of Math learners encounter during immersive learning experiences and how these influence their performance.

Question 1. *During an immersive activity, can you describe a situation where you felt overwhelmed, pressured, or mentally challenged? What triggered that experience?*

1.1 Visibility and Peer Observation Pressure

Several participants described moments of overwhelm occurring when their performance became highly visible to instructors and classmates during immersive activities. In practical learning environments such as laboratories, technical workshops, or simulations, tasks are often performed openly where progress and mistakes can be easily noticed. This heightened visibility increases awareness of evaluation and creates pressure to perform correctly in real time. When students perceive that their work is being closely monitored, attention may shift from focusing on the task to worrying about how their actions appear to others. Such self-consciousness can interrupt concentration and reduce confidence during performance. The feeling of being observed may therefore intensify emotional tension even when the activity itself is manageable. In these situations, the psychological challenge lies not only in completing the technical task but in coping with the awareness of public scrutiny. These experiences illustrate how social visibility within immersive learning environments can trigger anxiety and disrupt performance focus.

"When we were made to go around so they could check individually what we were doing, that's when I suddenly got nervous."

"What triggers me is the feeling that all my classmates can see my activity. You can't hide anything. I felt that my flaws were exposed, and I wasn't ready for that."

1.2 Sudden Task Changes and Time Pressure

Another situation that generated feelings of overwhelm involved unexpected changes in instructions or the introduction of strict time limits during immersive activities. When learners prepare mentally for a specific procedure and the conditions suddenly shift, they must quickly reorganize their thinking and adjust their approach. This abrupt transition can create cognitive strain, particularly when students are already focused on executing technical steps. The need to process new information while simultaneously completing the task may lead to a sense of mental overload. Under these circumstances, learners often feel that their attention is divided between understanding the new requirement and maintaining progress in the activity. Time pressure further intensifies this challenge because it reduces the opportunity to carefully analyze problems or correct mistakes. As a result, students may experience confusion, frustration, or anxiety while trying to adapt. These situations demonstrate how instability within the learning task can amplify psychological stress during immersive experiences.

"When the professor disrupted our routine by adding sudden instructions, it felt like my world suddenly shrank"

"The pressure really hit when the instructor started walking around checking our progress. I felt overwhelmed because my code kept showing errors, and I couldn't figure out why."

1.3 Difficulty Integrating Theory and Practice

Some participants explained that overwhelming moments occurred when immersive tasks required them to immediately connect practical procedures with abstract or theoretical thinking. Activities that combine hands-on work with calculations, technical reasoning, or rapid decision-making demand multiple cognitive processes at once. For students who are still developing familiarity with these tasks, switching quickly between physical actions and analytical thinking can disrupt concentration. This challenge becomes more noticeable when instructors introduce questions or additional requirements while the activity is ongoing. Learners may struggle to recall relevant concepts while maintaining accuracy in the practical component of the task. Such cognitive interruptions can create a feeling of disorientation or mental congestion. Instead of progressing smoothly through the activity, students may feel pulled between different forms of thinking that require separate mental focus. These experiences reveal how the integration of theoretical knowledge and practical performance can become a significant psychological challenge during immersive learning.

“Everything went fine at first, but when the instructor suddenly asked us to compute the efficiency on the spot, I froze. My mind suddenly felt too loud.”

“When activity and presentation begin that moment made me feel like I was being pulled in different directions all at the same time”

Question 2. *What psychological struggles (such as anxiety, self-doubt, confusion, pressure to perform, or overthinking) affect you the most while performing immersive tasks?*

2.1 Persistent Feelings of Self-Doubt

A common psychological struggle reported by participants involves persistent self-doubt during immersive activities. Even when students possess adequate knowledge or training, uncertainty about their capability to perform the task correctly can weaken confidence. This internal questioning often occurs when learners compare their progress with the perceived competence of others or when they encounter unfamiliar procedures. The belief that one's skills may not meet the expectations of the task creates emotional tension that interferes with concentration. Instead of focusing fully on the activity, attention becomes divided between completing the task and evaluating personal ability. Such internal conflict may gradually reduce motivation and willingness to take initiative during the activity. Self-doubt can therefore become a powerful psychological barrier that shapes how learners interpret challenges and mistakes. These experiences demonstrate how perceptions of personal adequacy significantly influence engagement and persistence within immersive learning environments.

“First is self-doubt. That hits the hardest. The feeling that maybe I’m not enough for the task’s expectations.”

“There are also times when confusion overwhelms me, especially when technical terms or processes are done quickly.”

“For me, self-doubt really hits the hardest. Especially when I see classmates for whom what we’re doing seems natural. I start comparing myself, which is wrong, but it still happens.”

2.2 Performance Pressure From Evaluation

Another major psychological challenge described by participants involves the pressure associated with being evaluated while performing immersive tasks. In many technical

and professional programs, practical activities serve as opportunities for instructors to observe competence directly. This environment can create anxiety because learners feel responsible not only for completing the task correctly but for demonstrating proficiency in front of others. The awareness that mistakes may be immediately noticed often increases nervousness and self-consciousness. As a result, students may become overly cautious or hesitant while executing procedures. Instead of approaching the activity as a learning opportunity, they may perceive it as a performance test. Such pressure can intensify emotional stress and make it more difficult to concentrate on the actual task requirements. These experiences illustrate how evaluation-related anxiety can significantly influence the psychological state of learners during immersive activities.

“Second is performance pressure, especially during group work. Sometimes, even if I’m capable, the idea that someone is relying on me becomes a burden instead of motivation. The fear of making mistakes in front of others also affects me.”

“The biggest struggle for me is performance anxiety. In HM, you’re not only graded based on what you know but also on how you present yourself, how you move, and how you serve. I sometimes overthink how I look while doing tasks, especially when instructors are observing.”

2.3 Overthinking and Mental Overload

Some participants emphasized that excessive thinking during immersive tasks becomes a major psychological obstacle. When learners continuously analyze possible mistakes or alternative solutions, their attention becomes fragmented. Instead of acting confidently, they may repeatedly question whether their decisions are correct. This internal dialogue can slow down progress and reduce efficiency during complex activities. Overthinking often

occurs when tasks involve multiple procedures, technical steps, or problem-solving decisions. Under these conditions, the mind attempts to process too much information simultaneously, resulting in mental overload. Such cognitive congestion can make it difficult to focus on the immediate step required for the task. When overthinking persists, learners may lose momentum and experience frustration. These responses highlight how managing cognitive load is essential for maintaining clarity and effectiveness in immersive learning environments.

“It’s difficult when your own mind is the one destroying your momentum. Sometimes it’s just minor, but in my mind it grows, to the point that I carry it over to the next task.”

“The biggest struggle for me is overthinking. In Computer Engineering, there’s not always one correct solution, and that sometimes confuses me. I keep thinking, that my logic is wrong. That leads to self-doubt and slows me down.”

Question 3. *Can you share a specific experience where your emotional or mental state directly influenced the quality of your performance during an immersive learning activity?*

3.1 Emotional Fatigue Affecting Concentration

Several participants described situations where entering an immersive activity while already mentally or emotionally exhausted affected their ability to perform effectively. Academic workloads, personal concerns, or accumulated fatigue can reduce cognitive energy even before the activity begins. When learners carry these emotional burdens into the learning environment, concentration becomes more difficult to sustain. Tasks that normally require careful attention and logical thinking may suddenly feel more complicated or confusing. As a result, students may experience slower progress or repeated mistakes during the

activity. Emotional fatigue can therefore weaken the mental focus necessary for effective task execution. Instead of approaching the activity with clarity and motivation, learners may feel disconnected or mentally distant from the task requirements. These experiences demonstrate how emotional well-being outside the classroom can directly influence the quality of performance within immersive learning contexts.

"I arrived tired and still dealing with problems at home. I didn't even realize I brought that mindset inside. When the activity started, I felt disconnected. Even with simple syntax, I kept making mistakes repeatedly."

"Yes, there's a time when I came to class mentally drained because of back-to-back quizzes in math and thermal sciences. When the immersive activity started, my mind felt foggy."

3.2 Anxiety Disrupting Skill Performance

Another theme highlights how intense nervousness during immersive activities can interfere with the execution of skills that learners already understand conceptually. Anxiety often triggers physical and mental reactions such as shaking hands, rapid thinking, or difficulty recalling familiar information. These responses can disrupt coordination and reduce confidence while performing technical procedures. Even when students possess the necessary knowledge, emotional tension may prevent them from applying it effectively. The awareness of being evaluated or the importance of the task may intensify these feelings. As anxiety increases, learners may struggle to maintain steady focus and organized thinking. This disruption can lead to mistakes that would not normally occur under calmer circumstances. Such experiences illustrate the strong influence of emotional states on practical performance within immersive learning environments.

"I was extremely nervous because it was a major practical exam. Instead of being focused, I became anxious. I got confused even though I knew the parts theoretically."

"Because of my nervousness, I ended up overthinking every step. Instead of moving naturally and confidently, I became stiff and slow. At one point, I slightly spilled water while pouring because my hands were shaking."

3.3 Frustration Undermining Problem-Solving

Many participants reported that frustration arising from repeated errors or slow progress negatively influenced their ability to continue solving problems during immersive tasks. When students encounter persistent difficulties, emotional reactions may intensify and gradually weaken motivation. Instead of approaching the problem with patience and analytical thinking, frustration can create discouragement and self-doubt. These feelings may lead learners to question their abilities or compare their progress with that of other groups. Such comparisons can further reduce confidence and willingness to experiment with possible solutions. As emotional tension grows, concentration decreases and the ability to evaluate alternatives becomes limited. In some cases, learners may feel compelled to restart the entire task because earlier attempts were affected by emotional distraction. These responses reveal how emotional reactions during problem-solving can significantly influence persistence and overall performance in immersive learning activities.

"We kept encountering errors, and sometimes our ideas didn't work the way we expected. Because of that, I started feeling frustrated and doubting myself, especially when I thought we were moving too slow compared to other groups."

"In the end, I really had to restart the entire output because it was no longer salvageable. And yes, that's

when I realized that you really can't enter an activity if your emotional bandwidth isn't okay. It becomes a chain reaction."

5 DISCUSSION

The findings of the study indicate that psychological preparedness before immersive learning experiences is characterized by a simultaneous presence of anticipation and emotional tension of Math learners. Participants' descriptions of mixed excitement and nervousness reflect the transitional nature of immersion-based education, where theoretical understanding is suddenly translated into observable performance. Immersive environments often require Math learners to operate within unfamiliar procedures, increasing emotional awareness and cognitive alertness before task engagement. Similar observations were emphasized by Bonnet (2025), who explained that immersive learning environments situate students within authentic problem contexts that require immediate action and decision-making. Kong (2021) further noted that experiential learning conditions expose learners to complex scenarios where conceptual understanding and procedural execution occur simultaneously. In addition, immersive academic tasks act as environments demanding continuous cognitive coordination, which can intensify emotional responses among Math learners encountering such experiences for the first time. Prakoso et al. (2025) and Mukaromah and Sastri (2025) also emphasized that psychological readiness is closely linked with perceived self-efficacy, suggesting that confidence in personal capability significantly influences how Math learners approach demanding academic situations. The combination of anticipation and nervousness observed in the findings therefore reflects an adaptive psychological response to performance-centered educational

environments rather than a purely negative emotional condition.

Another significant pattern emerging from the results involves hesitation and reduced confidence prior to immersive activities due to perceived lack of preparedness and fear of committing mistakes. Participants frequently described internal questioning about their readiness to execute procedures despite possessing theoretical knowledge. This phenomenon illustrates the gap that can exist between conceptual understanding and practical confidence in performance-based learning environments, particularly among Math learners, who may struggle when abstract concepts must be applied in real-time problem-solving. Bandura explained in 1997 that self-efficacy beliefs strongly influence an individual's willingness to initiate challenging actions, particularly when the outcome of the task is uncertain (Honicke et al., 2023). Supporting this perspective, Gan and Nang et al. (2023) observed that students with lower levels of self-efficacy demonstrate greater hesitation when tasks require the integration of multiple cognitive processes. Bosshard (2024) further indicated that stress responses intensify when individuals perceive upcoming challenges as threats rather than opportunities for skill development. According to Alshareef et al. (2025), emotional distractions and anticipatory concerns may interfere with concentration even before task execution begins. Anticipatory anxiety frequently occurs when Math learners interpret academic tasks as evaluations of competence rather than developmental experiences. These theoretical perspectives reinforce the present findings, suggesting that hesitation prior to immersion arises not only from knowledge limitations but also from psychological interpretations of performance expectations.

Social comparison and perceived peer evaluation also emerged as influential psychological factors affecting Math learners' confidence before engaging in immersive tasks. Participants reported that observing classmates who appeared more confident or experienced sometimes intensified feelings of inadequacy and hesitation. Such responses highlight the interpersonal dimension of immersive learning environments, where activities are frequently conducted in visible and collaborative settings. Math learners often develop coping mechanisms such as preparation, self-encouragement, and mental rehearsal to manage anxiety during performance tasks (Savellon et al., 2024). Li et al. (2023) described social evaluation sensitivity as a psychological condition in which individuals become increasingly conscious of potential judgment from surrounding observers, which leads to social anxiety—a common adolescent anxiety characterized by an unreasonable fear of negative appraisal in social situations. Similarly, Kassab et al. (2024) explained that educational environments emphasizing public demonstration of competence may heighten concerns about mistakes or negative evaluation. Sánchez-López et al. (2020) also noted that active learning spaces often increase emotional awareness because student performance becomes observable during task execution. According to Luo et al. (2020) and Jiang et al. (2022), academic pressure intensifies emotional reactions when individuals interpret performance outcomes as reflections of personal ability. Filipino Math learners often demonstrate heightened sensitivity toward expectations connected with academic achievement and social perception. The presence of social comparison in the findings therefore reflects both the evaluative nature of immersive learning and the cultural context shaping learners' psychological responses to visible academic performance.

During immersive activities, participants frequently experienced moments of psychological pressure triggered by task complexity, sudden instructional changes, and the need to integrate theoretical reasoning with practical execution. These experiences illustrate the demanding cognitive environment characteristic of performance-based learning tasks. Immersive activities often require Math learners to process information rapidly while simultaneously performing technical actions, increasing the likelihood of mental overload. Lukasik et al. (2019) explained that anxiety can reduce working memory capacity during complex tasks, limiting an individual's ability to process multiple instructions simultaneously. Stress conditions may impair memory retrieval and cognitive flexibility during demanding mental operations. Liu et al. (2023) emphasized that learners with lower self-efficacy often struggle to coordinate multiple cognitive processes in performance-based environments. The psychological pressure described by participants therefore reflects the natural cognitive demands associated with immersive educational experiences for Math learners.

Furthermore, the findings demonstrate that emotional states during immersive activities significantly influence Math learners' performance quality and problem-solving ability. Emotional reactions therefore become intertwined with cognitive functioning during immersive academic activities (Gumallaoi et al., 2026). Participants described situations in which anxiety, fatigue, or frustration disrupted their ability to execute tasks effectively despite possessing the necessary knowledge. These experiences highlight the interaction between emotional regulation and cognitive functioning within experiential learning environments. Halilsoy (2024) similarly associated confidence in personal capability with increased resilience during demanding tasks. Jin and Wei (2026)

noted that heightened anxiety can interfere with concentration and increase the likelihood of procedural mistakes during complex activities. Ma and Li (2026) further explained that positive emotional experiences strengthen sustained engagement and persistence in learning tasks. Supportive instructional climates allow Math learners to interpret mistakes as opportunities for growth rather than indicators of failure. These perspectives suggest that psychological preparedness is not only a prerequisite for immersion but also a dynamic condition that continues to shape Math learners' performance throughout experiential learning activities.

6. CONCLUSION

The study demonstrates that Math learners entering immersive academic environments experience a complex psychological transition characterized by emotional anticipation, internal pressure, and cognitive adjustment. Prior to engagement in hands-on learning activities, Math learners frequently experience a combination of excitement and nervousness as they prepare to translate theoretical knowledge into practical performance. These emotional responses reflect an awareness of the demanding nature of immersive tasks where skills, understanding, and decision-making are simultaneously required. Psychological readiness therefore emerges not simply as a matter of academic preparation but as an internal condition shaped by confidence, emotional regulation, and personal interpretation of performance expectations. The findings further reveal that hesitation before immersive activities often develops from perceived gaps between conceptual understanding and practical execution. Even when Math learners possess adequate academic knowledge, concerns about making mistakes, meeting expectations, or appearing less competent than peers may weaken confidence and delay engagement. Such

experiences indicate that psychological preparedness involves more than technical familiarity with procedures; it also includes the ability of Math learners to manage self-doubt, interpret challenges constructively, and maintain focus in performance-oriented learning environments. Personal strategies such as calming techniques, reviewing knowledge, and positive self-reassurance demonstrate that Math learners actively attempt to regulate these psychological conditions before participating in immersive tasks. During immersive learning activities, Math learners encounter additional psychological challenges associated with visible performance, time pressure, and the need to integrate theoretical reasoning with practical execution. These demands often generate moments of mental overload, anxiety, or uncertainty that influence the flow of task performance. Emotional states such as fatigue, frustration, and nervousness were shown to directly affect Math learners' concentration, decision-making, and problem-solving ability. The findings therefore highlight that performance in experiential learning environments is shaped by the interaction between cognitive competence and emotional stability in Math learners. Therefore, the study underscores that psychological preparedness plays a significant role in shaping how Math learners navigate immersive academic experiences. Emotional readiness, confidence in personal capability, and the ability to regulate internal responses influence whether Math learners approach complex tasks with clarity or hesitation. Understanding these psychological dimensions provides valuable insight into how Math learners adapt to demanding experiential learning environments and emphasizes the importance of supportive instructional practices that encourage confidence, resilience, and constructive engagement with challenging academic tasks.

7. LIMITATIONS

Several limitations should be acknowledged in interpreting the findings of this study. First, the number of participants was limited to twelve college learners from selected universities in Calbayog City. Although the participants provided rich qualitative insights into their psychological experiences during immersive learning activities, the relatively small sample size limits the extent to which the findings can represent the experiences of all students enrolled in Mathematics programs in other academic contexts. Second, the study relied primarily on self-reported narratives obtained through interviews. While these accounts provided valuable descriptions of emotional and cognitive experiences, participants' recollections may have been influenced by personal interpretation, memory, or the desire to present experiences in a socially acceptable manner. Third, the research focused specifically on learners' perceptions and psychological experiences without incorporating direct classroom observation or instructor perspectives. As a result, the analysis reflects the subjective experiences of the students rather than a comprehensive examination of all factors influencing immersive learning environments. Despite these limitations, the study offers meaningful insight into the psychological conditions that accompany experiential academic activities.

8. RECOMMENDATIONS

Educational institutions and instructors implementing immersive learning activities may consider integrating structured psychological preparation strategies alongside technical instruction. Prior to engaging in complex hands-on tasks, educators may provide orientation sessions that explain the nature of immersive activities, clarify expectations, and emphasize that mistakes are part of the learning process. Creating supportive instructional

environments where students feel psychologically safe to experiment and learn from errors may help reduce anxiety and hesitation during performance-based activities. Instructors may also incorporate brief reflective discussions or debriefing sessions after immersive tasks to allow learners to process emotional experiences and strengthen confidence through guided feedback.

Academic programs may further support learners by introducing skill-building practices that enhance emotional regulation and self-efficacy before immersive activities. Activities such as guided preparation routines, collaborative problem-solving exercises, and gradual exposure to performance-based tasks may help students develop familiarity and confidence in applying theoretical knowledge to practical situations. Encouraging peer support and constructive collaboration can also reduce the negative effects of social comparison by emphasizing collective learning rather than individual performance competition.

Future research may expand the investigation by involving a larger and more diverse group of participants across different academic institutions and program specializations. Comparative studies may also explore how psychological preparedness differs among various fields requiring immersive instruction, such as engineering, medical sciences, or technical-vocational training. Additionally, future investigations may incorporate classroom observations, instructor perspectives, or mixed-method approaches to obtain a broader understanding of how psychological conditions interact with instructional practices in immersive learning environments. Such research may contribute to the development of more effective educational strategies that support both the technical competence and psychological well-being of learners engaged in experiential academic activities.

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