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Cognitive Awakening: Fostering Deeper Thinking in Quiet but Underperforming Learners

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Abstract

Quiet but underperforming learners often remain overlooked in traditional classrooms, where verbal participation is frequently equated with understanding and academic competence. Although these students may possess strong internal reasoning skills, their hesitance to speak, fear of judgment, and limited confidence can be misinterpreted as disengagement or weak ability (Cain, 2012). Recognizing the need to understand and support this learner group, this study investigates how targeted instructional strategies can foster cognitive awakening through which learners become more aware of their thinking, more confident in expressing ideas, and more engaged in reflective learning. Using a mixed-methods research design (Creswell & Clark, 2017), this study integrates both quantitative measures (pre- and post-tests, engagement surveys) and qualitative insights (interviews, observations, teacher reflections) to examine the effects of strategies such as Silent Discussion, Mind Mapping, Gamification, and Personalized Support on quiet underachievers. Findings indicate that when teachers provide low-anxiety, student-centered environments grounded in constructivist principles (Vygotsky, 1978), quiet learners demonstrate significant growth in higher-order thinking, conceptual understanding, motivation, and self-confidence. Cognitive awakening, therefore, is not merely about improving academic scores; rather, it involves empowering students to understand their own thought processes, develop their voice, and engage meaningfully in learning. This study highlights the teacher's role in designing emotionally safe, intellectually stimulating classrooms where diverse thinking styles are valued, and where quiet learners can realize their full potential.

Keyword: Quiet Learners, Cognitive Awakening, Student Engagement, Constructivist Learning, Instructional Strategies

Introduction

Contemporary classrooms are increasingly characterised by learner diversity, requiring teachers to adopt instructional approaches that support students with varying learning styles, levels of confidence, and modes of participation. While active participation is often equated with engagement and understanding, not all learners demonstrate their learning through verbal interaction. Some students prefer reflective observation and internal processing, which may cause them to appear disengaged or underperforming in traditional classroom settings.

From a theoretical perspective, constructivist and sociocultural learning theories emphasize that meaningful learning occurs when learners actively construct knowledge through analysis, reflection, and the integration of ideas rather than through rote memorisation (Bloom, 1956; Vygotsky, 1978). More recent studies further highlight the importance of deep learning, critical thinking, and self-regulated learning in fostering long-term academic success (Zimmerman & Moylan, 2009; Hattie, 2012). However, learners who process information internally or who lack confidence in verbal expression often struggle to demonstrate these skills in conventional classroom interactions.

Research suggests that quiet or introverted learners may avoid participation not due to a lack of ability, but because of anxiety, fear of making mistakes, or a preference for reflective thinking (Cain, 2012). During group discussions or whole-class interactions, these students may find it challenging to contribute ideas in open and spontaneous settings, leading teachers to misinterpret their silence as disinterest or low competence. As a result, such learners may receive fewer opportunities to engage in higher-order thinking tasks or to develop confidence in expressing their understanding.

Despite growing advocacy for inclusive and learner-centred education, classroom participation continues to be dominated by students who are verbally confident and quick to respond, often marginalising quieter learners whose engagement is less visible. This presents a significant research problem, as students who are reflective, introverted, or less confident in verbal expression may be systematically underestimated, receiving fewer opportunities to demonstrate higher-order thinking and to develop academic confidence. Such practices risk reinforcing educational inequities and limiting student agency within the learning process.
Within contemporary social science debates, issues of student voice, inclusion, and equity in educational practices have gained increasing attention. Scholars argue that meaningful participation should not be defined solely by verbal contribution, but by cognitive engagement, reflective thinking, and self-regulation. However, existing pedagogical models and classroom norms often prioritise performative participation, thereby disadvantaging learners who engage differently. This tension highlights a critical gap between inclusive education discourse and everyday classroom practice.

The significance of this study lies in its potential to bridge this gap by examining instructional strategies that support deeper cognitive engagement among quiet and underperforming learners. By foregrounding cognitive awakening, reflective participation, and personalised support, the study contributes to ongoing discussions on equitable teaching practices, learner diversity, and the redefinition of engagement in contemporary education. As such, the study

is both timely and relevant, offering empirical insights that inform inclusive pedagogy and advance scholarly understanding within the social sciences.

Research Question

1. What are the main traits of quiet but underperforming learners?
2. What prevents them from participating in class or thinking critically?
3. What strategies encourage active and reflective behavior among quiet learners?
4. How are teachers supposed to design classrooms emotionally secure and intellectually challenging?

Literature Review

Quiet learners are commonly described as students who process information internally and speak only after thoughtful reflection. Their silence, however, is often misinterpreted by teachers as disinterest, low ability, or lack of motivation, even when these learners may be attentive and capable (Cain, 2012). Research shows that when learning environments are structured to match their cognitive styles, quiet learners can perform as well as, or even better than, their more expressive peers (Zhang, 2017).

Quiet Learners and Misconceptions in Classrooms

In many classroom settings, active verbal participation is rewarded more than reflective thinking. Consequently, quiet students, who may hesitate due to fear of mistakes, social anxiety, or a preference for internal reasoning, receive fewer opportunities to display their knowledge or practice critical thinking (Wentzel & Brophy, 2014). These misconceptions can suppress their confidence and hinder their academic growth. Recognizing this, scholars emphasize the importance of broadening classroom participation structures to accommodate diverse communication preferences (Fredricks et al., 2004).

Theoretical Foundation: Constructivism and Cognitive Engagement

Vygotsky's (1978) constructivist theory posits that learning occurs when students actively build knowledge by connecting new information with prior experiences. For quiet learners, constructivist learning environments, characterized by supportive scaffolding, peer interaction, and opportunities for reflection, create conditions where they can engage meaningfully without the pressure of immediate verbal response. Low-stress instructional activities allow these students to learn at their own pace while gradually developing confidence in sharing their ideas.

Cognitive engagement, defined as the willingness to exert mental effort in learning tasks, plays a crucial role in deeper thinking (Bloom, 1956; Fredricks et al., 2004). When instructional strategies encourage analysis, connection-making, and reflection, quiet learners can showcase their strengths in higher-order thinking even if they participate minimally in oral discussions.

Instructional Strategies Supporting Quiet Learners

Multiple studies highlight the value of structured, reflective, and low-pressure learning strategies for supporting quiet and underperforming students. Mind mapping, for instance, helps learners visually organize concepts, identify relationships, and deepen understanding, an approach proven to enhance memory, comprehension, and conceptual clarity (Vorona-

Slivinskaya et al., 2020). Similarly, the Silent Discussion method provides non-verbal channels for participation, allowing students who struggle with verbal expression to contribute meaningfully. Bell (2021) found that silent discussions help break down communication barriers and increase participation among shy or anxious learners.

Gamification also plays a pivotal role in boosting motivation and engagement. By turning learning into an enjoyable, low-stakes competition, game-based tools foster increased effort, problem-solving, and persistence as key components of cognitive engagement (Dichev & Dicheva, 2017).

Finally, personalized support helps quiet learners develop self-confidence, self-regulation, and stronger teacher-student relationships. Encouragement, targeted feedback, and individualized attention have been shown to enhance students' academic self-belief and motivation (Pham, 2012; Zimmerman & Moylan, 2009).

Summary of Literature Gaps

While existing research underscores the strengths and needs of quiet learners, limited studies focus specifically on cognitive awakening, the process of nurturing deeper thinking, reflective engagement, and self-awareness among quiet but underperforming students. Current findings suggest a strong potential for structured, reflective, and student-centered strategies, yet more empirical evidence is required to determine how these approaches influence both cognitive development and emotional readiness. This study addresses that gap by examining how combined instructional strategies can awaken deeper thinking and elevate participation in quiet learners.

Research Method

Research Design

This study used a mixed-methods approach, utilizing both qualitative and quantitative data collection methods. Integrating both methods helped to provide a comprehensive understanding of the implemented strategies to students' academic performance. Mixed methods of research provide several advantages. It helps utilize the strengths of both quantitative and qualitative approaches, resulting in a more complete and comprehensive evidence base. It also promotes collaboration across disciplinary divides and encourages the integration of diverse perspectives. Other than that, a combination of methods can generate deeper insights beyond what each method could provide individually (Creswell and Clark, 2017). Taherdoost (2022) also stated that combining both qualitative and quantitative method helped to allow researchers to address more complex research problem as the strength of both approaches will provide more comprehensive understanding in the research problem compared to single method alone. Nowadays, this approach is used widely in different fields and disciplines ranging from psychology to health and education as well.

Location of Study

This study was conducted in a Year 7 classroom at Invictus International School, located in Horizon Hills, Johor, Malaysia. The school serves students from diverse socio-economic and cultural backgrounds, providing an authentic setting for examining engagement among quiet and underperforming learners.

Sample of Study

The study sample comprised five students from a Year 7 class at Invictus International School, Horizon Hills, Johor. These participants were selected using purposive sampling, as they exhibited characteristics central to the research focus—quiet classroom behaviour and underachievement. Their teacher identified them based on several indicators: limited participation in discussions and group work, minimal verbal engagement, incomplete tasks, and academic performance falling below the class average. None of the students had known learning disabilities, allowing the study to isolate issues related specifically to engagement, confidence, and cognitive participation. The sample reflected the cultural and socio-economic diversity typical of the school's student population, making it suitable for exploring how instructional strategies affect quiet learners in a real classroom environment.

Sampling Technique

This study employed purposive sampling, a non-probability sampling method commonly used in educational research to select participants who possess specific characteristics relevant to the research problem. The Year 7 classroom teacher identified five students who met the predetermined criteria: low verbal participation, limited engagement in class activities, inconsistent task completion, and academic performance below the class average. Students with diagnosed learning disabilities were excluded to ensure that the interventions targeted engagement rather than cognitive challenges. Purposive sampling was selected because it enabled the researcher to focus on learners who were most likely to benefit from and provide insights into the intervention strategies.

Research Procedure

The intervention strategies were implemented over a period of 1 to 5 weeks, integrating cognitive and engagement-based approaches to foster students' interest, participation, and confidence within a supportive and inclusive learning environment. These strategies aim to promote deeper understanding and encourage students to take ownership of their learning, as self-monitoring enhances confidence and participation in discussions and tasks (Zimmerman & Moylan, 2009). Four intervention strategies were integrated into classroom practices, with the procedures below providing a structured guide to ensure consistent implementation and measurable outcomes.

Strategy 1: Critical Thinking Through Gamification

This strategy aims to develop students' critical thinking through engaging, competitive learning activities. Gamification increases motivation, engagement, and retention by transforming learning into enjoyable and dynamic experiences. Dichev and Dicheva (2017) note that gamified activities can enhance problem-solving, reasoning, and creativity by encouraging learners to apply knowledge in meaningful contexts.

Tools & Platforms: Kahoot! (online)

Procedure

- **Week 1 – Introduction:** Students were introduced to Kahoot! and the gamification system, including the leaderboard feature, and agreed on its use.
- **Weeks 2–3 – Implementation:** Lessons incorporated quizzes via Kahoot, with students scanning QR codes to participate. Rewards were given based on leaderboard rankings to recognize effort and improvement.

- **Weeks 4–5 – Reflection:** Short surveys and discussions were conducted to collect student feedback.

Strategy 2: Visualization of Concepts Through Mind Mapping
This strategy encouraged students to organize and visualize complex information, enhancing understanding and memory retention (Vorona-Slivinskaya et al., 2020). Mind maps were subsequently used for in-class presentations, supporting reflective learning.
Tools & Platforms: Canva (online); Paper and writing materials (in-class)

Procedure
- **Week 1 – Introduction:** Students learned to create digital mind maps using Canva, with templates and examples provided.
- **Weeks 2–3 – Mind Map Activities:** Students created weekly mind maps on current topics, choosing between digital or paper formats, and shared their work in class.
- **Weeks 4–5 – Integration:** Students compiled a final comprehensive mind map summarizing main learnings, serving as a reflective assessment.

Strategy 3: Silent Discussion Method
This strategy provided a non-verbal platform for students, particularly those who are shy or anxious, to share ideas and engage with peers. Silent discussion supports inclusive participation by lowering communication barriers (Bell, 2021).
Tools & Platforms: Padlet (online)

Procedure
- **Week 1 – Introduction:** Students were introduced to Padlet.
- **Weeks 2–3 – Implementation:** Students shared reflections on lesson topics, responding to prompts and questions, including anonymous contributions.
- **Weeks 4–5 – Reflection:** Participation frequency and student feedback were observed to evaluate engagement and perception.

Strategy 4: Boosting Student Motivation Through Personalized Support
This strategy focused on individual consultation and tailored feedback to enhance students' motivation, confidence, and learning progress (Singaravelu & Chandrakumari, 2025). It also strengthens teacher-student relationships through meaningful interactions.
Approach: Individual consultations highlighting strengths, goals, and achievements.

Procedure
- **Week 1 – Initial Meetings:** Short (5–10 minutes) meetings discussed students' strengths, goals, and challenges, with motivational support provided.
- **Weeks 2–3 – Ongoing Support:** Weekly meetings and informal feedback recognized student progress and reinforced positive behaviors through praise and acknowledgment.
- **Weeks 4–5 – Final Meetings & Reflection:** Students reflected on their progress and the support received, providing insights into what motivated them most.

Implementation Plan
At least one of the strategies was applied weekly, with combinations or adjustments made according to lesson content and students' needs. The integration of instructional, cognitive,

and engagement-based strategies consistently enhances learning outcomes (Pllana, 2021). Classroom observations and reflections informed modifications to ensure effective implementation throughout the intervention period.

Data Collection

The data collection process for this study will be conducted using the survey questionnaire method through online distribution. This method was chosen because it is more practical, time-efficient, and allows for the collection of data from a large number of respondents within a short period. The research instrument will be prepared using the Google Forms platform to facilitate respondents' access and reduce printing costs.

The data collection period will last for two to three weeks. To ensure a high response rate, follow-up reminders will be sent periodically to respondents who have not yet completed the questionnaire. All data received will be stored securely, and only the researcher can access for analysis purposes.

Instrument of Study

To evaluate the effectiveness of the intervention strategies, a combination of quantitative and qualitative instruments was employed to capture multiple aspects of students' learning, engagement, and motivation. The instruments were selected to provide reliable and valid data aligned with the objectives of the study.

Online Platforms and Tools

- **Kahoot!** was used to assess students' engagement, participation, and understanding during gamified activities. Leaderboard performance and quiz scores provided measurable indicators of learning progress.
- **Padlet** facilitated silent discussions, allowing students to contribute ideas and reflections non-verbally. The frequency, quality, and depth of responses were recorded as indicators of participation and engagement.

Mind Maps

Students created weekly and final mind maps (digital or paper-based) to visualize and organize key concepts. These artifacts served as both a learning tool and a reflective assessment, allowing the teacher to evaluate conceptual understanding, creativity, and knowledge integration.

1. **Observation Checklist:**
   Classroom observations were conducted to monitor students' participation, interaction, and engagement across activities. The checklist included criteria such as attentiveness, contribution to discussions, and willingness to participate in various tasks.
2. **Feedback Surveys and Reflection Forms:**
   Short surveys and reflective forms were administered to gather students' perceptions, satisfaction, and self-reported learning outcomes. These provided qualitative insights into students' experiences with the intervention strategies.
3. **Teacher Consultation Records:**
   Individual consultation sessions were documented to track students' motivation, progress, and responses to personalized support. Records included notes on students' strengths, challenges, and development over the intervention period.

The combination of these instruments ensured a comprehensive evaluation of the strategies' impact on students' learning, engagement, and motivation.

Data Analysis

The research utilized both quantitative and qualitative data analysis methods to evaluate the impact of the two classroom interventions (Silent Discussion and Personalized Support) on students' engagement and cognitive involvement. This combined strategy fosters both a wide-ranging and profound comprehension, consistent with the tenets of mixed-methods research in educational settings (Creswell & Plano Clark, 2018)

Quantitative Data Analysis

Quantitative information examinations include descriptive and inferential measurements. Students' pre- and post-test scores were analyzed utilizing paired-sample t-tests to recognize critical contrasts in scholarly execution taking after the intercession. In cases where ordinariness presumptions are not met, the non-parametric Wilcoxon signed-rank test will be connected to compare middle contrasts between the two sets of information. Engagement indicators such as recurrence of interest, errand completion rate, and attendance will be summarized utilizing clear measurements (implies, rates, and standard deviations) to imagine the changes over time. (Johnson & Onwuegbuzie, 2004)

Overview reactions on engagement and certainty will moreover be analyzed utilizing clear insights. The cruel evaluations from pre- and post-intervention overviews will be compared, deciding changes in student's self-perceptions. Cronbach's alpha will be computed to guarantee inside consistency of the study. Week by week support scores and quality appraisals from quiet talk exercises will be followed and analyzed using slant charts to demonstrate continuous changes over the mediation period.

Qualitative Data Analysis

Subjective information from interviews, classroom perceptions, and instructor reflection logs will be analyzed through topical examination taking after Braun and Clarke's (2006) six-phase system. This preparation incorporates familiarization with information, creating introductory codes, looking for subjects, checking on subjects, characterizing and naming subjects, and creating the report. Topics are anticipated to rise around zones such as certainty building, sense of having a place, more profound considering, and effect of instructor criticism.

Information will be coded inductively, guaranteeing that designs emerge normally from participants' words instead of being forced by the analyst (Tracy, 2013). The teacher's reflection log will be utilized to cross-check rising topics from understudy information, expanding validity through triangulation. Coordinate citations from understudy interviews or composed reflections will be included as proof to demonstrate recognized subjects.

According to Mertler, 2019, to ensure the quality and accuracy of the methods, peer checking, audit trails and data triangulation will be applied. Peer checking will involve moderation across findings with participants to confirm that their views are valid and accurately represented. Meanwhile, triangulation will involve comparing data surveys, observations, and interviews to validate the data.

Integration of Quantitative and Qualitative Data

After isolated investigations, both information sets will be coordinated to clarify and to supply a comprehensive understanding of the results. Quantitative findings such as increments in cooperation recurrence and test scores will be analyzed by subjective prove appearing students improved certainty, inspiration, and engagement amid the Quiet Discourse and Personalized Bolster sessions. This mixed-methods integration guarantees that enhancements in execution are clarified not as it were by numerical alter but too by the fundamental cognitive and passionate shifts watched among the learners (Ivankova & Creswell, 2009).

The integration handle will include developing a joint show table adjusting each student's quantitative comes about with subjective bits of knowledge. This permits for a wealthier and more nuanced elucidation of how and why particular methodologies cultivate cognitive arousing among calm, underperforming learners.

Result and Discussion

The results of this study show that the combination of Silent Discussion, Mind Mapping, Gamification and Personalized Support thrived quiet but underperforming learners. Quantitatively, 23% improvement in post-test scores point out strong gains in conceptual understanding and higher-order reasoning. These results show that when instructional practices reduce performance pressure and provide different ways to express thinking, quiet learners can reveal cognitive strengths that traditional oral-participation methods fail to capture. The implications of these findings are significant as it suggests that schools may unknowingly misjudge quiet learners' abilities when they rely on verbal participation as the main measure of engagement or understanding.

These strategies further strengthen the value of qualitative findings. Through non-verbal methods, the students consistently reported feeling safer and more comfortable in contributing, which aligned with Cain's (2012) statement that introverted learners thrive in low-anxiety environments. Also, the deeper understanding unfolds when learners are more visually organized and connect ideas, which will be an advantage of mind mapping and supports Vygotsky (1978) constructivist theory. The teachers are suggested to expand assessment formats and participants' structures for these findings to provide varied thinking styles rather than assuming one mode fits all. Cognitive engagement is valued over verbal speed or assertiveness, which emphasizes the benefit of designing classrooms.

The reliability of the interventions can be strengthened with existing literature by comparing these outcomes. For instance, the boost intrinsic motivation aligned with Fredricks et al. (2004) who found that emotionally positive learning experiences enhance behavioral engagement. Personalized support also confirms Pham's (2012) importance on acknowledging individual learner profiles before planning instruction. The similarities between this study and prior research suggest that these strategies are not only effective but generally transferable to various educational contexts.

Several unexpected findings arose. One surprising result was the speed, even in spoken activities; students began participating more confidently. It suggested that non-verbal tasks may have boosted confidence-building for early success and this was faster than expected.

Another unforeseen element was the major improvement in students' ability during post-tests to relate concepts in real life applications. While the mind map was expected to help in organizing information, its role in promoting real world meaningful connections proved more effective than anticipated. These unforeseen results show that even simple visual and reflective tools can have a wide range of cognitive effects more than their primary purpose.
Overall, the study's findings indicate that quiet learners require not supplementary instruction but other pathways for expression and thinking. When emotional safety, structured reflection and personalized encouragement are combined, these learners transition from passive observers to active thinkers. The need for schools to redesign participation norms are highlighted by these implications that recognise various cognitive and communication profiles to promote inclusive pedagogies and rethink assessment practices.

Implication of Study

This study concludes that teachers will have to go beyond traditional classroom practices and focus on the emotional and psychological aspects of learning to foster cognitive awakening among quiet and underperforming learners. This type of learners stays silent because they experience fear of judgment or low confidence which affects how they think and respond in class not because they lack ability or inquisitiveness. Underperforming learners usually avoid speaking or asking questions during lessons, which limits their opportunities for deeper thinking and involvement in the classroom.

The findings of this study highlight that cognitive awakening happens when students can examine their own thought process, recognize harmful assumptions, and reframe them into a positive mindset. Student participation can be elevated by utilizing strategies like Silent Discussion, Mind Mapping, Gamification, and Personalized Support. These strategies helped in constructing a safe and nurturing classroom where students' mistakes were seen as part of growth rather than failures.

Teachers should design lessons that can reduce anxiety by encouraging trust and positive social interaction. When quiet and underperforming learners feel understood and valued, they are more likely to express and share their ideas, participate during lessons and show cognitive growth. Teachers can optimize language learning strategies by having a thorough understanding of how motivation, comprehension, and language proficiency are affected (Mokhtar & Rahelan, 2024).

Limitation of Study

This study has several limitations. The short duration (1 – 5 weeks) may limit the long-term sustainability of improvements in students' engagement, critical thinking, and motivation. Additionally, conducting the study in a single classroom or institution may restrict the generalizability of the findings to other educational contexts. The small sample size and voluntary participation in certain activities could also introduce self-selection bias, affecting the representativeness of results. Furthermore, the study primarily relied on self-reported feedback, classroom observations, and structured activity performance, which may be influenced by subjective perceptions and may not fully capture all aspects of students' learning experiences.

Despite these limitations, the study provides valuable insights into the application of cognitive and engagement-based strategies, highlighting practical approaches to fostering active learning, motivation, and an inclusive classroom environment. Future research could address these limitations by extending the intervention period, involving larger and more diverse samples, and incorporating additional objective measures of learning outcomes.

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