



Bridging Cognition and Pedagogy: A Transcendental Meditation-Based Deep Learning Model in English Language Teaching

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Abstract

Recent advances in English Language Teaching (ELT) emphasize deep learning approaches that promote higher-order thinking skills; however, insufficient attention has been given to students' cognitive readiness as a prerequisite for meaningful engagement. While Transcendental Meditation (TM) has been widely reported to enhance psychological wellbeing and attention, existing studies largely focus on general outcomes rather than its integration within subject-specific pedagogy and its effect on higher-order literacy processes. Addressing this gap, the present study aims to (1) design a TM-based deep learning instructional model for ELT and (2) examine students' perceptions of its integration in learning. This study employed a design-based research approach combined with qualitative inquiry, involving Grade 10 students. Data were collected through a student perception questionnaire, reflective journals, and focus group discussions (FGDs). The intervention model was implemented through a structured five-phase learning cycle: cognitive centering (TM), activation of prior knowledge, deep engagement, collaborative knowledge construction, and reflective metacognition. Data were analyzed using descriptive statistics and thematic analysis. The findings reveal that the TM-based model effectively supports students' concentration, emotional stability, and readiness to learn, which subsequently enhances their engagement in complex literacy tasks. Students perceive TM as an integral component of learning that facilitates clearer thinking, reduced anxiety, and deeper comprehension. The study contributes a novel pedagogical framework that integrates cognitive preparation with deep learning processes in ELT. Pedagogically, the findings suggest that embedding TM within instructional design can optimize students' cognitive conditions, enabling more effective engagement with higher-order language tasks. This highlights the importance of incorporating cognitive-affective readiness into contemporary ELT practices for future research, including investigating long-term impacts and broader classroom applications.

Keywords: Transcendental Meditation (TM); Deep Learning; English Language Teaching (ELT); Reading Literacy; Cognitive Readiness

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1. Introduction

Recent shifts in educational priorities toward higher-order competencies—such as critical thinking, problem solving, and deep understanding—reflect a broader transformation from surface-level knowledge acquisition to deep learning, where learners are expected to analyze, evaluate, and synthesize information across contexts (Fullan et al., 2018; OECD, 2019b). Within English Language Teaching (ELT), this paradigm is grounded in cognitive and constructivist theories that emphasize active meaning-making, metacognition, and knowledge integration (Muna et al., 2020). However, despite these expectations, many learners continue to struggle with higher-order literacy tasks, particularly those requiring sustained attention, inferential reasoning, and complex meaning-making (OECD, 2019a; Snow, 2010).

While prior research has identified factors such as attention, motivation, and self-regulation as important contributors to learning, this study conceptualizes cognitive readiness as a broader, integrative construct. Drawing on cognitive and affective learning theories (Pekrun, 2006; Immordino-Yang & Damasio, 2007; Posner & Rothbart, 2007), cognitive readiness is defined as a holistic preparatory mental state in which attentional stability, emotional regulation, and mental clarity are aligned to support engagement with cognitively demanding tasks. Unlike attention (momentary focus), motivation (goal-directed drive), or self-regulation (strategic control), cognitive readiness represents a baseline enabling condition that underpins the effective functioning of these processes (Sweller et al., 2011). In this sense, it serves as a prerequisite state that determines the depth and quality of learners' engagement in higher-order thinking activities.

This perspective aligns with Cognitive Learning Theory and Cognitive Load Theory (CLT), which emphasize that learning is shaped by internal cognitive processes and constrained by working memory limitations (Sweller, 2019). Tasks such as inferential reading, argument evaluation, and summarization require not only linguistic competence but also optimal cognitive conditions to prevent overload and facilitate deep comprehension (Syagif, 2024). However, empirical evidence indicates that many learners fail to achieve deep learning outcomes due to unaddressed cognitive and affective barriers. Anxiety, distraction, and emotional instability can impair attention regulation and working memory, thereby reducing comprehension and higher-order reasoning (Ashcraft & Krause, 2007; Marlene et al., 2024; Priya, 2024). These findings suggest that effective pedagogy must extend beyond instructional design to include the preparation of learners' internal cognitive-affective states.

Within this framework, contemplative practices are explored as mechanisms for enhancing cognitive readiness. Among various approaches, Transcendental Meditation (TM) is selected due to its distinctive theoretical and practical characteristics. TM is an effortless technique that allows the mind to experience a state of deep rest while maintaining alertness (Roth, 2022; Travis & Shear, 2010a). Unlike mindfulness-based approaches that require sustained attentional monitoring, TM minimizes cognitive effort, making it particularly suitable as a pre-instructional intervention from a cognitive load perspective (Sweller et al., 2011). Empirical studies have shown that TM improves attention, memory, and executive functioning, while also reducing stress and enhancing emotional regulation (Nidich et al., 2009; Travis et al., 2021; Waters et al., 2014; Zenner et al., 2014). These features make TM especially appropriate for classroom integration, where simplicity, scalability, and minimal disruption are critical.

Importantly, the contribution of TM extends beyond general wellbeing. Its influence on higher-order literacy skills can be understood through its impact on core cognitive processes



underlying deep learning. By reducing anxiety and cognitive interference, TM helps optimize working memory capacity, enabling learners to process complex linguistic information more effectively (Sweller et al., 2011). Enhanced attentional stability supports sustained engagement with texts, while improved emotional regulation facilitates deeper cognitive processing and meaning construction (Immordino-Yang, 2016). These conditions are essential for higher-order literacy processes such as inference, synthesis, and evaluation, as described in models of text comprehension (Kintsch, 1998). From a neurolinguistic perspective, TM-induced states of relaxed alertness may enhance neural efficiency and connectivity, supporting deeper processing of linguistic input and more effective schema construction (Boothby, 1999). Thus, TM is positioned not merely as a wellbeing intervention, but as a cognitive-enabling mechanism that strengthens the mental conditions required for deep engagement with language.

At the same time, advances in deep learning pedagogy and educational technology, including AI-driven and adaptive learning systems, have expanded opportunities for personalized and cognitively engaging instruction (Chen, 2024; Tatipang et al., 2025). These approaches emphasize learner autonomy, critical reflection, and contextual application of knowledge (Eslit, 2025). However, their effectiveness is often constrained by a predominant focus on external instructional optimization, with limited attention to learners' internal cognitive readiness. Emerging research on mindfulness-enhanced language teaching suggests that integrating contemplative practices with deep learning frameworks can create more holistic learning environments that support both cognitive and emotional dimensions of learning (Gönen, 2024; Zhao, 2024).

Taken together, the literature reveals three key gaps. First, existing cognitive and pedagogical models insufficiently address learners' cognitive readiness as a foundational condition for deep learning. Second, although TM has demonstrated significant cognitive and affective benefits, its application in domain-specific ELT contexts—particularly for higher-order literacy skills—remains underexplored. Third, current deep learning and technology-enhanced models emphasize instructional design without integrating cognitive-preparatory mechanisms.

Addressing these gaps, the present study proposes a Transcendental Meditation-based deep learning model that explicitly bridges cognition and pedagogy. By positioning TM as a preparatory phase within a structured deep learning cycle, this model seeks to enhance students' readiness to engage in complex language tasks. Empirically, the study examines how TM influences key competencies such as reading literacy, summarizing ability, and higher-order reasoning. Theoretically, it advances an integrated framework that situates cognitive readiness as a foundational component of deep learning, offering a novel interdisciplinary contribution to ELT research.

2. Method

This study employed a Design and Development (D&D) approach supported by both descriptive qualitative and quantitative data. D&D is particularly appropriate for developing and refining educational interventions within authentic contexts, as it integrates theoretical grounding with iterative design, implementation, and evaluation (Brown, 1992; Wang & Hannafin, 2005). The approach enables the construction of pedagogical models that are both empirically grounded and practically applicable. To address the first research objective, the study followed iterative stages of needs analysis, model design, expert validation, and limited classroom implementation. The second objective was examined through students' perception data collected using



questionnaires, reflective journals, and focus group discussions, complemented by descriptive observations of classroom engagement.

The study was conducted at SMA Bali Mandara, a public boarding school that integrates consciousness-based education, bilingual instruction, and Transcendental Meditation (TM) practices. This context provided a unique environment for examining the pedagogical integration of TM within structured academic learning. Participants were selected using purposive sampling to ensure alignment with the research objectives (Creswell, 2017). The participants consisted of: (1) expert validators (ELT, educational psychology, and pedagogy specialists), (2) Grade 10 students participating in the intervention, and (3) selected students involved in qualitative follow-up discussions. A total of 80 Grade 10 students participated in the study.

Given that all students had prior exposure to TM as part of the school routine, this study did not aim to examine the *effect of learning TM*, but rather its instructional integration within a deep learning framework. To minimize potential familiarity bias, the intervention focused on structured and consistent placement of TM as a *pre-instructional cognitive preparation phase*, which differs from its routine use in the school schedule. Additionally, data collection emphasized students' experiences specifically related to the integration of TM within English learning activities, rather than their general perceptions of TM. The intervention was conducted over a [insert duration, e.g., 6–8 weeks], during regular English classes. TM was practiced twice daily following the school's standard routine, with additional emphasis on its use at the beginning of selected instructional sessions as part of the designed model. This consistent scheduling ensured that the integration was systematically implemented across learning cycles. To ensure implementation fidelity, the researcher collaborated with classroom teachers using structured lesson plans, observation checklists, and regular monitoring. Teachers were briefed prior to implementation, and periodic observations were conducted to ensure consistency in the application of the model across sessions.

To complement perception data, the study incorporated descriptive indicators of learning engagement, such as participation in discussions, task completion, and depth of responses during literacy activities. While objective standardized measures (e.g., reading test scores) were not the primary focus of this developmental study, this decision aligns with the D&D approach, which prioritizes model design, feasibility, and user experience in early-stage research. Future studies are recommended to extend this model testing using experimental designs and objective learning outcome measures. The questionnaire used to collect students' perceptions was developed based on constructs of cognitive readiness, engagement, and perceived learning support. To ensure content validity, the instrument was reviewed by expert validators in ELT and educational psychology. Construct validity was examined through alignment with established theoretical frameworks, while reliability was assessed using internal consistency measures (e.g., Cronbach's alpha). In addition, triangulation was achieved by integrating questionnaire data with reflective journals and focus group discussions, enhancing the credibility and trustworthiness of the findings.



Table 1. Demographic Characteristics of Student Participants

| Variable | Category | N | % |
|---------------------|----------------------|----|------|
| Gender | Male | 38 | 47.5 |
| | Female | 42 | 52.5 |
| Age | 15–16 years | 55 | 68.8 |
| | 16–17 years | 25 | 31.2 |
| Residence | Boarding (full-time) | 80 | 100 |
| Prior TM Experience | Yes | 80 | 100 |
| | No | 0 | 0 |

The study followed five iterative stages characteristic of a Design and Development approach. In the preliminary analysis stage, a comprehensive literature review was conducted on deep learning in ELT, cognitive theories such as Cognitive Load Theory, and meditation-based educational interventions. This stage highlighted the importance of cognitive readiness, attention regulation, and emotional stability in supporting higher-order learning (Sweller, 2019). In addition, a contextual analysis was undertaken to examine classroom practices and student learning characteristics. Based on this foundation, the model design stage involved the development of an initial Transcendental Meditation (TM)-based deep learning model. The model consisted of five structured phases: (1) cognitive centering through TM, (2) activation of prior knowledge, (3) deep engagement with texts, (4) collaborative knowledge construction, and (5) reflective metacognition. This design aligns with deep learning frameworks that emphasize active knowledge construction and metacognitive reflection. The model was then subjected to expert validation, where specialists in ELT, educational psychology, and pedagogy evaluated its relevance, clarity, feasibility, and theoretical alignment using a structured validation instrument. Feedback from this stage led to refinements in phase sequencing, instructional clarity, and the integration of TM as a cognitive-preparatory mechanism. Subsequently, the revised model was implemented during the pilot classroom implementation stage in Grade 10 English classes. Each session began with a 10-minute TM-based cognitive centering activity, followed by deep learning tasks focusing on reading literacy, argument evaluation, and reflective discussion. Classroom observations were conducted to monitor implementation fidelity and student engagement. Finally, in the reflection and refinement stage, data from multiple sources were analyzed to further improve the model, ensuring alignment between theoretical design and actual classroom practice.

To ensure methodological rigor through triangulation, multiple data collection techniques were employed. An expert validation sheet was used to assess the model’s quality across dimensions such as relevance, clarity, and feasibility. Classroom implementation was documented using observation sheets focusing on instructional flow and student engagement. Students’ perceptions were gathered through a Likert-scale questionnaire measuring concentration, emotional stability, readiness to learn, and perceived usefulness of TM, aligned with constructs of cognitive and affective readiness. In addition, students completed reflection journals to provide insights into their learning experiences and support metacognitive analysis. Finally, focus group discussions (FGDs) were conducted to explore students’ perceptions in greater depth, particularly regarding attention, emotional regulation, and engagement during the learning process.

Data analysis was conducted in alignment with the research questions. For model design, qualitative data from literature review, expert validation, and observations were analysed using thematic analysis (Braun & Clarke, 2006). Themes were generated related to instructional



structure, cognitive preparation, pedagogical alignment, and feasibility. For student perception, quantitative data from questionnaires were analyzed using descriptive statistics (means, percentages, frequencies). Qualitative data from reflections and FGDs were analyzed thematically to identify patterns related to attention, emotional regulation, engagement, and perceived learning benefits. Findings from multiple sources were integrated through triangulation to enhance interpretive validity (Creswell, 2017).

To ensure trustworthiness, the study applied data triangulation, source triangulation, and iterative validation. The involvement of experts and multiple data sources enhanced credibility and dependability (Lincoln & Guba, 1986). Ethical procedures included obtaining institutional approval, securing informed consent from participants, and ensuring confidentiality. Participation was voluntary, and students were informed of their right to withdraw at any stage of the study.

3. Findings

The Design of TM-based Deep Learning Model for English Language Teaching

The findings indicate that the model can be designed as a five-phase instructional sequence that systematically connects cognitive preparation with deep literacy learning. The model emerged from the integration of three main foundations: cognitive-affective readiness, deep learning pedagogy, and higher-order literacy development in ELT. The central finding is that TM should not be positioned as an isolated wellness activity, nor as an optional classroom ritual. Instead, it functions most meaningfully when placed at the front end of the learning cycle as a cognitive-centering mechanism. In this role, TM prepares students to enter the lesson with greater attentional stability, emotional calmness, and mental receptivity. This initial condition is important because deep learning in ELT requires more than surface comprehension. Students are expected to infer meaning, evaluate arguments, synthesize ideas, negotiate interpretations, and reflect critically on language use and textual meaning. The model therefore rests on the assumption that pedagogical depth depends partly on cognitive readiness

The resulting model consists of five connected phases: (1) Cognitive Centering, (2) Activation of Prior Knowledge, (3) Deep Engagement with Texts and Tasks, (4) Collaborative Knowledge Construction, and (5) Reflective Metacognition. These phases form a coherent instructional syntax in which each stage prepares for the next. Cognitive Centering, implemented through TM, reduces internal distraction and establishes learning readiness. Activation of Prior Knowledge connects students' prior experiences and schema to the lesson topic. Deep Engagement then places students in contact with cognitively demanding ELT tasks such as inferential reading, identifying textual evidence, evaluating claims, and summarizing complex information. Collaborative Knowledge Construction allows students to test and refine their understanding through dialogue, while Reflective Metacognition encourages them to examine both what they learned and how they learned it. The developed model follows the syntax below.

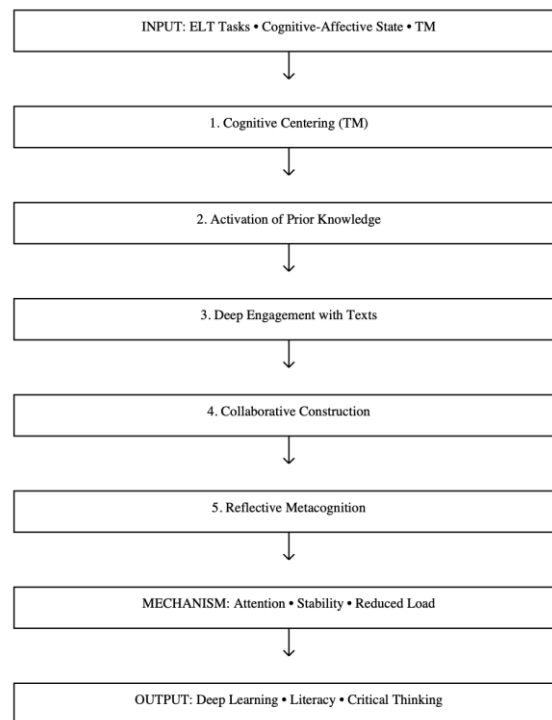


Figure 1. Syntax of the TM-Based Deep Learning Model in ELT

Besides, the finding concerns the pedagogical role of TM within ELT. The model shows that TM is most effective when embedded in the lesson as a preparatory phase for deep literacy work, especially before tasks that require concentration, interpretation, and reasoning. In this design, TM is not treated as content, but as a condition-setting practice. Its instructional value lies in helping students transition from ordinary classroom activity into a more focused state that supports analytical reading and reflective language use.

In relation to the the internal structure of the model, it is seen that the stages are not linear in a mechanical sense. Rather, it is developmental. The first two phases establish mental and conceptual readiness, the third and fourth phases drive meaning-making, and the final phase consolidates learning through reflection. This structure makes the model particularly suitable for deep learning-oriented ELT, where the instructional goal is not merely to answer questions correctly, but to build interpretation, judgment, and meaning across texts and interactions.

Thus, the design findings suggest that a TM-based deep learning model in ELT can be built as a cognitively sequenced pedagogical framework in which meditation supports readiness, deep learning supports meaning-making, and reflection supports transfer. In this sense, the model bridges cognition and pedagogy by treating students' mental state not as background noise, but as an instructional variable. Table 2 shows the detail of the instructional syntax for classroom implementation of this model

Table 2. Instructional Syntax of the TM-Based Deep Learning Model

| Phase | Core Function | Teacher Role | Student Role | Expected Immediate Outcome |
|---|--|---|---|--|
| Cognitive Centering through TM | Establish calm attention and emotional balance before learning | Guide short TM session; create quiet and focused atmosphere | Sit quietly, regulate breathing, engage in TM practice | Increased focus, reduced distraction, learning readiness |
| Activation of Prior Knowledge | Connect prior schema with lesson topic | Elicit background knowledge through prompts, questions, or short tasks | Recall prior knowledge, share initial ideas, connect experience to topic | Conceptual readiness and topic relevance |
| Deep Engagement with Texts and Tasks | Move students into higher-order literacy work | Provide complex texts/tasks; scaffold inference, analysis, and evidence use | Read, interpret, evaluate, summarize, and respond to texts | Deep processing of language and meaning |
| Collaborative Knowledge Construction | Negotiate and refine understanding through interaction | Facilitate discussion, peer sharing, and group inquiry | Discuss, compare interpretations, justify ideas, co-construct meaning | Expanded reasoning and dialogic understanding |
| Reflective Metacognition | Consolidate learning and increase awareness of process | Prompt reflection on both content and learning experience | Reflect on what was learned, how it was learned, and how TM affected learning | Metacognitive awareness and learning transfer |

Furthermore, to ensure the rigor and validity of the proposed TM-Based Deep Learning Model in ELT, the model and its instruments were evaluated by three experts representing complementary domains: (1) ELT and pedagogy, (2) educational psychology and cognition, and (3) quantitative research and assessment. The validation focused on four core dimensions: content relevance, construct alignment, technical clarity, and practical applicability.

Table 3. Summary of Expert Validation Scores

| No | Validation Dimension | Expert 1 (ELT) | Expert 2 (Psychology) | Expert 3 (Assessment) | Mean Score | Category |
|----|-------------------------|----------------|-----------------------|-----------------------|------------|-----------|
| 1 | Content Relevance | 4.00 | 3.75 | 3.75 | 3.83 | Excellent |
| 2 | Construct Validity | 3.75 | 4.00 | 3.75 | 3.83 | Excellent |
| 3 | Technical Clarity | 3.50 | 3.75 | 3.50 | 3.58 | Very Good |
| 4 | Practical Applicability | 3.75 | 3.75 | 4.00 | 3.83 | Excellent |



| | | | | | | |
|---|-------------------|------|------|------|-------------|-----------|
| | Instrument | | | | | |
| 5 | Alignment with RQ | 3.75 | 3.75 | 4.00 | 3.83 | Excellent |

Overall Mean Score: 3.78 (Excellent Validity Level)

The expert validation results indicate that the proposed TM-based deep learning model demonstrates strong overall quality across multiple dimensions, with consistent agreement among the three experts regarding its relevance, theoretical grounding, clarity, and practical applicability. In terms of content relevance, all experts confirmed that the model effectively reflects core principles of deep learning in English Language Teaching (ELT), particularly its alignment with higher-order literacy competencies as emphasized in PISA frameworks and its integration of cognitive-preparatory mechanisms through Transcendental Meditation (TM). The experts highlighted a key strength in the clear conceptual linkage between TM, attention regulation, and deep literacy engagement, indicating that the model successfully connects cognitive processes with instructional goals. However, they suggested that the model could be further strengthened by providing more explicit examples of how numeracy elements can be integrated within ELT contexts, especially in tasks involving data interpretation and reasoning.

Regarding construct validity, the experts agreed that the model is strongly grounded in established theoretical frameworks, including deep learning theory (Fullan et al., 2018), cognitive load theory (Sweller, 1988), and concepts of self-regulation and attention control. They emphasized that the model presents a logical and coherent pathway, where TM functions as a mechanism to enhance cognitive readiness, which subsequently supports improved learning performance. This alignment between theory and design was considered a major strength of the model. Nevertheless, the experts recommended that the mediating variables particularly attention and emotional stability be more explicitly defined and visually represented within the model diagram to enhance conceptual clarity and analytical precision.

In terms of technical clarity, although the model received generally high evaluations, this dimension showed relatively lower scores compared to others. Experts noted that some instructional steps require clearer wording to ensure ease of implementation by teachers. Specifically, they suggested the use of more operational and measurable verbs, such as “analyze,” “synthesize,” and “evaluate,” to better reflect higher-order learning processes. Additionally, they recommended standardizing terminology across all instruments and instructional components, as well as developing more detailed and consistent scoring rubrics, particularly for summarizing and data reasoning tasks, to ensure reliability and clarity in assessment.

Finally, in relation to practical applicability, the experts strongly agreed that the model is highly feasible and suitable for real classroom implementation. They emphasized its compatibility with structured educational environments such as SMA Bali Mandara, where routines and holistic learning approaches are already well established. The integration of a short TM session of approximately 15 minutes was considered practical and realistic within existing lesson structures, and the model was viewed as effectively combining cognitive preparation with instructional processes. However, the experts suggested that successful implementation would require the inclusion of a structured teacher training protocol for TM facilitation, as well as flexible time allocation strategies to accommodate different classroom contexts. Overall, the validation results



indicate that the model is both theoretically sound and practically viable, with minor refinements needed to enhance clarity and scalability.

Students Perception on the Integration of Transcendental Meditation in English Language Teaching

The findings addressing RQ2 reveal a consistently positive and meaningful perception among students regarding the integration of Transcendental Meditation (TM) within English Language Teaching (ELT). When the quantitative and qualitative data are interpreted together, a clear pattern emerges, students do not experience TM merely as a relaxation activity, but as an essential cognitive and emotional preparation that shapes how they engage with complex literacy and numeracy tasks. The student perception questionnaire shows a high overall mean score ($M = 4.21$), indicating that students generally agree that TM enhances their concentration, emotional stability, and readiness to learn. Among these dimensions, learning readiness received the highest evaluation ($M = 4.28$), followed by concentration ($M = 4.21$) and emotional stability ($M = 4.15$), suggesting that students feel particularly prepared and mentally organized after practicing TM before engaging in learning activities. The questionnaire measured three main constructs: concentration, emotional stability, and learning readiness.

Table 4. Results of Students Questionnaire

| Dimension | Mean Score (1–5) | Category |
|---------------------|-------------------------|---------------------------------|
| Concentration | 4.21 | High |
| Emotional Stability | 4.15 | High |
| Learning Readiness | 4.28 | Very High |
| Overall Mean | 4.21 | High Positive Perception |

These quantitative trends are strongly supported and enriched by students' reflective journals, which provide more nuanced insights into their lived experiences. Many students describe a noticeable shift in their mental state after practicing TM, particularly in terms of sustained attention. One student wrote,

“Usually, when I start reading, my mind jumps everywhere, but after meditation, I can stay with the text longer and follow the ideas step by step.” (Student 14)

Another student reflected,

“I feel like my thoughts become slower and clearer, so I don't rush when answering questions.” (Student 42)

These reflections indicate that TM helps students regulate internal distractions and maintain focus, which is crucial for deep literacy processes such as inference-making and critical evaluation. In addition to cognitive focus, emotional regulation emerges as a dominant theme. Several students reported reduced anxiety and increased calmness when dealing with difficult texts or unfamiliar problems. As one student expressed,



“Before, I felt nervous when the text was long or difficult, but after meditation, I feel calmer and more confident to try.” (Student 5)

Another student noted,

“Even when I don’t understand everything, I don’t panic anymore. I try to think more carefully.” (Student 63)

Such responses highlight how TM contributes to a more stable emotional state, allowing students to approach challenging tasks without cognitive overload.

The perceived impact of TM extends beyond focus and emotional control into deeper cognitive engagement. Students frequently reported that they were able to understand texts more holistically and connect ideas more effectively. For example, one student stated,

“I can see the main idea more clearly and connect it with the supporting details,” (Student 53)

while another explained,

“It becomes easier to summarize because I understand the structure of the text better.”

These reflections suggest that TM supports higher-order thinking processes, enabling students to move beyond surface comprehension toward analytical and integrative understanding. This pattern is further reinforced by comments related to metacognitive awareness. Several students indicated that they became more conscious of their own learning processes, as reflected in statements such as,

“I realize when I lose focus and try to bring my attention back,” (Student 33)

“I think more about how I understand the text, not just the answer.” (Student 1)

This indicates that TM may indirectly foster self-regulated learning behaviors, which are central to deep learning frameworks.

Insights from the focus group discussions (FGD) further confirm and deepen these findings. In group conversations, students consistently described TM as a “preparation of the mind” that helps them enter a more productive learning state. One participant explained,

“Meditation feels like resetting my brain before learning, so I am more ready to receive information.” (Student 27)

Another added,

“It’s like warming up before exercise, but for thinking.” (Student 10)

Students also emphasized that TM made them more willing to participate actively in classroom activities. As one student shared,

“I feel more confident to speak in discussions because my mind is clearer,” (Student 40)



while another noted,

“I am not afraid to share my opinion anymore because I can organize my thoughts better.”
(Student 18)

This increased engagement was particularly evident in collaborative tasks, where students reported more meaningful discussions and stronger argumentation. Additionally, students highlighted the role of TM in reducing cognitive overload when dealing with complex information. One participant stated,

“When the text has many ideas, I don’t feel overwhelmed. I can break it down step by step,”
(Student 3)

and another remarked,

“Graphs and data are easier to understand because I can focus on one part at a time.”
(Student 7)

These findings demonstrate a strong convergence across quantitative and qualitative data. Students perceive TM as enhancing their concentration, stabilizing their emotions, and preparing them cognitively for learning. More importantly, TM appears to facilitate deeper engagement with learning tasks by enabling students to sustain attention, regulate emotional responses, and process information more effectively. The consistency of these perceptions across different data sources suggests that TM functions as a meaningful pedagogical support within ELT, particularly in promoting the conditions necessary for deep learning. Rather than being an isolated activity, TM is experienced by students as an integral part of the learning process, one that enables them to approach complex literacy and numeracy tasks with greater clarity, confidence, and cognitive readiness.

4. Discussions

The findings of this study provide compelling evidence that the integration of Transcendental Meditation (TM) within English Language Teaching (ELT) extends beyond general wellbeing and plays a substantive role in shaping students’ cognitive engagement in deep learning processes. Consistent with the quantitative and qualitative results, TM appears to function as a cognitive-preparatory mechanism that enhances attention, emotional stability, and readiness to learn. These findings reinforce and extend existing theoretical perspectives in cognitive science and language pedagogy, while also addressing critical gaps in the literature.

From a cognitive perspective, the findings align strongly with Cognitive Load Theory (CLT), which posits that effective learning depends on managing the limited capacity of working memory (Sweller, 2019). Students’ reports of reduced distraction, clearer thinking, and the ability to process complex texts more effectively suggest that TM helps reduce extraneous cognitive load, thereby allowing greater allocation of cognitive resources to germane load, which is essential for schema construction and deep understanding. For instance, students’ reflections such as “I don’t feel overwhelmed” and “I can break the text step by step” indicate a shift from cognitive overload to structured processing, supporting CLT’s assertion that learning improves when mental resources



are optimized. However, while CLT traditionally focuses on instructional design as the primary mechanism for load management, the present findings suggest a critical extension: cognitive load can also be regulated internally through mental state preparation, not only externally through task design. This represents an important conceptual advancement, positioning TM as a complementary strategy to instructional scaffolding.

The findings also resonate with Cognitive Learning Theory, which emphasizes the role of attention, perception, and memory in learning (Muna et al., 2020). Students' experiences of sustained focus and clearer comprehension indicate that TM enhances fundamental cognitive processes that underpin language acquisition. In particular, the observed improvement in students' ability to infer meaning, connect ideas, and summarize texts reflects enhanced information processing and mental organization, which are central to cognitive learning frameworks. Nevertheless, unlike traditional cognitive approaches that rely on pedagogical techniques such as scaffolding, repetition, or multimedia support (Mari et al., 2024), this study demonstrates that internal cognitive readiness can be intentionally cultivated prior to instruction, thereby strengthening the effectiveness of subsequent pedagogical interventions.

Furthermore, the findings contribute to the growing body of research on mindfulness and meditation in education, which has consistently reported improvements in attention, emotional regulation, and academic performance (Gönen, 2024; Rodrigo & Baminiwatta, 2024; Zhao, 2024). The present study confirms these benefits within an ELT context, particularly in relation to reduced anxiety and increased confidence. However, a key distinction emerges. Previous studies have largely treated meditation as a wellbeing-oriented intervention, focusing on outcomes such as stress reduction or general academic improvement (Delavari et al., 2023; Priya, 2024). In contrast, this study positions TM as a pedagogically embedded component that directly supports domain-specific learning processes, such as reading comprehension, argument evaluation, and summarization. This shift from "meditation for wellbeing" to "meditation for cognitive engagement in learning" represents a significant conceptual contribution.

Another important insight relates to deep learning theory in ELT, which emphasizes meaningful engagement, critical thinking, and knowledge construction. While existing deep learning models assume that learners are ready to engage cognitively, the present findings challenge this assumption. Students' reflections indicate that without cognitive preparation, engagement with complex texts may be hindered by distraction, anxiety, or cognitive overload. By integrating TM as the initial phase of the learning cycle, the model addresses this gap, ensuring that students enter the learning process in an optimal cognitive state. This finding highlights a previously underexplored dimension of deep learning: the necessity of pre-learning cognitive alignment. In this sense, the study extends deep learning theory by incorporating cognitive readiness as a prerequisite for deep engagement, rather than treating it as an implicit condition.

The findings also intersect with research on teacher cognition and classroom interaction, particularly in relation to cognitive biases and student engagement (Harashchuk, 2025; Ye, 2024). By promoting calmness and attentional control, TM may indirectly contribute to more balanced and reflective classroom interactions, reducing reactive responses and enabling more thoughtful participation. Students' increased willingness to contribute to discussions and articulate their ideas suggests that TM fosters not only individual cognitive regulation but also collective learning dynamics, where interaction becomes more meaningful and less constrained by anxiety or hesitation.



Despite these contributions, the findings also invite critical reflection. While TM appears to enhance cognitive readiness, its effectiveness may be influenced by contextual factors such as prior familiarity, school culture, and implementation consistency. In the present study, all participants were already accustomed to TM, which may have facilitated its integration. In contexts where TM is unfamiliar, additional training and adaptation may be required. Moreover, while students reported positive perceptions, further research is needed to establish causal relationships between TM and measurable improvements in specific learning outcomes, particularly through experimental or longitudinal designs.

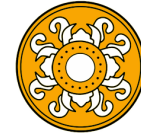
Notwithstanding these limitations, the study offers several important contributions to ELT research and practice. First, it introduces a novel integrative framework that bridges cognitive science, contemplative practice, and language pedagogy. Second, it reconceptualizes TM as a cognitive-preparatory tool rather than a peripheral activity, thereby redefining its role within instructional design. Third, it advances deep learning theory by explicitly incorporating cognitive readiness as a foundational component of effective learning. Finally, it provides empirical evidence that supports the inclusion of affective-cognitive interventions in ELT, particularly in contexts where students are required to engage with complex, higher-order literacy tasks.

The findings suggest that effective ELT pedagogy cannot rely solely on instructional strategies and content delivery. Instead, it must also consider the internal cognitive and emotional conditions that enable learners to engage deeply with language. By integrating TM into the learning process, educators can create a more holistic and effective learning environment, one that prepares students not only to learn, but to think, reflect, and understand at a deeper level.

Despite the promising findings, several limitations should be acknowledged. First, the study was conducted in a single institutional context, namely SMA Bali Mandara, where students were already familiar with Transcendental Meditation (TM). This may limit the generalizability of the findings to contexts where TM is not yet embedded in school culture. Second, the study primarily relied on perception-based and qualitative data, which, although rich and insightful, do not fully establish causal relationships between TM and measurable improvements in specific learning outcomes. Third, the duration of implementation was relatively short, which may not capture the long-term cognitive and academic impacts of TM integration. Additionally, individual differences in students' responsiveness to meditation practices were not systematically examined, which may influence the variability of outcomes. Based on these limitations, future research is recommended to employ quasi-experimental or longitudinal designs to examine the causal and sustained effects of TM on higher-order literacy skills in ELT. Studies should also explore the implementation of TM in diverse educational settings, including schools without prior exposure to meditation, to assess adaptability and scalability. Furthermore, integrating advanced analytical approaches, such as structural equation modeling (SEM), could help uncover the mediating roles of attention, emotional regulation, and cognitive readiness in learning outcomes. Finally, future research may investigate how TM interacts with other pedagogical innovations, such as AI-based adaptive learning systems, to develop a more comprehensive and technology-integrated deep learning framework in ELT

5. Conclusion

This study set out to design and examine a Transcendental Meditation (TM)-based deep learning model in English Language Teaching (ELT) by addressing two central concerns: how



such a model can be systematically developed and how students perceive its integration within learning processes. The findings demonstrate that the proposed model successfully bridges cognition and pedagogy by positioning TM as a cognitive-preparatory phase within a structured deep learning cycle. The model integrates five key phases, cognitive centering, activation of prior knowledge, deep engagement, collaborative knowledge construction, and reflective metacognition, forming a coherent instructional sequence that supports higher-order literacy development.

The results indicate that TM plays a significant role in enhancing students' attention regulation, emotional stability, and readiness to learn, which in turn facilitates deeper engagement with complex ELT tasks such as inferential reading, summarization, and argument evaluation. Importantly, students perceive TM not as an additional or separate activity, but as an integral part of the learning process that enables them to approach academic tasks with greater clarity, confidence, and cognitive control. These findings extend existing research by demonstrating that contemplative practices can be meaningfully embedded within subject-specific pedagogy, rather than functioning solely as wellbeing interventions.

From a theoretical standpoint, this study contributes to the advancement of deep learning theory in ELT by introducing the concept of cognitive readiness as a foundational condition for deep engagement. While traditional models emphasize instructional design and learner interaction, the present study highlights that students' internal mental states significantly influence the effectiveness of these processes. By integrating insights from Cognitive Load Theory, Cognitive Learning Theory, and mindfulness-based research, the study proposes a more holistic framework in which learning is understood as the interaction between instructional structure and cognitive-affective preparedness. This reconceptualization offers a new direction for ELT research, emphasizing that optimizing learning requires not only better teaching strategies but also deliberate preparation of learners' mental conditions.

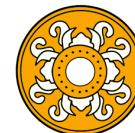
In terms of pedagogical implications, the study offers several important insights for educators and curriculum designers. First, it suggests that effective ELT instruction should incorporate cognitive-preparatory strategies, particularly before engaging students in higher-order tasks. Integrating short TM sessions at the beginning of lessons can help create a focused and emotionally balanced learning environment, thereby enhancing the effectiveness of subsequent instructional activities. Second, the study underscores the importance of designing learning sequences that align with students' cognitive processes, moving from readiness to engagement and reflection. This implies that teachers should not immediately introduce complex tasks, but first ensure that students are cognitively prepared to engage deeply. Besides, the model provides a practical framework for implementing deep learning-oriented ELT, where activities are designed to promote analysis, synthesis, evaluation, and reflection. Teachers can adopt the five-phase structure as a guiding syntax for lesson planning, ensuring that each stage contributes to the development of higher-order thinking skills. Fourth, the findings highlight the need for teacher professional development, particularly in understanding how cognitive and emotional factors influence learning. Training programs should equip teachers with the skills to facilitate TM practices appropriately and to integrate them meaningfully into instructional design. Furthermore, at the policy level, this study suggests that educational systems aiming to promote 21st-century competencies should consider integrating holistic approaches that combine cognitive, emotional, and pedagogical dimensions of learning. The inclusion of contemplative practices such as TM



within formal curricula may support not only academic achievement but also students' overall wellbeing and learning capacity.

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