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Exploring the Role of Teacher Scaffolding in Fostering Independent Learning

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A B S T R A C T

This study aimed to explore how teacher scaffolding practices contribute to the development of independent learning among students in Malaysia. A qualitative research design was employed using semi-structured interviews with 25 teachers from secondary schools and higher education institutions across Malaysia. Participants were selected through purposive sampling, ensuring diversity in subject areas and teaching experience. Data collection continued until theoretical saturation was achieved. Interviews, lasting 45–60 minutes, were audio-recorded, transcribed verbatim, and analyzed using thematic analysis with NVivo 14 software. Coding followed an iterative process to identify open codes, subthemes, and overarching themes. Trustworthiness was enhanced through peer debriefing and reflective memoing. Four major themes emerged from the analysis. First, teachers reported diverse instructional scaffolding strategies, including guided questioning, modeling, chunking, feedback, gradual release of responsibility, and differentiated support. Second, scaffolding was found to promote learner autonomy by fostering reflection, decision-making, self-regulation, peer collaboration, and intrinsic motivation. Third, teachers emphasized socio-emotional support such as building trust, encouragement, creating safe learning climates, empowering confidence, addressing anxiety, and cultural sensitivity as integral to fostering independence. Finally, participants identified challenges and conditions of scaffolding, including time constraints, large class sizes, variability in student readiness, limited resources, exam pressures, and sustainability of independence. Collectively, these findings illustrate scaffolding as a multidimensional process combining cognitive, motivational, and socio-emotional dimensions. The study demonstrates that teacher scaffolding plays a pivotal role in facilitating independent learning by integrating instructional, motivational, and relational strategies. However, systemic and contextual barriers, such as curriculum pressures and limited resources, can constrain its effectiveness. The findings underscore the need for professional development, institutional support, and policy initiatives to strengthen scaffolding practices and ensure their sustainability in fostering lifelong independent learners.

Keywords: *Scaffolding; Independent Learning; Zone of Proximal Development; Teacher Support; Learner Autonomy; Qualitative Research; Malaysia*

1. Introduction

Independent learning has emerged as a crucial competence in the 21st century, enabling learners to take ownership of their educational pathways and equipping them with skills necessary for lifelong learning. In increasingly complex and knowledge-driven societies, the ability to learn autonomously is no longer an optional skill but an essential prerequisite for personal, academic, and professional success. Research in educational psychology and pedagogy emphasizes that while independent learning is ultimately a learner-centered endeavor, it does not occur in isolation. Instead, it develops through carefully structured support provided by teachers, a process widely conceptualized as scaffolding (Margolis, 2020).

The concept of scaffolding is deeply rooted in Vygotsky's notion of the Zone of Proximal Development (ZPD), which defines the distance between what a learner can accomplish independently and what can be achieved with guidance from a more knowledgeable other (Kolly-Shamne, 2022). Within this zone, scaffolding plays a mediating role, enabling learners to gradually bridge gaps in understanding and skills. By providing timely prompts, feedback, modeling, and gradually withdrawing support, teachers facilitate learners' movement toward autonomy (Anwar et al., 2024). This dynamic process is critical for fostering independence while ensuring that learners remain engaged and challenged rather than overwhelmed.

A growing body of research highlights the importance of scaffolding in diverse contexts. For instance, scaffolding has been shown to enhance student engagement and performance across subjects, from language acquisition to mathematics and science education. Studies suggest that carefully scaffolded instruction enables students to internalize learning strategies, which they later employ independently (Ashar, 2024). Such instructional design is particularly important in settings where learners may otherwise rely heavily on rote learning or teacher-centered approaches, as scaffolding encourages active participation, reflection, and self-regulation (Sitini, 2025).

The empirical evidence further demonstrates that scaffolding improves conceptual understanding and problem-solving ability. In mathematics and science education, for example, e-scaffolding tools and structured guidance in inquiry-based tasks have led to significant gains in student comprehension (Auliyani et al., 2023). Similarly, scaffolding has been instrumental in enhancing algebraic problem-solving skills among junior high school students, enabling them to approach abstract tasks with greater confidence (Nurfadila et al., 2024). These findings illustrate that scaffolding not only addresses immediate instructional challenges but also builds the foundational skills necessary for independent and transferable learning.

Scaffolding strategies are also increasingly adapted to the digital and online learning environments that have proliferated in recent years. Research highlights the role of scaffolding in maintaining learner engagement and interaction in asynchronous online discussions (Ashar, 2024). With digital education becoming a mainstream component of contemporary schooling, scaffolding offers a pedagogical bridge to maintain personalized learning support despite physical distance. Moreover, technology-enhanced scaffolding has been shown to foster data-driven self-regulated learning, particularly among younger learners who benefit from structured feedback loops and adaptive prompts (Huang, 2022). These findings reinforce the idea that scaffolding is not confined to traditional classrooms but extends into blended and online learning ecosystems.

From a sociocultural perspective, scaffolding is best understood not only as an instructional technique but also as a relational and interactive process. The interplay of teacher guidance, peer collaboration, and learner agency defines the trajectory of learning within the ZPD (Xu, 2024). Recent studies have emphasized the importance of scaffolded feedback in language and writing instruction, demonstrating how teacher mediation shapes students' ability to independently revise, edit, and improve their outputs. Similarly, peer scaffolding has been linked to improved speaking skills, vocabulary acquisition, and collaborative problem-solving, confirming that scaffolding can emerge from multiple sources within the classroom environment (Homayouni, 2022).

Another important strand of research points to the emotional dimensions of scaffolding. Effective teaching within the ZPD requires sensitivity to learners' affective states, including motivation, anxiety, and confidence. Studies suggest that emotions act as mediators of scaffolding effectiveness, influencing both the reception of guidance and the learner's willingness to assume responsibility for independent work (Radev & Pešikan, 2023). Teachers who provide supportive and emotionally attuned scaffolding not only build academic competence but also cultivate resilience and confidence among learners. This underscores the holistic nature of scaffolding, which extends beyond cognition to encompass motivation and socio-emotional development.

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Despite its widely recognized benefits, scaffolding presents several challenges in practice. Scholars have noted the difficulty of maintaining the delicate balance between too much and too little support (Xi & Lantolf, 2020). Over-scaffolding risks creating dependency, while insufficient scaffolding may leave learners frustrated and disengaged. Moreover, large class sizes, time constraints, and limited resources often hinder teachers' ability to provide individualized scaffolding (Raslan, 2024). These constraints are particularly acute in contexts where high-stakes examinations dominate, as teachers may feel pressured to prioritize coverage over depth (Nasir & Aziz, 2020). Such systemic barriers highlight the need for professional development and institutional support to enable teachers to scaffold effectively and sustainably.

The conceptualization of scaffolding has also evolved to encompass broader pedagogical models such as cognitive apprenticeship. Cognitive apprenticeship models emphasize the visibility of expert strategies through modeling, coaching, and gradual fading of support (Matsuo, 2024). These approaches align closely with scaffolding principles, providing structured pathways for learners to acquire complex cognitive skills. When applied to subject-specific contexts, such as arts or vocational training, scaffolding strategies help learners not only acquire technical proficiency but also internalize reflective practices that underpin independence (Kim & Han, 2022; Risaaldi & Widyawati, 2024).

Within Southeast Asian contexts, scaffolding research highlights its adaptability to local cultural and curricular needs. For example, studies in Indonesia demonstrate the effectiveness of scaffolding methods in improving conceptual understanding in science and moral education (Marlina & Rahayu, 2025; Sitini, 2025). Similarly, research on problem-based and inquiry-based learning models shows that scaffolding enables students to navigate challenging tasks more effectively, developing both cognitive skills and self-regulation (Thiện, 2024). These studies affirm that scaffolding is not a one-size-fits-all model but a flexible pedagogical approach responsive to diverse learning environments.

Theoretical debates also continue regarding the scope and interpretation of scaffolding and ZPD. Scholars argue about the conceptual boundaries between these constructs, with some highlighting their overlapping features and others cautioning against conflating them (Kolly-Shamne, 2022; Xi & Lantolf, 2020). Contemporary interpretations suggest that scaffolding should be viewed as a dynamic, context-dependent process rather than a static instructional technique. This evolving perspective reflects broader changes in pedagogy, where emphasis is placed on learner agency, adaptability, and collaborative meaning-making (Margolis, 2020).

Given the breadth of research, it is clear that scaffolding plays a multifaceted role in fostering independent learning. It enhances content understanding, supports the development of learning strategies, promotes socio-emotional resilience, and encourages learner autonomy across contexts and disciplines. However, challenges such as teacher expertise, resource limitations, and systemic pressures remain significant barriers to its consistent and effective application (Raslan, 2024; Risaaldi & Widyawati, 2024). Addressing these challenges requires both theoretical refinement and practical innovation, ensuring that scaffolding continues to evolve as a central pillar of modern pedagogy.

Against this background, the present study explores how teachers in Malaysia perceive and implement scaffolding practices in fostering independent learning.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a qualitative research design to explore the role of teacher scaffolding in fostering independent learning among students. A purposive sampling strategy was used to recruit participants who had direct experience in teaching and facilitating student-centered learning processes. The sample consisted of 25 teachers from various secondary schools and higher education institutions across Malaysia. Participants represented a range of subject areas and teaching experience levels to ensure diverse perspectives. The final number of participants was determined by the principle of theoretical saturation, where data collection ceased once no new themes or insights emerged.

2.2. Measures

Data were collected using semi-structured interviews, which allowed for both consistency across participants and flexibility to probe deeper into emerging ideas. The interview guide consisted of open-ended questions focusing on teachers' strategies, perceptions, and experiences related to scaffolding techniques and their impact on students' independent learning. Interviews were conducted face-to-

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face or via secure online platforms depending on participant availability and location. Each interview lasted between 45 and 60 minutes and was audio-recorded with participants' informed consent. All recordings were subsequently transcribed verbatim for analysis.

2.3. Data Analysis

Data analysis followed a thematic approach to identify recurring patterns and conceptual categories within the participants' narratives. NVivo 14 software was used to facilitate the systematic organization and coding of qualitative data. Initial open coding was conducted to capture meaningful units of text, which were then grouped into sub-themes and broader categories related to teacher scaffolding practices and independent learning outcomes. Iterative comparisons across transcripts ensured consistency and depth of coding. Throughout the process, constant reflection and peer debriefing were employed to enhance credibility and trustworthiness of the findings.

3. Findings and Results

The study included 25 teacher participants from secondary schools and higher education institutions across Malaysia. Of these, 14 were female (56%) and 11 were male (44%). Participants represented a range of teaching experience, with 6 teachers (24%) having less than 5 years of experience, 9 teachers (36%) between 6 and 10 years, and 10 teachers (40%) with more than 10 years of teaching practice. In terms of teaching levels, 15 participants (60%) were secondary school teachers and 10 participants (40%) were lecturers in higher education institutions. Participants also came from diverse subject areas, including languages (8 teachers, 32%), sciences (7 teachers, 28%), mathematics (6 teachers, 24%), and social sciences (4 teachers, 16%). This variation in gender, experience, and subject specialization provided a comprehensive range of perspectives on the role of scaffolding in fostering independent learning.

Table 1

Themes, Subthemes, and Concepts of Teacher Scaffolding in Fostering Independent Learning

Category (Theme)	Subcategory	Concepts (Open Codes)
1. Instructional Scaffolding Strategies	Guided Questioning	Prompting with "why/how" questions; Encouraging elaboration; Probing misconceptions; Stimulating critical reflection
	Modeling and Demonstration	Think-aloud teaching; Showing problem-solving steps; Using exemplars; Demonstrating strategies
	Chunking Content	Breaking lessons into smaller units; Sequencing from simple to complex; Highlighting key ideas; Reducing cognitive load
	Feedback and Correction	Immediate feedback; Clarifying errors; Reinforcing correct responses; Giving constructive suggestions
	Use of Learning Aids	Graphic organizers; Visual cues; Checklists; Digital scaffolds
	Gradual Release of Responsibility	Moving from teacher-led to student-led tasks; Scaffolding withdrawal; Encouraging independent attempts
	Differentiated Scaffolding	Adjusting support for weaker learners; Adapting to learning styles; Flexible pacing
2. Promoting Learner Autonomy	Encouraging Self-Reflection	Journaling; Self-assessment checklists; Goal-setting exercises
	Fostering Decision-Making	Allowing choice of topics; Encouraging learning path decisions; Involving students in task planning
	Building Self-Regulation	Time management strategies; Monitoring progress; Developing persistence
	Encouraging Peer Support	Peer teaching; Collaborative learning groups; Student-led discussions
	Intrinsic Motivation	Linking learning to interests; Celebrating small achievements; Promoting curiosity
3. Socio-Emotional Support in Scaffolding	Building Trust and Rapport	Warm teacher-student relationships; Active listening; Non-judgmental environment
	Emotional Encouragement	Motivational words; Reducing anxiety; Reassuring hesitant learners
	Creating a Safe Learning Climate	Respect for mistakes; Promoting inclusivity; Encouraging risk-taking
	Empowering Confidence	Recognizing effort; Positive reinforcement; Assigning leadership roles
	Addressing Learning Anxiety	Normalizing challenges; Stress reduction strategies; Encouraging peer empathy
	Cultural Sensitivity	Respecting diverse backgrounds; Adapting scaffolds to cultural norms; Avoiding bias
4. Challenges and Conditions of Effective Scaffolding	Time Constraints	Limited lesson time; Difficulty balancing content and support; Pressure to meet curriculum standards

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	Large Class Sizes	Managing individual scaffolds; Limited teacher attention; Noise and distraction
	Teacher Expertise	Lack of training in scaffolding; Limited awareness of strategies; Need for professional development
	Student Readiness	Varied prior knowledge; Different learning paces; Resistance to independence
	Resource Limitations	Lack of digital tools; Insufficient teaching aids; Limited classroom facilities
	Assessment Demands	High-stakes exams; Overemphasis on grades; Limited space for exploration
	Sustainability of Scaffolding	Maintaining long-term independence; Avoiding over-dependence; Ensuring transfer of skills

Theme 1: Instructional Scaffolding Strategies

Guided Questioning. Teachers described using guided questioning as a powerful tool for deepening student thinking. By asking "why" and "how" questions, they encouraged learners to critically reflect and articulate their reasoning. One participant stated: *"When I ask students 'why do you think this formula works?' they start to connect concepts rather than just memorize steps."* Such probing questions helped students uncover misconceptions and develop independent analytical skills.

Modeling and Demonstration. Modeling was another scaffolding strategy reported by participants. Teachers frequently demonstrated problem-solving methods and verbalized their thought processes to make strategies explicit. As one teacher explained: *"I often solve the first problem on the board while talking aloud about my reasoning, so students can see not only what to do but how to think."* Demonstrations provided learners with exemplars they could later emulate independently.

Chunking Content. Breaking content into manageable units emerged as a common technique. Teachers highlighted the importance of sequencing lessons from simple to complex and drawing attention to key ideas. One interviewee noted: *"Instead of giving a whole chapter at once, I break it down into smaller parts. It makes students less overwhelmed and more confident to handle tasks step by step."* This incremental approach reduced cognitive load and facilitated gradual mastery.

Feedback and Correction. Timely and constructive feedback was seen as central to scaffolding. Teachers corrected errors while also emphasizing positive aspects of student performance. One participant remarked: *"I always acknowledge what they did right before pointing out what needs to improve. It keeps them motivated and open to learning."* Such balanced feedback guided students toward refinement while sustaining their motivation.

Use of Learning Aids. Participants also mentioned supporting learners with tools such as graphic organizers, visual cues, and digital scaffolds. One teacher explained: *"Mind maps really help my students see connections between concepts. It gives them a structure they can later recreate on their own."* Learning aids functioned as temporary supports that students gradually internalized.

Gradual Release of Responsibility. Many teachers adopted the "I do, we do, you do" model, gradually transferring responsibility to students. One participant described: *"At first, I work closely with them, but over time I step back. I tell them: now it's your turn to show me how you would solve it."* This withdrawal of support was viewed as essential in fostering independence.

Differentiated Scaffolding. Teachers emphasized the need to adjust scaffolding to diverse learners. Some students required more structured support, while others thrived with greater autonomy. As one teacher put it: *"Some of my weaker students need constant prompting, while advanced ones only need a little nudge. I try to adjust depending on their needs."* Differentiation ensured inclusivity and effectiveness of scaffolding practices.

Theme 2: Promoting Learner Autonomy

Encouraging Self-Reflection. Teachers encouraged learners to engage in self-reflection through journaling and self-assessment checklists. One participant stated: *"I ask students to write short reflections after class about what they understood and what they found difficult. It makes them more aware of their learning process."* Such practices enhanced metacognitive awareness and ownership of learning.

Fostering Decision-Making. Allowing students to make choices was highlighted as an important scaffolding strategy. Teachers reported giving learners options in topics, projects, and methods of presentation. As one teacher shared: *"When students choose the topic they want to explore, they show more initiative and commitment."* Decision-making opportunities nurtured autonomy and responsibility.

Building Self-Regulation. Developing self-regulation skills was frequently mentioned. Teachers guided students in time management, monitoring progress, and persisting through challenges. One participant explained: *"I teach them to set small weekly goals and check their own progress. Over*

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time, they rely less on me and more on themselves." Such scaffolding promoted long-term independence.

Encouraging Peer Support. Participants described peer collaboration as an effective scaffold. Group work and peer teaching provided opportunities for students to learn from one another. As one teacher noted: *"When students explain concepts to peers, their understanding becomes clearer. It's a form of scaffolding that doesn't always come from the teacher."*

Intrinsic Motivation. Teachers stressed linking learning to students' interests to fuel intrinsic motivation. Celebrating achievements, however small, was a strategy to sustain engagement. One teacher remarked: *"I connect lessons to their hobbies, like using football statistics in math problems. Suddenly, they want to solve more."* Such strategies enhanced students' internal drive for learning.

Theme 3: Socio-Emotional Support in Scaffolding

Building Trust and Rapport. Participants emphasized the relational dimension of scaffolding. Establishing warm teacher–student relationships helped create a safe space for exploration. One teacher stated: *"When students feel I care about them, they dare to take risks in learning."* Trust enabled learners to embrace challenges.

Emotional Encouragement. Providing emotional support was essential in keeping learners motivated. Teachers used motivational words and reassurance to reduce anxiety. As one participant shared: *"Sometimes a simple 'you can do it' makes a student try again after failing."* Emotional scaffolding sustained persistence.

Creating a Safe Learning Climate. Teachers highlighted the importance of fostering an environment where mistakes were accepted as part of learning. One interviewee explained: *"I tell them mistakes are evidence of trying. In my class, errors are learning opportunities."* Such a climate encouraged experimentation and resilience.

Empowering Confidence. Recognizing effort and assigning leadership roles helped students develop confidence. A teacher reported: *"When I let students lead small group discussions, they start believing in their ability to contribute."* Empowerment was closely tied to building learner independence.

Addressing Learning Anxiety. Participants also noted that many learners struggled with anxiety. Strategies included normalizing challenges and encouraging peer empathy. As one teacher described: *"I remind them that struggling doesn't mean failure—it means growth."* Emotional scaffolding directly supported independent learning behaviors.

Cultural Sensitivity. Teachers underscored the need for culturally responsive scaffolding. One participant said: *"In Malaysia's diverse classrooms, I adapt examples so they are relevant to each student's background."* This sensitivity made scaffolding more effective and inclusive.

Theme 4: Challenges and Conditions of Effective Scaffolding

Time Constraints. Teachers frequently mentioned insufficient time as a barrier to scaffolding. The pressure to complete the syllabus often limited opportunities for individualized support. One teacher lamented: *"I want to guide each student, but with so little time, I end up rushing through content."*

Large Class Sizes. Managing scaffolding in large classrooms was another challenge. Teachers reported difficulties in giving attention to every learner. As one interviewee explained: *"With 40 students in one room, it's impossible to scaffold everyone effectively."*

Teacher Expertise. Some participants acknowledged gaps in their own knowledge of scaffolding strategies. Professional development was seen as necessary. One teacher reflected: *"We are told to use scaffolding, but we rarely receive training on how to do it effectively."*

Student Readiness. Variation in student readiness posed another barrier. While some students embraced independence, others resisted. One participant noted: *"Some students want the teacher to give them everything. They struggle when asked to work on their own."*

Resource Limitations. Limited access to digital tools and teaching aids constrained scaffolding practices. As one teacher shared: *"I wanted to use online platforms to guide learning, but many schools don't have stable internet."*

Assessment Demands. High-stakes exams often conflicted with scaffolding goals. Teachers felt pressure to prioritize exam preparation. One participant said: *"Independent learning is important, but the reality is students and parents care most about exam scores."*

Sustainability of Scaffolding. Finally, participants raised concerns about sustaining independence beyond the classroom. One teacher remarked: *"Students sometimes do well while I scaffold, but when support is removed, they fall back into dependence."* Ensuring long-term transfer of skills remained an ongoing challenge.

4. Discussion and Conclusion

The findings of this study highlighted four major themes in understanding how teacher scaffolding fosters

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independent learning: instructional scaffolding strategies, promotion of learner autonomy, socio-emotional support, and the challenges and conditions that influence effective scaffolding. Each of these themes reflects the multidimensional role of scaffolding in guiding learners toward greater independence. Importantly, the results underscore the balance between cognitive, motivational, and relational aspects of scaffolding, and align with the broader theoretical and empirical literature on the Zone of Proximal Development (ZPD) and instructional mediation.

Participants described a wide array of instructional scaffolding strategies, such as guided questioning, modeling, chunking content, timely feedback, use of learning aids, gradual release of responsibility, and differentiated support. These findings are consistent with established research emphasizing that scaffolding is not a single technique but a repertoire of instructional moves tailored to learners' needs (Margolis, 2020). Guided questioning in particular reflects the core principle of prompting learners to extend their thinking and bridge the gap between current and potential capabilities (Anwar et al., 2024). This aligns with the assertion that carefully crafted teacher questions stimulate higher-order thinking and create conditions for students to internalize problem-solving strategies.

Modeling and demonstration were also reported as central practices, echoing the literature on cognitive apprenticeship, which emphasizes the importance of making expert strategies visible to learners (Matsuo, 2024). Through think-alouds and exemplars, teachers help students observe and replicate complex reasoning processes, an approach that mirrors the apprenticeships in real-world learning environments. This supports the argument that scaffolding in practice often overlaps with the principles of apprenticeship, where learners gradually assume responsibility as mastery develops.

The reported strategy of chunking content into smaller, sequential units resonates with studies demonstrating that breaking tasks into manageable segments reduces cognitive overload and facilitates gradual mastery (Sitini, 2025). Similarly, feedback and correction were highlighted as pivotal, corroborating findings that scaffolded feedback enhances both accuracy and motivation (Xu, 2024). Participants' emphasis on balancing positive reinforcement with constructive criticism aligns with the notion that effective scaffolding involves both cognitive guidance and emotional encouragement (Radev & Pešikan, 2023).

The use of visual and digital learning aids also reflects the growing role of e-scaffolding in educational practice. Prior studies have shown that digital scaffolds, such as interactive maps or adaptive checklists, enhance conceptual understanding and engagement (Auliyani et al., 2023; Huang, 2022). Teachers' accounts of using mind maps and checklists mirror these findings and suggest that even simple tools can serve as powerful mediators of independent learning.

Finally, the gradual release of responsibility was reported as a core principle, which strongly echoes Vygotskyan interpretations of scaffolding within the ZPD (Kolly-Shamne, 2022). Teachers' practice of moving from direct support toward student independence illustrates the dynamic fading process described in prior theoretical and empirical accounts (Xi & Lantolf, 2020). Moreover, participants' emphasis on differentiating scaffolding according to learner needs affirms the necessity of adapting support to individual readiness and learning styles (Marlina & Rahayu, 2025).

The second theme emphasized strategies that foster autonomy, including encouraging reflection, decision-making, self-regulation, peer support, and intrinsic motivation. These practices reflect scaffolding's role in shifting responsibility from teacher to learner, thereby enabling the development of metacognitive skills and independence.

Self-reflection, supported through journaling and self-assessment, echoes research showing that scaffolding enhances metacognition and learner self-awareness (Ashar, 2024). Reflection prompts allow students to critically analyze their own learning processes, bridging classroom tasks with independent cognitive regulation. Encouraging learners to make decisions about topics and learning pathways aligns with evidence that scaffolding autonomy fosters intrinsic motivation and ownership (Nasir & Aziz, 2020). Teachers' reports of learners showing higher initiative when given choices validate the idea that autonomy-supportive scaffolding contributes to deeper engagement.

Building self-regulation was also widely reported by participants. This mirrors findings that scaffolded learning environments support the gradual development of time management, goal setting, and persistence (Nurfadila et al., 2024). By teaching students to set incremental goals and monitor progress, teachers facilitate independence in managing complex tasks. Encouraging peer support further reflects a sociocultural understanding of scaffolding, where learning is co-constructed in collaborative contexts (Homayouni, 2022). Peer-led scaffolding has been shown to improve speaking skills, vocabulary acquisition, and

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confidence in second-language classrooms, confirming the broader relevance of this practice.

Intrinsic motivation was also underscored by participants who linked learning to student interests and real-life contexts. This resonates with the role of emotions and motivation in scaffolding reported in the literature (Radev & Pešikan, 2023). When scaffolding integrates personal relevance, students develop a sense of purpose that drives them to sustain learning independently. This finding reinforces the argument that scaffolding is not merely instructional but motivational in nature.

The findings revealed that socio-emotional scaffolding was perceived as equally important as cognitive guidance. Teachers emphasized building trust, emotional encouragement, creating safe learning climates, empowering confidence, addressing anxiety, and practicing cultural sensitivity. This aligns with research emphasizing that effective teaching in the ZPD requires attention to both cognitive and emotional dimensions (Radev & Pešikan, 2023).

Building rapport and trust emerged as foundational, consistent with prior studies showing that relational scaffolding encourages risk-taking and experimentation (Thiện, 2024). By creating supportive classroom relationships, teachers provide learners with the confidence to step outside comfort zones. Emotional encouragement, such as reassurance and motivational language, supports persistence and resilience, echoing findings that affective scaffolding reduces anxiety and sustains learner motivation (Huang, 2022).

The emphasis on safe learning climates also parallels research highlighting the role of inclusivity and tolerance for error in scaffolding (Margolis, 2020). When students perceive mistakes as opportunities, they are more willing to take ownership of their learning processes. Similarly, empowering confidence through leadership roles aligns with apprenticeship models, where responsibility is incrementally delegated (Matsuo, 2024).

Addressing learning anxiety was noted as particularly important. This echoes findings that students' emotional states mediate the effectiveness of scaffolding, as anxiety can hinder the internalization of strategies (Raslan, 2024). Teachers' use of stress reduction strategies reflects an integration of socio-emotional scaffolding into academic tasks. Furthermore, cultural sensitivity was highlighted as essential in Malaysian classrooms, resonating with literature emphasizing contextual adaptability of scaffolding (Risaaldi & Widyawati, 2024; Sitini, 2025). The ability to tailor scaffolding to diverse learners underscores its dynamic and flexible nature.

While the benefits of scaffolding were evident, participants also reported challenges such as time constraints, large class sizes, teacher expertise, student readiness, limited resources, exam-driven pressures, and sustainability of scaffolding. These findings reflect widespread concerns in the literature about the conditions under which scaffolding can be effectively implemented.

Time constraints and curriculum pressures were consistent with findings that teachers often struggle to balance scaffolding with coverage demands (Raslan, 2024). Large class sizes exacerbate this issue, limiting the possibility of individualized scaffolding (Nasir & Aziz, 2020). Teacher expertise was also identified as a limitation, aligning with studies that call for professional development to enhance teachers' scaffolding skills (Kolly-Shamne, 2022).

Variability in student readiness was another challenge. Some learners resisted independence, preferring teacher-led instruction, which mirrors prior accounts of students struggling with the transition from guided to autonomous learning (Xi & Lantolf, 2020). Limited access to digital tools and resources was also highlighted, echoing studies that identified the uneven distribution of technological scaffolds (Auliyani et al., 2023; Huang, 2022). Moreover, the dominance of exam-oriented assessment was seen as a barrier to sustained scaffolding, consistent with research showing that high-stakes testing often narrows pedagogy to rote learning (Marlina & Rahayu, 2025).

Finally, sustainability of scaffolding was raised as a concern. Participants observed that learners sometimes regressed into dependence once scaffolds were removed. This reflects broader theoretical debates about the fading process and the conditions under which independence is genuinely achieved (Margolis, 2020). These challenges underscore the complexity of operationalizing scaffolding and highlight the need for systemic and institutional support.

This study, while offering valuable insights, is not without limitations. First, the sample consisted of 25 teachers from Malaysia, which provides rich contextual perspectives but limits generalizability to other educational systems. Second, data collection relied exclusively on semi-structured interviews. While this allowed for in-depth exploration of teachers' perceptions, it did not capture direct classroom observations or student perspectives, which could have offered a more holistic understanding of scaffolding practices. Third, the reliance on self-reported data introduces

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the possibility of bias, as participants may have emphasized ideal practices rather than actual classroom behaviors. Finally, while thematic analysis using NVivo 14 provided systematic coding, the interpretation of qualitative data remains subject to researcher reflexivity and contextual influence.

Future research could expand on these findings by adopting a mixed-methods design that combines teacher interviews with classroom observations and student surveys. This triangulation would allow for a more comprehensive understanding of how scaffolding functions in practice and how learners experience it. Comparative studies across different cultural and institutional contexts would also provide insights into how scaffolding adapts to diverse environments. Additionally, longitudinal studies are needed to assess the sustainability of scaffolding in fostering independence beyond short-term outcomes. Research exploring the integration of digital scaffolds, particularly in hybrid or online learning contexts, could further illuminate emerging opportunities and challenges.

In practical terms, the findings suggest several implications for educators and policymakers. Teachers should be encouraged to diversify their scaffolding strategies, balancing cognitive, motivational, and socio-emotional support. Professional development programs could focus on equipping teachers with concrete scaffolding techniques and strategies for gradually releasing responsibility. Institutions should address structural barriers such as large class sizes and time constraints by promoting flexible curriculum designs. Finally, embedding scaffolding within broader educational policy frameworks can ensure that fostering independent learning becomes a systemic priority rather than an individual teacher's responsibility.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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