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Teachers' Strategy in Strengthening Emotional Adaptability of Science, Mathematics, ICT, and TechVoc Learners in Real-Life Practical Tasks

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Abstract
Emotional adaptability has become a crucial component of learners' success in Science, Mathematics, ICT, and Technical-Vocational (TechVoc) disciplines, particularly when they are engaged in real-life practical tasks that demand resilience, problem-solving, and effective coping. However, existing literature tends to focus predominantly on cognitive and technical competencies, leaving a gap in understanding how teachers intentionally cultivate learners' emotional adaptability within practical, hands-on learning environments. Grounded in Fredrickson's Broaden-and-Build Theory of Positive Emotions, which posits that positive emotional experiences expand individuals' thought–action repertoires and build long-term personal resources, this study explores the strategies teachers employ to strengthen learners' emotional adaptability in applied learning contexts. Using an exploratory qualitative design, the study involves one-on-one interviews with 18 teachers from Science, Mathematics, ICT, and TechVoc disciplines. Data will be analyzed through reflexive thematic analysis to illuminate teachers' approaches to guiding learners' emotional responses, fostering emotional flexibility, and nurturing constructive reactions to stress or unfamiliar challenges in practical tasks. The study is expected to yield insights into specific teacher strategies that promote emotional adaptability, how these strategies contribute to learners' resilience and capacity to persevere in real-life tasks, the influence of emotional adaptability on enhanced problem-solving processes, and improved coping mechanisms in demanding learning situations. Findings aim to fill the identified research gap by offering a theory-informed framework for integrating emotional adaptability support into STEM and TechVoc instruction, ultimately contributing to more holistic and emotionally responsive teaching practices..

Keywords : Teachers, Strengthening, Adaptability, Real-life.

Introduction

In contemporary education systems, learners in Science, Mathematics, Information and Communications Technology (ICT), and Technical-Vocational (TechVoc) fields are increasingly required to engage with complex, real-life practical tasks that demand not only cognitive and technical proficiency but also emotional adaptability (OECD, 2021; Calzada, 2024). These tasks often involve uncertainty, trial-and-error, stress, and rapid decision-making conditions that can challenge learners' emotional stability and affect their performance (Putwain & von der Embse, 2020; Quisay & Aquino, 2024). Research has consistently emphasized the importance of resilience, problem-solving skills, and coping mechanisms in enhancing learner success in applied learning contexts (Martin et al., 2019; Bondoc, 2023). However, while studies have explored how these competencies develop, there remains a significant gap in understanding how teachers intentionally support and strengthen learners' emotional adaptability during practical tasks (Jennings & Greenberg, 2009; Ceneciro, 2025). Specifically, the ways in which teachers shape the emotional climates, strategies, and reflective practices that enable learners to navigate emotionally demanding learning situations remain underexamined (Hargreaves, 2020; Carpio et al., 2024).

Anchored in Fredrickson's Broaden-and-Build Theory of Positive Emotions, this study positions emotional adaptability not merely as a reaction to challenges but as a resource that can be intentionally cultivated through positive emotional experiences (Fredrickson, 2001). The theory suggests that positive emotions broaden individuals' thought–action repertoires and build enduring personal resources including resilience, problem-solving capacity, and coping skills (Fredrickson & Joiner, 2018). Applied to education, this framework explains how emotionally supportive environments and teacher-guided strategies can expand students' ability to respond flexibly to setbacks, persist during difficulty, and creatively engage with real-life learning tasks (Cefai & Cavioni, 2014; Barrientos, 2025; Bondoc, 2024).

In the context of Science, Mathematics, ICT, and TechVoc education, emotional adaptability becomes especially crucial. Practical tasks in these disciplines ranging from laboratory experiments and mathematical modeling to coding exercises and technical skills training often evoke frustration, anxiety, or fear of failure (Steele, 2020; Verdeflor, 2024a). Without proper emotional guidance, learners may struggle to regulate these emotions, hindering their engagement and overall performance (Pekrun & Linnenbrink-Garcia, 2014; Espartero et al., 2024). Thus, understanding teachers' strategies in fostering emotional adaptability becomes essential to enhancing student outcomes in applied learning environments (Immordino-Yang & Darling-Hammond, 2018; Verdeflor, 2024b).

This research intends to address the identified gap by exploring the strategies teachers employ to encourage and strengthen learners' emotional adaptability and examining how these strategies influence resilience, problem-solving abilities, and coping mechanisms in real-life practical learning situations. The key variables and concepts central to this study include teachers' instructional and emotional support strategies, learners' emotional adaptability, resilience, problem-solving skills, and coping mechanisms within practical, discipline-based tasks (Zeidner et al., 2020; Carpio et al., 2024).

Through an exploratory design involving interviews with teachers from Science, Mathematics, ICT, and TechVoc disciplines, the study seeks to provide a deeper, theory-informed understanding of how emotional adaptability is cultivated in hands-on educational settings. The expected outcome is the development of a conceptual understanding of effective teacher approaches that align with the Broaden-and-Build Theory highlighting how fostering positive emotional experiences can enhance learners' capacity to manage challenges, persist through setbacks, and develop stronger problem-solving and coping skills (Waters & Loton, 2021; Ceneciro, 2025). Ultimately, the study aims to contribute to more holistic and emotionally responsive teaching practices that support learners' success in increasingly complex, practical learning environments (Barrientos, 2025).

2. Literature Review

Emotional Adaptability in Educational Contexts. Emotional adaptability refers to an individual's capacity to regulate, modify, and manage emotional responses in changing or challenging situations (Tugade & Fredrickson, 2004). In educational environments, emotional adaptability has been recognized as essential for learners' engagement, motivation, and long-term academic success. Students who can adjust their emotional states during demanding academic activities tend to demonstrate greater persistence and improved learning outcomes (Pekrun,

2017). This is especially relevant in subjects like Science, Mathematics, ICT, and Technology and Livelihood Education (TechVoc), where tasks often involve complex problem-solving and real-life application.

Real-Life Practical Tasks and Learner Emotional Demands. Real-life practical tasks such as laboratory experiments, mathematical modeling, ICT project-based work, and vocational hands-on activities demand a high level of cognitive and emotional engagement from learners. Research shows that these tasks often trigger emotional responses such as anxiety, frustration, uncertainty, and excitement (Zeidner, 2014). For example, science experiments may lead to unexpected outcomes, ICT activities may involve troubleshooting technical errors, and TechVoc tasks may require mastery of skills through trial and error. Success in these tasks is frequently tied to learners' ability to manage emotions productively. Emotional adaptability therefore functions as a critical component in fostering perseverance and maintaining focus in practical learning contexts.

Teachers' Strategies for Strengthening Emotional Adaptability. Teachers play a pivotal role in shaping learners' emotional regulation and adaptability. Instructional strategies that promote emotional adaptability include providing constructive feedback, modeling calm behavior, incorporating reflective discussions, and scaffolding challenging tasks to reduce emotional overload (Jennings & Greenberg, 2009). In STEM and TechVoc settings, teachers often use techniques such as guided inquiry, collaborative problem-solving, structured problem breakdowns, and real-time emotional coaching to help students cope with frustrations and uncertainties (Schutz & Zembylas, 2011). These strategies not only assist learners in navigating difficult tasks but also contribute to building a learning environment that normalizes struggle and emphasizes growth.

Creating Supportive Classroom Environments for Emotional Flexibility. A supportive classroom climate is essential for encouraging emotional adaptability. Research highlights that environments emphasizing psychological safety, encouragement, and empathy promote students' willingness to take intellectual risks and engage with complex tasks (Carmichael & Farrell, 2012). When teachers intentionally cultivate spaces where mistakes are viewed as opportunities for learning, students develop emotional resilience and become more open to feedback and experimentation. This is especially important in practical subjects like ICT and TechVoc, where trial-and-error learning is integral.

Impact of Emotional Adaptability on Learner Resilience. Emotional adaptability has been linked to increased resilience defined as the learner's capacity to bounce back from setbacks or difficulties (Martin & Marsh, 2006). In practical learning situations, resilience enables students to persist through challenges such as failed lab results, difficult computations, or technical malfunctions. Studies show that emotionally adaptable students are more likely to reframe failures positively, maintain motivation, and continue problem-solving despite frustrations (Tugade & Fredrickson, 2011). Teachers' intentional guidance in emotional adaptation strengthens learners' resilience, leading to improved performance in real-life tasks.

Influence on Problem-Solving Skills. Emotionally adaptable learners demonstrate enhanced problem-solving capabilities. When students manage their emotions effectively, they are better able to think critically, explore alternative solutions, and make logical decisions (Vogel & Schwabe, 2016). In STEM-related subjects, emotional regulation supports cognitive processes such as pattern recognition, reasoning, and application of prior knowledge. Teachers who integrate emotional adaptability strategies such as mindfulness prompts, reflective questioning, and step-by-step support help learners maintain cognitive clarity during complex tasks.

Development of Coping Mechanisms in Practical Learning Situations. Coping mechanisms allow learners to handle stress, setbacks, and unexpected challenges in practical activities. Research indicates that learners who receive emotional coaching from teachers develop stronger coping strategies, such as seeking help, self-reflection, and adaptive help-seeking (Compas et al., 2017). In ICT and TechVoc classrooms, where challenges often involve troubleshooting and performing sequential tasks, coping mechanisms are crucial for preventing cognitive overload. Teachers who emphasize emotional adaptability help learners build coping patterns that contribute to long-term academic and personal growth.

3. Methodology

3.1. Research design

This study employed a hermeneutic phenomenological research design to investigate teachers' strategies in strengthening the emotional adaptability of learners in Science, Mathematics, ICT, and TechVoc subjects during real-life practical tasks. While exploratory in nature, this study aligns with the phenomenological tradition as it

seeks to understand the lived experiences of teachers and the pedagogical reasoning behind their actions. A hermeneutic approach was selected to allow for a deeper examination of the data beyond surface-level descriptions. As Nigar (2020) posits, the value of rich textual data lies not only in the participants' explicit accounts but also in the latent meanings embedded within them. By combining detailed description with interpretive analysis, the research renders the phenomenon transparent, thereby revealing the underlying meaning structures of the lived experience. This design supports the identification of subtle patterns and insights regarding emotional adaptability that may not be well-documented in existing literature.

3.2. Population and sampling

The population of this study consisted of teachers handling Science, Mathematics, ICT, and TechVoc classes. The study was conducted in the Philippines, specifically within public educational institutions in the Visayas and Mindanao regions. Using purposive sampling, a total of 18 teachers were selected to participate. Participants were chosen based on their direct involvement in facilitating practical learning activities and their experience in supporting learners' emotional adaptability. This sampling strategy ensured the inclusion of teachers who possessed relevant expertise and firsthand knowledge of the phenomena being explored within the specific context of resource-constrained environments, where practical tasks often require significant adaptability due to varying resource availability.

3.3. Instrument

Data were collected using a semi-structured interview guide developed by the researcher. The interview guide was anchored on the central idea of understanding teachers' strategies for fostering emotional adaptability and examining how these strategies influence learners' resilience, problem-solving abilities, and coping mechanisms during real-life practical tasks. The guide consisted of two sections aligned with the research objectives. The first set of questions focused on identifying the strategies teachers use to support learners' emotional adaptability. The second set explored how these approaches contribute to learners' resilience, problem-solving skills, and coping behaviors in practical learning situations. The semi-structured format allowed participants to share detailed examples and experiences while giving the researcher flexibility to probe further when needed. Table 1 presents the list of guide questions used by this research study.

Table 1. Interview guide questions.

Objectives	**Interview question**
To explore the strategies employed by teachers in encouraging learners' emotional adaptability of Science, Mathematics,ICT, and TechVoc when engaging with real-life practical tasks.	1. What strategies do you commonly use to help learners manage their emotions adaptable to Science, Mathematics, ICT, and TechVoc when facing challenges in real-life practical tasks?
	2. Can you share an example of a situation where you guided a learner to adapt emotionally in a practical learning activity? 3. How do you create an environment that encourages learners to stay emotionally flexible when tasks become difficult or unfamiliar?

2. To examine how teachers' approaches to strengthening emotional adaptability of Science, Mathematics,ICT, and TechVoc influence learners' resilience, problem-solving, and coping mechanisms in practical learning situations.	1. In what ways have you observed that emotional adaptability of Science, Mathematics, ICT, and TechVoc contributes to learners' resilience when handling real-life tasks?
2. 3.	How does strengthening emotional adaptability of Science, Mathematics, ICT, and TechVoc help learners improve their problem-solving skills in practical activities? Can you describe how your approach has helped learners develop better coping mechanisms when they encounter stress or setbacks in real-life tasks?

3.4. Data Gathering Procedure

Data were gathered through one-on-one interviews with each participant. Prior to data collection, informed consent was obtained, and participants were briefed on the purpose and voluntary nature of the study. Interviews were conducted either face-to-face or through an agreed-upon online platform, depending on participant availability and convenience. Each interview lasted approximately 30 to 45 minutes and was audio-recorded with the participants' permission. Field notes were also taken to capture nonverbal cues and contextual details. All recorded data were transcribed verbatim to ensure accuracy in the analysis.

3.5. Data analysis

The study utilized reflexive thematic analysis, guided by Braun and Clarke's (2006) framework, to examine the interview data. This method involved repeated reading of transcripts to achieve data familiarization, followed by coding relevant segments that reflected teachers' strategies and their perceived influence on learners. Codes were then organized into initial themes, which were reviewed, refined, and defined to capture meaningful patterns across the dataset. Given the interpretive nature of this approach, reflexivity was integral to the analytic process. The researchers, being educators in Science, Mathematics, ICT, and TechVoc disciplines themselves, approached the data with an insider perspective. While this familiarity facilitated a deeper understanding of the technical and pedagogical context, it also presented the risk of projecting personal experiences onto the participants' narratives. To mitigate this, the researchers engaged in reflexive journaling and bracketing, consciously setting aside pre-existing assumptions to remain open to the participants' unique accounts. Regular peer debriefing sessions were also conducted among the research team to challenge initial interpretations and ensure that the final themes were grounded strictly in the participants' lived experiences rather than the researchers' prior expectations.

4. Results

Research Objectives 1. To explore the strategies employed by teachers in encouraging learners' emotional adaptability of Science, Mathematics,ICT, and TechVoc when engaging with real-life practical tasks.

Question No. 1. What strategies do you commonly use to help learners manage their emotions adaptable to Science, Mathematics, ICT, and TechVoc when facing challenges in real-life practical tasks?

1.1 *Normalize mistakes by reminding students that scientists fail more than they succeed*

Five (5) respondents expressed that when students get emotional during experiments like spills, failed trials, or unexpected results they normalize the experience by reminding them that scientists fail more than they succeed, and that real discoveries often come from errors. They turn mistakes into part of the lesson by pausing the class and treating the outcome as data to analyze, not a personal failure. They show real examples of famous

experiments that required hundreds of attempts to reframe failure as a natural step in scientific work. Additionally, they mentioned that they also use unexpected results as opportunities for curiosity, asking students what changed and what stayed the same, and having them predict possible causes before making adjustments. They share their own failed experiment setups to show that even teachers struggle, and they encourage groups to compare errors so they learn collaboratively rather than hiding mistakes.
"When students get emotional during experiments like spills, failed trials, or unexpected results I normalize the experience by reminding them that scientists fail more than they succeed, and that real discoveries often come from errors."
"I also use unexpected results as opportunities for curiosity, asking students what changed and what stayed the same, and having them predict possible causes before making adjustments."

1.2 *Redirect the emotion from fear to challenge.*

Eight (8) respondents shared that Math anxiety is real, and they see it every time a student freezes at the sight of a word problem or a long equation. When learners start to feel overwhelmed, they guide them to break the task into smaller, manageable steps so they don't feel crushed by the full complexity of the problem. Instead of aiming for the full solution, they focus on micro-wins, identifying what the problem is asking, picking out the given information, writing the first equation, or even just choosing which operation to start with. Additionally, they mentioned that sometimes they use color coding or boxed steps to help them track their flow. They ask them to talk through just the first step out loud, which helps reduce panic by shifting their focus from they need to get everything right to they only need to figure out the next part. This slow-building confidence helps rewire their mindset, problems become a sequence of solvable actions instead of one big stressful challenge. Over time, as they accumulate these micro-wins, their anxiety decreases and their belief in their own mathematical ability grows.

"Math anxiety is real, and I see it every time a student freezes at the sight of a word problem or a long equation."
*"*Sometimes I use color coding or boxed steps to help them track their flow. I ask them to talk through just the first step out loud, which helps reduce panic by shifting their focus from "I need to get everything right" to "I only need to figure out the next part.*"*

1.3 Model calmness during errors

Five (5) respondents expressed that when a student burns food, mismeasures wood, or makes a mistake during any hands-on activity, they're very intentional about staying calm and composed. In Tech-Voc subjects, emotions can escalate quickly because the mistakes feel visible, embarrassing, and sometimes costly. If they react harshly, the student shuts down but if they stay steady, they mirror that energy. Their calmness becomes a signal that the situation is manageable and not a disaster. Additionally, they shared that they also remind them that skills-based learning always involves trial and error. Professionals in culinary arts, carpentry, welding, and other trades didn't become skilled by avoiding mistakes, they became skilled by learning to correct them. When students see that they treat errors as part of the learning process, not something to fear, they become less tense, more willing to try again, and more confident in their abilities.

"When a student burns food, mismeasures wood, or makes a mistake during any hands-on activity, I'm very intentional about staying calm and composed."
"I also remind them that skills-based learning always involves trial and error. Professionals in culinary arts, carpentry, welding, and other trades didn't become skilled by avoiding mistakes, they became skilled by learning to correct them."

Question No. 2. Can you share an example of a situation where you guided a learner to adapt emotionally in a practical learning activity?

2.1 *The Reflective Pause*

Five (5) respondents expressed that during a titration, one student accidentally knocked over the burette and spilled the solution all over the counter. The room went quiet, and they immediately saw the panic in their eyes. The student's shoulders tensed, hands shook, and kept apologizing to the group. Instead of focusing on the mess, they focused on the student and gently let the student step outside for 30 seconds just to breathe**.**
It wasn't about removing the students from the situation, it was about creating emotional space. Additionally, they mentioned that they reassured the group that accidents happen even to experienced chemists, preventing silent blame or tension. When the student returned, calmer but still embarrassed, they talked first about what stressed her the most and the student admitted it wasn't the mistake itself but the fear of holding everyone back. Because of this the class adopted the same mindset wherein mistakes weren't crises but moments to pause, discuss, and redo turning emotional regulation into part of their scientific routine rather than something separate from it.

" During a titration, one student accidentally knocked over the burette and spilled the solution all over the counter. "
" I reassured her group that accidents happen even to experienced chemists, preventing silent blame or tension."

2.2 *The Micro-Wins Strategy*
Five (5) respondents expressed that the students froze during a multi-step geometry problem. They looked overwhelmed, fidgeting with their pencil, and kept repeating that they didn't know where to start. It was clear that the complexity of the problem was triggering anxiety and their minds were stuck before they even began. To help them emotionally and cognitively, they suggested that they should cover the entire problem with a sheet of paper, leaving only the first line visible. They focused on solving just that line, and when they succeeded, the teachers acknowledged it as a small win. Additionally, they mentioned that they uncovered each subsequent step, taking the problem piece by piece. Each success built confidence, slowed their breathing, and reduced the panic. Students' realized that breaking complex problems into manageable parts wasn't just a problem-solving strategy, but also a way to regulate emotions. Over time, they began applying this approach independently, pausing and tackling one step at a time whenever they felt overwhelmed.

" The students froze during a multi-step geometry problem.They looked overwhelmed, fidgeting with their pencil, and kept repeating, they didn't know where to start. "
" We uncovered each subsequent step, taking the problem piece by piece. Each success built confidence, slowed their breathing, and reduced the panic."

2.3 The Peer-Regulated Support
Eight (8) respondents mentioned that some students often felt embarrassed during running exercises because they were always the slowest in the class. They would give up halfway through each lap, lowering their head and trailing behind, clearly frustrated and self-conscious. They noticed that no amount of instruction or encouragement to push harder was working because the real barrier was emotional, not physical. Instead of having them run alone or urging them to catch up with the faster students, they paired the students with a buddy who naturally ran at their pace. They explained to both students that the goal wasn't speed but support like encouragement, teamwork, and consistency. Additionally, they mentioned that the students shifted from feeling isolated and defeated to experiencing connection and encouragement, which in turn led to persistence. They noticed that in subsequent sessions, they seemed more confident and willing to push themselves further, even attempting extra laps or helping classmates who struggled. This experience reinforced a key insight for the class that emotional support can be just as important as skill-building. Creating an environment where students feel safe, seen, and encouraged fosters persistence, resilience, and engagement than direct instruction alone.
"Some students often felt embarrassed during running exercises because they were always the slowest in the class."
"The students shifted from feeling isolated and defeated to experiencing connection and encouragement, which in turn led to persistence."

Research Objectives 2. To examine how teachers' approaches to strengthening emotional adaptability of Science, Mathematics,ICT, and TechVoc influence learners' resilience, problem-solving, and coping mechanisms in practical learning situations.

Question No. 1. In what ways have you observed that emotional adaptability of Science, Mathematics, ICT, and TechVoc contributes to learners' resilience when handling real-life tasks?

Emotional adaptability in science helps students manage frustration

Eight (8) respondents expressed that when experiments fail, students learn to manage frustration instead of giving up. Emotional adaptability helps them see mistakes as part of the learning process, teaching them patience and reflective thinking. They begin to analyze what went wrong and try alternative approaches, which fosters creative problem-solving. Each time they overcome a failed experiment, their confidence grows, making them more willing to tackle complex real-life challenges like fixing broken gadgets at home or troubleshooting everyday problems without fear of failure. Additionally, they mentioned that working in teams during experiments also helps them regulate both their own and others' emotions, building resilience in collaborative situations. Moreover, experiencing uncertainty and the need for repeated effort trains students to adapt to unexpected outcomes and persist through difficulties, reinforcing the mindset that effort and adaptability matter more than immediate success.

"When experiments fail, students learn to manage frustration instead of giving up. Emotional adaptability helps them see mistakes as part of the learning process, teaching them patience and reflective thinking."
"Working in teams during experiments also helps them regulate both their own and others' emotions, building resilience in collaborative situations."

1.2 *Emotional adaptability in math helps students stay calm during difficult problems*

Five (5) respondents expressed that Math anxiety is common, but students who practice emotional adaptability like taking deep breaths before attempting hard problems become better at handling stressful calculations in daily life, such as budgeting or measuring materials for home projects. By learning to stay calm during difficult tasks, they avoid cognitive overload and can think more clearly. Additionally, they mentioned that they also develop the habit of breaking big problems into smaller, manageable steps, a skill that transfers directly to real-world responsibilities like planning expenses or following multi-step instructions. When students learn to view mistakes as part of the process instead of a failure, they become more persistent and less afraid of retrying solutions, helping them navigate everyday problem-solving with confidence and resilience.

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"They also develop the habit of breaking big problems into smaller, manageable steps, a skill that transfers directly to real-world responsibilities like planning expenses or following multi-step instructions."

1.3 *Learn to prioritize steps and make quick but clear decisions*

Five (5) respondents expressed that time pressure in practical tasks teaches students to regulate their emotions, helping them avoid panic when deadlines are tight. As they work under time constraints, they learn to prioritize important steps, stay focused, and tolerate stress in a controlled way. This experience strengthens their ability to make clear, quick decisions even when they feel pressured. Additionally, they mentioned that students also develop the habit of balancing speed with accuracy, a skill that prevents errors in real-life tasks such as cooking, measuring materials, or handling tools. Over time, they become more accountable for how they use their time, building independence and resilience that carry over into jobs, household responsibilities, and personal projects outside school.

"Time pressure in practical tasks teaches students to regulate their emotions, helping them avoid panic when deadlines are tight."

"Students also develop the habit of balancing speed with accuracy, a skill that prevents errors in real-life tasks such as cooking, measuring materials, or handling tools."

Question No. 2. How does strengthening emotional adaptability of Science, Mathematics, ICT, and TechVoc help learners improve their problem-solving skills in practical activities?

2.1 Calmness turns failure into data, not disaster

Five (5) respondents expressed that when students learn to stay calm when an experiment fails, they stop seeing mistakes as disasters and start treating them as data. Instead of reacting emotionally, they shift into analysis mode where they check variables, reviewing steps, and making careful adjustments. This calm mindset helps them slow down, retrace their process, and think systematically rather than rushing or repeating the same errors. Additionally, they mentioned that they become more open to asking questions, exploring alternatives, and seeking help because they no longer feel embarrassed or threatened by failure. Curiosity becomes stronger than fear, so they begin to wonder instead of thinking they messed up. This emotional adaptability builds real scientific confidence. They don't just get better at experiments but they start thinking and behaving like true scientists who understand that every error is an opportunity to refine, discover, and learn.

"When students learn to stay calm when an experiment fails, they stop seeing mistakes as disasters and start treating them as data"
" They become more open to asking questions, exploring alternatives, and seeking help because they no longer feel embarrassed or threatened by failure."

2.2 Emotional adaptability restores focus

Five (5) respondents expressed that when students get overwhelmed, they often stop thinking clearly because panic blocks logic and creativity. Emotional adaptability helps them regain control and approach problems step by step. By breaking complex problems into smaller, manageable chunks, students experience small successes that build confidence and momentum. Additionally, they mentioned that calm thinking allows them to focus, make fewer mistakes, and plan their strategy more effectively. They become persistent, willing to try multiple approaches, revise methods, and learn from errors. This emotional regulation strengthens their self-efficacy and equips them to tackle challenging real-world tasks without being paralyzed by stress.

"When students get overwhelmed, they often stop thinking clearly because panic blocks logic and creativity."
"Calm thinking allows them to focus, make fewer mistakes, and plan their strategy more effectively. "

2.3 Helps students think clearly and plan effectively under stress

Eight (8) respondents expressed that in real jobs, pressure comes from deadlines, clients, or supervisors. School tasks like completing a project on time or repeating a failed attempt simulate these real-world pressures. Students who can regulate their emotions under such stress think more clearly, plan effectively, and avoid rash decisions. They learn to treat failures as opportunities to troubleshoot systematically, rather than giving up. Additionally, they mentioned that emotional adaptability also improves teamwork, as calm students can communicate, delegate, and support peers without conflict. Over time, successfully coping with pressure builds confidence and decision-making skills, and equips students to adapt creatively to unpredictable situations, preparing them to become skilled practical problem-solvers in the workplace.

" In real jobs, pressure comes from deadlines, clients, or supervisors. School tasks like completing a project on time or repeating a failed attempt simulate these real-world pressures."

"Emotional adaptability also improves teamwork, as calm students can communicate, delegate, and support peers without conflict."

Question No. 3. Can you describe how your approach has helped learners develop better coping mechanisms when they encounter stress or setbacks in real-life tasks?

3.1 Calmness and breaking tasks into manageable steps helps students view mistakes as learning opportunities
Eight (8) respondents expressed that they've noticed that when they stay calm and break tasks into smaller, manageable steps, students mirror that calmness. For example, if a student mismeasures wood in a shop class, instead of scolding, they show them how to correct it. By doing this, the students see that mistakes aren't disasters but they're opportunities to problem-solve and students begin to internalize this approach in which they stop panicking when things go wrong and instead analyze what went wrong and how to fix it. Additionally, they mentioned that they've seen this carry over into other areas too. The students often tell them afterward that they felt more confident because they had learned to manage stress calmly and break large problems into smaller, solvable parts. The key is not just teaching the skill but modeling emotional regulation. When students see an adult respond calmly to setbacks, they begin to internalize that response, building resilience and self-efficacy that serves them well both inside and outside the classroom.

" I've noticed that when I stay calm and break tasks into smaller, manageable steps, students mirror that calmness."

"I've seen this carry over into other areas too. The students often tell me afterward that they felt more confident because they had learned to manage stress calmly and break large problems into smaller, solvable parts."

3.2 Providing emotional support through peer pairing develop persistence instead of giving up

Five (5) respondents shared that some learners give up easily when they feel they're failing. They've found that pairing them with supportive peers or designing opportunities for small, achievable successes can make a big difference. For instance, one student, always the slowest runner in PE, would give up halfway through every lap. They paired them with a buddy who matched their pace and encouraged them along the way. The goal wasn't speed, it was emotional support and building confidence. Additionally, they mentioned that they apply the same principle in academics. When a student struggles with a difficult math problem, they guide them to solve one part at a time and celebrate each step. This micro-success approach reinforces the idea that progress matters more than perfection. Students begin to see that setbacks aren't reasons to quit but instead they're opportunities to ask for help, try again, or adjust their strategy.

" Some learners give up easily when they feel they're failing. I've found that pairing them with supportive peers or designing opportunities for small, achievable successes can make a big difference."
" I apply the same principle in academics. When a student struggles with a difficult math problem, I guide them to solve one part at a time and celebrate each step."

3.3 Celebrating micro-achievements helps students focus on progress rather than perfection

Five (5) respondents mentioned that they teach students to celebrate micro-achievements. For instance, in math or science labs, instead of stressing over the final result, they acknowledge each correct step. If a student correctly sets up a formula or accurately measures ingredients in a lab, they take a moment to recognize that effort before moving on. This approach helps students understand that success is a series of small, manageable actions, not just one big outcome. Additionally, they shared that students learn to break down projects like research papers, presentations, or even community initiatives into smaller, trackable steps. They begin to see progress in real-time rather than being overwhelmed by the enormity of the task. For example, one student tackling a multi-step science project started tracking daily milestones, which reduced anxiety and improved focus. They also become more willing to tackle challenging problems because they know that incremental progress matters, and perfection isn't the immediate goal.

"I teach students to celebrate micro-achievements. For instance, in math or science labs, instead of stressing over the final result, we acknowledge each correct step."
"Students learn to break down projects like research papers, presentations, or even community initiatives into smaller, trackable steps."

5. Discussion

Grounded in Fredrickson's (2001) Broaden-and-Build Theory of Positive Emotions, this study explored teachers' strategies for strengthening learners' emotional adaptability in Science, Mathematics, ICT, and TechVoc, as well as the influence of these approaches on learners' resilience, problem-solving skills, and coping mechanisms during real-life practical tasks. The theory posits that positive emotions widen individuals' thought–action repertoires and help build enduring personal resources. The results of the study closely align with this theoretical framework while simultaneously corroborating and extending existing empirical literature on emotion regulation in education.

Teachers' Strategies for Encouraging Emotional Adaptability. Findings reveal that teachers employ diverse strategies to help learners regulate and adapt their emotions when faced with practical tasks that are complex, unfamiliar, or demanding. Many of these strategies, specifically normalizing mistakes and providing step-by-step scaffolding, resemble the types of positive emotional experiences that, according to Fredrickson (2001), broaden cognitive and behavioral flexibility. By reframing errors not as personal failures but as data to be analyzed, teachers effectively reduce the narrowing effect of negative emotions (like anxiety or fear), allowing students to expand their awareness and consider multiple problem-solving strategies.

This finding resonates with Jennings and Greenberg's (2009) assertion that a teacher's social-emotional competence is critical in managing the emotional climate of the classroom. However, the current study extends this understanding by highlighting the unique context of STEM and TechVoc education. While Schutz and Zembylas (2011) emphasize the role of emotional coaching in general inquiry, this study illustrates that in practical, hands-on environments, emotional coaching is inextricably linked to technical instruction. The micro-wins strategy identified in the results, where teachers mask complex problems to focus on a single step, demonstrates that fostering emotional adaptability is not merely about verbal encouragement, but about structurally altering the task to prevent cognitive and emotional overload. Thus, consistent with the broaden aspect of Fredrickson's theory, these strategies create the psychological space necessary for learners to approach technical challenges with openness rather than avoidance.

Influence of Teachers' Approaches on Resilience, Problem-Solving, and Coping. The creation of emotionally supportive learning environments emerged as a critical mechanism for enabling adaptability. Teachers reported fostering spaces where learners feel safe to take risks, make errors, and express concerns without fear of judgment. Within the Broaden-and-Build framework, these environments generate positive emotions, such as calmness and a sense of belonging, that widen learners' capacity to think creatively and act adaptively during real-life tasks.

This aligns with Carmichael and Farrell's (2012) research, which emphasizes that psychological safety is a prerequisite for intellectual risk-taking. However, the findings of this study provide a crucial nuance regarding the role of the teacher's demeanor. Participants specifically noted that the teacher's ability to model calmness during high-stress moments (e.g., a chemical spill or equipment failure) served as a direct regulatory signal for the students. This suggests that the supportive environment is not a static backdrop but a dynamic emotional state co-constructed by the teacher. Unlike general classroom studies, this research highlights that in practical contexts where failure is visible and potentially hazardous, the teacher's calmness acts as an external resource that students internalize, allowing them to shift from a fight-or-flight response to a broaden-and-build response.

Resilience Development. Teachers observed that their approaches to strengthening emotional adaptability significantly influenced learners' resilience, enabling them to recover more quickly from setbacks and maintain persistence. This aligns with Fredrickson's (2001) proposition that repeated positive emotional experiences accumulate into durable psychological resources. In this context, the build component of the theory is evident: as students repeatedly experience the successful management of frustration through teacher guidance, they construct a lasting capacity to handle future challenges with confidence.

This finding directly corroborates Martin and Marsh's (2006) concept of academic buoyancy, which describes the capacity to handle the low-level, daily pressures of academic life (e.g., difficult deadlines, difficult tasks). While Martin and Marsh often frame buoyancy as a student attribute, this study suggests that it is heavily mediated by teacher intervention. The results show that learners who are emotionally adaptable demonstrate greater tolerance for ambiguity and trial-and-error processes, confirming Tugade and Fredrickson's (2004) view that resilient individuals utilize positive emotions to bounce back from stress. Consequently, the study provides empirical evidence that emotional adaptability in Science and TechVoc is the foundational mechanism through which technical resilience is built.

Problem-Solving. The findings indicate that emotional adaptability enhances learners' problem-solving abilities. Teachers noted that emotionally regulated learners are better able to think flexibly, connect concepts across disciplines, and explore alternative solutions. According to Fredrickson (2001), positive emotions increase cognitive broadening, which facilitates innovation, creativity, and logical reasoning, all critical components of effective problem-solving in science, mathematics, ICT, and technical tasks.

This theoretical alignment is further supported by Pekrun's (2017) Control-Value Theory, which suggests that positive activating emotions (such as curiosity and enjoyment) reduce extraneous cognitive load, thereby freeing up mental resources for complex problem-solving. Conversely, as Vogel and Schwabe (2016) note, unmanaged stress and panic tend to block executive functions, leading to rigid thinking. The teachers' strategies in this study, specifically helping students treat failure as data, effectively mitigated these cognitive blocks. By shifting the learner's emotional state from fear (narrowing) to analytical calm (broadening), teachers enabled students to maintain the cognitive clarity required to troubleshoot systematic errors, confirming that emotional regulation is a functional prerequisite for technical logic.

Coping Mechanisms. Teachers observed improvements in learners' coping mechanisms as a result of intentional emotional adaptability strategies. These included healthier responses to stress, such as self-regulation, seeking help appropriately, or viewing challenges as opportunities for learning. Within the Broaden-and-Build framework, these coping behaviors reflect the enduring personal resources built through frequent experiences of positive emotion.

These findings mirror Compas et al.'s (2017) research on the developmental importance of adaptive coping but add a specific contextual layer regarding peer support. The study found that peer-regulated support, such as assigning running buddies or lab partners, was a critical coping resource. Unlike general social support often discussed in literature, the peer interventions observed here were task-synchronous (occurring during the specific moment of struggle). This suggests that in practical disciplines, coping is often a collective, distributed process. By scaffolding these interactions, teachers help learners build a repertoire of adaptive behaviors (e.g., asking for help rather than quitting) that persist beyond the immediate classroom context, effectively building the psychological capital Fredrickson describes.

Integrative Interpretation. Overall, the study's findings demonstrate that teachers play a pivotal role in cultivating emotional adaptability among learners engaged in real-life practical tasks across Science, Mathematics, ICT, and TechVoc. By intentionally fostering positive emotional experiences and supportive learning climates, teachers promote the development of essential internal resources, including resilience, problem-solving agility, and adaptive coping strategies. These outcomes strongly reflect Fredrickson's Broaden-and-Build Theory, which provides a meaningful lens for understanding how emotional experiences influence cognitive and behavioral growth.

While previous literature, such as Immordino-Yang and Darling-Hammond (2018), has established the neuroscientific link between emotion and learning, this study contributes a specific focus on the pedagogical strategies required to operationalize this link in hands-on, high-stakes environments. The findings indicate that when teachers intentionally guide learners through emotional challenges, transforming anxiety into micro-wins and failure into inquiry, they do not merely support student well-being; they actively construct the long-term psychological assets that extend beyond classroom contexts and into broader practical and life situations.

Limitations

While this study offers significant insights into the strategies teachers employ to strengthen emotional adaptability, several limitations should be acknowledged. First, the study relied on a relatively small sample size of 18 teachers

selected through purposive sampling. As is characteristic of phenomenological research, the findings are context-specific and representative of the participants' lived experiences rather than statistically generalizable to the broader population of educators in the Philippines or other educational systems. The study was also conducted specifically within public educational institutions in the Visayas and Mindanao regions; consequently, the strategies identified may be influenced by the specific resource constraints and cultural dynamics of these settings and may not fully reflect the practices of teachers in private institutions or other geographic locales.

Second, the data collection was limited to semi-structured interviews and did not include classroom observations. Relying solely on self-reported data presents the possibility of social desirability bias, where participants may unconsciously offer idealized accounts of their teaching strategies rather than their actual in-the-moment practices. While the researchers employed reflexive techniques to mitigate bias, the absence of observational data limits the ability to triangulate the reported strategies with actual classroom implementation.

Finally, this study grouped Science, Mathematics, ICT, and TechVoc disciplines under the umbrella of "practical tasks". While these fields share commonalities in terms of problem-solving and technical application, they also possess distinct pedagogical demands. The specific emotional challenges of abstract mathematical modeling may differ in nuance from the physical safety risks associated with TechVoc workshops. Future research could benefit from investigating these disciplines separately to identify more domain-specific emotional adaptability strategies.

Conclusion

The study found that teachers use intentional strategies such as normalizing mistakes, breaking tasks into smaller steps, modeling calmness, and promoting peer support to help learners regulate their emotions during real-life practical tasks in Science, Mathematics, ICT, and TechVoc. These approaches reduce anxiety, shift students' mindsets from fear to curiosity, and create emotionally safe environments that encourage persistence and engagement. Findings also show that emotional adaptability strengthens learners' resilience by helping them manage frustration, stay calm under pressure, and make clearer decisions during challenging tasks. Likewise, emotionally adaptable students demonstrate improved problem-solving as they treat mistakes as data, think more systematically, and maintain focus even when overwhelmed. Teachers' approaches further enhance coping mechanisms by teaching students to analyze setbacks, celebrate small progress, and seek support rather than giving up. Overall, the results highlight that emotional adaptability is a critical foundation for resilience, effective problem-solving, and healthy coping in practical learning situations..

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