Connecting Digital Learning, Self-Regulation, and Engagement in MUET Preparation: A Conceptual Study

Sheik Badrul Hisham Jamil Azhar[1], Ahmad Azfar Abdul Hamid[2]*, Atikah Norddin[3], Elly Darliza Bakar[4]

[1,2]Akademi Pengajian Bahasa, Universiti Teknologi MARA (UiTM) Melaka, Malaysia

[3,4]SMK Tun Syed Zahiruddin (TUSZA), Malaysia

***Corresponding Author**

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ABSTRACT

Digital resources provide opportunities for language practice, but their availability does not explain how learners organise and sustain preparation for the Malaysian University English Test (MUET). This conceptual paper develops a framework of supported self-regulated language learning for Malaysian Form Six students. A structured critical synthesis of a predefined corpus of 26 publications distinguishes direct Form Six evidence from research involving other MUET candidates, broader language-learning studies, and general digital education literature. Fourteen publications inform the argument directly. The synthesis identifies an explanatory problem concerning the connections among digital opportunities, pedagogical support, regulatory decisions, and learning engagement. The proposed framework links material access and digital learning capability with task-relevant opportunities, supported by teacher guidance and peer interaction. Planning, monitored practice, and reflective adaptation connect these opportunities with purposeful engagement across successive preparation episodes. Six propositions articulate the relationships and their contextual boundaries. The framework separates strategy frequency from regulatory quality and engagement from achievement, while recognising that feedback must be interpreted and used to inform subsequent practice. It contributes an account of how digitally supported MUET preparation may operate across classroom and independent learning settings. Implications concern task design, feedback practices, inclusive participation, and future investigation. The framework remains a conceptual synthesis whose relationships require empirical examination.

Keywords: MUET, Form Six, digital learning, self-regulated language learning, learner engagement, conceptual framework

INTRODUCTION

Digital language learning encompasses resources and practices that differ considerably in their educational functions. In their review of 398 articles, Shadiev and Yang (2020) identified technologies used across language skills and noted that individual technologies can serve overlapping purposes. A platform may provide learning materials, facilitate communication, and support feedback within the same activity. For MUET preparation, this diversity raises an explanatory question: How do learners turn available resources into purposeful language practice? Identifying the technologies students utilise provides only a partial answer. Understanding preparation also requires attention to how they choose activities, recognise difficulties, use assistance, and decide what to practise next.

Studies involving Malaysian Form Six students supply a foundation for examining these processes. Kuen and Embi (2012) documented variation in reported language learning strategies across listening, reading, speaking, and writing. Yabis and Jamaluddin (2023) subsequently examined motivation and strategy use among Form Six

students preparing for MUET in Kota Kinabalu. Their findings indicate that motivation and strategies warrant consideration together, while their correlational design does not establish how students coordinate strategies during particular learning activities. These studies identify relevant learner practices without explaining their enactment across digital preparation settings.

Digital MUET studies add evidence regarding instructional opportunities. Yin and Hanif (2024) developed the Education, Learning, Teaching, and Communication (ELTC) framework to inform a chatbot for MUET learning. Their related intervention study reported reading improvements and favourable student perspectives on MUETBot, although its participants were university students. In a direct Form Six setting, Ghazali and Habil (2020) examined print and electronic dictionaries within an extensive reading programme. They reported changes in reading habits and attitudes but concluded that the available evidence was insufficient to ascertain the relationship between dictionary use and reading comprehension. Together, these studies make both learning opportunities and evidential distinctions central to the present inquiry.

The conceptual problem is therefore one of integration. Within the reviewed collection, strategy surveys, selected interventions, and technology design frameworks illuminate different aspects of preparation. They do not jointly explain how a Form Six learner moves from encountering a digital resource to undertaking, evaluating, and sustaining language practice. A framework that merely links technology use with achievement would leave these intervening activities unspecified. An account centred exclusively on individual responsibility would also overlook the instructional guidance and social interaction discussed in the MUET curriculum (Naaim & Hashim, 2019; Yin & Hanif, 2024).

This paper intends to develop a framework of supported self-regulated language learning to address that explanatory problem. Its central claim is that digital preparation becomes educationally purposeful when learners coordinate resources and strategies in relation to language goals, with support that helps them interpret practice and plan subsequent action. The proposed contribution is a process account connecting opportunities, support, regulatory decisions, and engagement. It is not a claim that these relationships have already been demonstrated among Malaysian Form Six students, or that the framework is the first to connect technology with MUET learning.

This paper focuses on these three questions as the focus. First, how should digital learning opportunities, self-regulatory processes, and purposeful engagement be distinguished in MUET preparation? Second, how will teacher guidance and peer interaction support learners in making productive use of digital resources? Third, what propositions and contextual boundaries can guide subsequent qualitative investigation? Addressing these questions provides a basis for discussing preparation across language skills while retaining the limits of the evidence from which the framework is developed.

Context and Scope

The target population of the study is Malaysian Form Six students preparing for MUET. The reviewed Form Six studies situate this preparation within a pre-university learning context and address the four language components of listening, speaking, reading, and writing (Kuen & Embi, 2012; Yabis & Jamaluddin, 2023). The present analysis concerns the organisation of learning within that context. It does not evaluate admission requirements, current national achievement distributions, or changes to official assessment specifications. This boundary is necessary because the collection includes publications from different assessment periods and educational settings.

MUET candidates do not constitute a single interchangeable population. The university students in the MUETBot intervention had a different institutional setting from the Form Six students in the dictionary study (Ghazali & Habil, 2020; Yin & Hanif, 2024). Similarly, Karnine et al. (2022) interviewed three polytechnic degree-level students resitting MUET. Their accounts of preparation difficulties and independent study illuminate possible experiences but cannot represent Form Six students as a group. The framework treats these studies as adjacent evidence that may inform conceptual reasoning, with transfer requiring justification.

Digital learning is defined here as the educational use of digital resources and communication tools for language input, practice, interaction, feedback, or reflection during MUET preparation. This working definition encompasses classroom activities and preparation undertaken outside lessons. It excludes device ownership and general online activity when no language learning purpose can be identified. The distinction is consistent with the range of educational uses discussed in reviews of mobile-assisted and technology-enhanced language learning (Che Mustaffa & Sailin, 2022; Shadiev & Yang, 2020).

The unit of analysis is a preparation episode, a bounded activity in which a learner pursues a language-related goal using one or more resources. Episodes may involve other people and may extend across settings. A student might discuss a task in class, practise independently using an online resource, and subsequently seek clarification from a teacher. Treating these activities as connected episodes allows the framework to consider continuity without assuming that learning occurs entirely within one platform.

Preparation is also distinguished from achievement. Engagement in revision, discussion, or reading may be educationally relevant without demonstrating a change in proficiency or test performance. The framework therefore adopts purposeful engagement as its immediate explanatory focus. Achievement remains a possible subsequent outcome requiring appropriate measurement and empirical design. This distinction preserves the inconclusive achievement evidence in Ghazali and Habil (2020) rather than interpreting changes in attitudes or habits as proof of improved reading comprehension.

LITERATURE REVIEW

Digital Access and Usable Learning Opportunities

Access is a necessary consideration in accounts of digital participation, but the reviewed literature presents it as more than the presence of a device. Mazlan et al. (2022), in a qualitative study of 10 English teachers in Islamic tertiary institutions in Malaysia and Indonesia, identified challenges involving technological skills, internet access, devices, and learning interaction during pandemic teaching. These findings cannot establish contemporary conditions among Form Six students. They nevertheless identify circumstances that a digital preparation framework should allow researchers to examine rather than assume away.

Reviews also show why a resource should be considered in relation to its educational function. Che Mustaffa and Sailin (2022) reviewed 11 Malaysian mobile-assisted language-learning studies published between January 2019 and January 2021 and identified variation in objectives, settings, devices, and theoretical approaches. Shadiev and Yang (2020) documented overlapping technological functions across a much larger international collection. These accounts support distinguishing a tool's availability from the opportunity it creates for a particular learner to complete a language task. An audio recording, for example, can enable repeated listening, but the educational significance of replay depends on what the student is trying to understand.

Chua et al. (2024) identified communication, content sharing, collaboration, and skill focused activities in a review of the Web 2.0 integration. Their included studies were drawn from several countries and predominantly university settings, despite the review's intended relevance to Malaysian ESL classrooms. The review also discusses concerns involving connectivity, content credibility, and engagement. Its contribution to the present framework is therefore a set of possible task functions and constraints, not direct evidence that any one platform reliably improves MUET preparation.

Digital learning capability must consequently be distinguished from material access. The former concerns selecting, navigating, and evaluating resources for a learning purpose, the latter concerns whether resources can practically be used. Rijeng et al. (2025) examined perceived links between digital literacy and intercultural communicative competence among 11 university students. Although their outcome and population differ from those considered here, the study illustrates how educational uses of digital resources can involve interpretation and interaction beyond basic operation. The proposed framework retains these broader capabilities without equating perceived intercultural benefits with MUET proficiency.

Motivation and the Organisation of Practice

Kuen and Embi (2012) surveyed 300 Lower Six students from five schools in Melaka. They reported moderate overall strategy use, with listening related strategies used more frequently than those associated with the other skills. These findings establish variation in reported preparation practices. They do not show how appropriate strategies were for particular difficulties, how consistently they were implemented, or whether students changed them after unsuccessful attempts. The distinction matters because a frequency inventory and an account of regulatory decision-making answer different questions.

Yabis and Jamaluddin (2023) reported high overall motivation alongside moderate overall strategy use among 306 Form Six students in Kota Kinabalu. Metacognitive and social strategies were relatively prominent. The study also reported associations between motivation and strategy categories, while acknowledging that its design did not establish causality. Its reporting limitations warrant caution, but the descriptive findings still direct attention to how students organise learning. They do not justify portraying this population as uniformly unmotivated or interpreting a moderate strategy score as proof of deficient self-regulation.

For conceptual purposes, these studies leave open the process connecting a desire to improve with particular decisions about practice. A student may value a higher MUET result yet remain uncertain about selecting suitable activities or evaluating feedback. Conversely, modest, expressed enthusiasm may coexist with carefully organised preparation. These are possibilities that the framework is designed to accommodate, not findings inferred from the surveys. Motivation is treated as a contextual resource that can influence preparation, while regulatory processes concern the decisions through which preparation is managed.

Guidance and Social Interaction

The reviewed MUET studies challenge an account of independence that excludes assistance. Naaim and Hashim (2019) examined social strategies through group discussion practice involving 24 Form Six students in Melaka. Their account includes asking questions, responding to others, sharing ideas, and supporting participation. Although the small study does not isolate the effects of individual strategies, it shows why preparation can be investigated as a socially organised activity. Seeking clarification and using peer responses may form part of how a learner manages practice.

The ELTC framework similarly foregrounds pedagogical considerations in chatbot design (Yin & Hanif, 2024). It combines perspectives on learning, technology, language acquisition, and communication to explain how a chatbot might support educational interaction. The present paper builds a different explanatory emphasis: how learners use opportunities and support over successive activities. A resource may be designed to help, but the learner still has to recognise its relevance, interpret it, and decide whether to act. Connecting these processes extends the discussion from design intentions to the proposed organisation of preparation.

Ghazali and Habil (2020) also recommend teaching learners how to use dictionaries effectively. Their recommendation places instructional guidance alongside resource provision. Read together with the social-strategy study, it suggests a role for support that helps students make decisions rather than merely complete assigned activities. The proposition developed here is that guidance can contribute to self-regulation when it makes goals, strategies, and evaluative criteria more intelligible to the learner. This relationship remains an interpretation requiring subsequent examination.

Engagement and Achievement

The dictionary and MUETBot studies provide a useful contrast in both findings and evidential scope. Ghazali and Habil (2020) studied 88 Form Six students during a 12-week reading programme, with 44 students using electronic dictionaries and 44 using print dictionaries. They described some changes in reading habits and attitudes but could not determine which dictionary type produced superior effects or establish the relationship with comprehension from the available data. The study supports caution in moving from positive experience to claims about measured attainment.

Yin and Hanif (2024) compared 40 university students using MUETBot with 40 using conventional practice materials and included interviews with 10 intervention participants. The authors reported reading score improvements and favourable accounts of convenience, feedback, and practice. These accounts suggest questions about the process students found useful. They do not demonstrate that feedback uptake caused the reported gains, that benefits persisted, or that the same outcomes would occur in Form Six settings. The intervention and its related conceptual paper also represent complementary parts of a research programme rather than independent demonstrations of effectiveness.

Task characteristics further complicate interpretation. Bukhari et al. (2023), studying 40 Form Six students, reported differences in speaking performance associated with topic familiarity. Consequently, a favourable digital practice experience may reflect familiarity with content as well as the way a resource is used. A model focused on engagement should therefore preserve task and learner differences. Its purpose is to explain the organisation of participation and learning effort, while leaving proficiency development and assessment outcomes as distinct empirical questions.

METHODOLOGY

Corpus and Selection Logic

The study uses a structured critical synthesis of a predefined collection of 26 publications assembled for this project. The collection contains empirical studies, conceptual discussions, literature reviews, and bibliometric analyses addressing digital education, language learning, or MUET preparation. It was not generated through a documented comprehensive database search. Accordingly, the review does not claim exhaustive coverage, systematic-review status, or an estimate of the prevalence of particular findings in the wider literature. Its purpose is to develop and delimit a conceptual explanation from the available evidence.

All publications were considered for contextual relevance, conceptual contribution, and the relationship between their methods and claims. Fourteen were retained as direct sources for the manuscript. The selection prioritised research involving Form Six or MUET, followed by language-learning studies that clarified digital opportunities, instructional support, or learner experiences. Broad digital education discussions and research in other disciplines were not used as primary support for the framework. Retention did not imply that every source had equal evidential strength: a contextually relevant study could inform a construct while remaining insufficient to establish an instrumental relationship.

Five retained publications provided direct empirical evidence involving Form Six students (Bukhari et al., 2023; Ghazali & Habil, 2020; Kuen & Embi, 2012; Naaim & Hashim, 2019; Yabis & Jamaluddin, 2023). Three addressed other MUET populations or conceptual development (Karnine et al., 2022; Yin & Hanif, 2024). The remaining six supplied broader language-learning perspectives on digital practices, teacher challenges, writing, or intercultural interaction (Aziz et al., 2019; Che Mustaffa & Sailin, 2022; Chua et al., 2024; Mazlan et al., 2022; Rijeng et al., 2025; Shadiev & Yang, 2020). These distinctions governed how evidence was used.

Appraisal and Synthesis

The synthesis compared studied populations, educational settings, designs, relevant findings, theoretical discussions, and limitations. Particular attention was given to whether a claim concerned reported preferences, perceived benefits, observable practices, test results, or a proposed instructional arrangement. Bibliometric visibility was not treated as evidence of effectiveness. Similarly, findings discussed within reviews were not counted as independent replications of studies already represented in the collection.

Methodological appraisal was interpretive rather than based on a numerical quality score. Relevant concerns included reliance on self-report, single setting samples, restricted skill coverage, the absence of a comparison condition, and unclear transfer between educational levels. Reporting inconsistencies were also considered. For example, the interpretation of normality tests in Yabis and Jamaluddin (2023) does not match the significance values in the corresponding tables. The abstract of Yin and Hanif (2024) also contains an apparent error in its

reported test statistic. The present argument therefore avoids reproducing those statistical formulations or making its conceptual claims depend on them.

The analysis proceeded from source-specific observations to comparisons across four issues: usable learning opportunities, the relation between motivation and practice, the place of instructional and social support, and the distinction between engagement and achievement. These comparisons informed definitions and proposed relationships. Where a relationship extended beyond what the studies had directly examined, it was formulated as a conceptual proposition. No primary participant data were collected, and no pooled effects, independent coding agreement, or statistical validation of the framework are reported.

Theoretical material was confined to the retained publications. When an original theorist was discussed through a reviewed paper, secondary citation was used. The resulting framework is a context focused synthesis of metacognitive regulation and supported language learning, rather than a reproduction of an independently consulted foundational model. This approach makes the basis of the theorising explicit while acknowledging the constraints of the source collection.

Metacognitive Regulation in Language Learning

The framework uses self-regulated language learning as an organising concept for how learners manage preparation. Its immediate theoretical basis is the metacognitive and social strategy discussion within the reviewed language learning literature. Oxford's strategy taxonomy distinguishes cognitive, metacognitive, memory, compensatory, affective, and social strategies (Oxford, 1990, as cited in Yabis & Jamaluddin, 2023). For the present purpose, the significance of this differentiation is that practising language, managing practice, responding to emotion, and seeking assistance need not be treated as the same activity.

Naaim and Hashim (2019) describe metacognitive strategies in terms of planning tasks, organising resources and study conditions, and evaluating learning. Yabis and Jamaluddin (2023) likewise connect metacognitive strategies with awareness, planning, and regulation. Building on these accounts, the proposed framework defines self-regulation as the coordination of goals, strategies, monitoring, help-seeking, and evaluation in response to an identified language-learning purpose. This definition shifts the analytical emphasis from how often a technique is reported to how a learner selects and adjusts it within an episode.

Three recurring activities organise this synthesis: planning, monitored practice, and reflective adaptation. Planning identifies a purpose and selects a feasible task. Monitored practice involves attending to progress and difficulties while using strategies and resources. Reflective adaptation concerns interpreting what happened and deciding what should change. These activities constitute the paper's proposed process organisation; they are not presented as a directly reproduced model from a foundational work outside the reviewed collection. Their recursive relationship is a conceptual inference: information gained during practice can become relevant to the next planning decision.

Support Within Self-Regulation

Self-regulation is treated here as compatible with assistance. The social constructivist account discussed in the ELTC paper locates learning within guidance and interaction, including support for tasks that learners cannot yet manage independently (Vygotsky, 1978, as cited in Yin & Hanif, 2024). That perspective clarifies why teachers and peers may have a continuing role even when digital preparation occurs outside lessons. The learner's responsibility lies in increasingly making sense of and coordinating activity, rather than necessarily completing every task without help.

The integration is limited and explicit. Metacognitive regulation explains the proposed management of preparation, the social perspective explains why access to guidance and interaction belongs within that account. The framework does not attempt to merge all theories represented in ELTC or assert that their assumptions are interchangeable. It draws a specific relationship between regulatory decisions and support, consistent with the

social strategies described by Naaim and Hashim (2019). Whether support promotes greater learner decision-making or continued dependence is an empirical question for later research.

Distinguishing Regulation from Engagement

Purposeful engagement is defined as participation directed towards an identified language learning purpose, reflected in effort, willingness to continue, and substantive work on the task. This is a working definition for the framework, informed by accounts of reading habits, digital writing opportunities, and learner experiences of MUETBot (Aziz et al., 2019; Ghazali & Habil, 2020; Yin & Hanif, 2024). It is not offered as a newly validated engagement scale.

The boundary between regulation and engagement is analytical rather than absolute. Deciding to revisit an unclear passage illustrates regulation, working through that passage and comparing interpretations illustrates engagement. One event may involve both processes, so future analysis should not force exclusive coding. Distinguishing their functions nevertheless prevents the framework from defining its outcome entirely through the same decisions used to explain it. Participation traces also require interpretation, repeated clicks or lengthy attendance do not by themselves demonstrate meaningful processing.

Proposed Conceptual Framework

Components and Relationships

The framework connects enabling conditions, task relevant opportunities, instructional and social support, self-regulatory activity, and purposeful engagement. Table 1 defines the components and identifies the boundaries necessary for interpreting them. The categories describe different functions within preparation rather than a predetermined set of variables for statistical testing.

Component	Working definition	Analytical boundary
Material access	Practical availability of devices, connectivity or offline resources, and usable time and space.	Access does not establish educational use.
Digital learning capability	Ability to navigate, select, and evaluate resources for a language-learning purpose.	Operational familiarity does not establish critical selection.
Task-relevant opportunities	Usable possibilities for input, practice, interaction, or feedback.	A technical feature is not automatically a learning opportunity.
Teacher and peer support	Guidance and interaction that assist task completion or regulatory decisions.	Receiving assistance does not establish understanding or independence.
Self-regulated language learning	Coordination of planning, monitoring, help-seeking, and reflective adaptation.	Strategy frequency is distinct from appropriateness and coordination.
Purposeful engagement	Participation, effort, willingness to continue, and substantive work directed towards a learning purpose.	Engagement does not by itself demonstrate proficiency gains.

Table 1: Components of the Proposed Framework

Note: Definitions are proposed for this framework. Regulation and engagement may occur within the same event, the distinction concerns their analytical functions.

Figure 1 presents the proposed relationships. Material access and digital learning capability shape which opportunities can be used, while teacher guidance and peer interaction can organise both the opportunities and their interpretation. Self-regulatory activity concerns how learners select and use these possibilities in practice. Engagement produces experiences that can inform reflection and subsequent planning. Arrows represent the paper's proposed explanatory relationships; they do not represent estimated effects or an established mediation model.

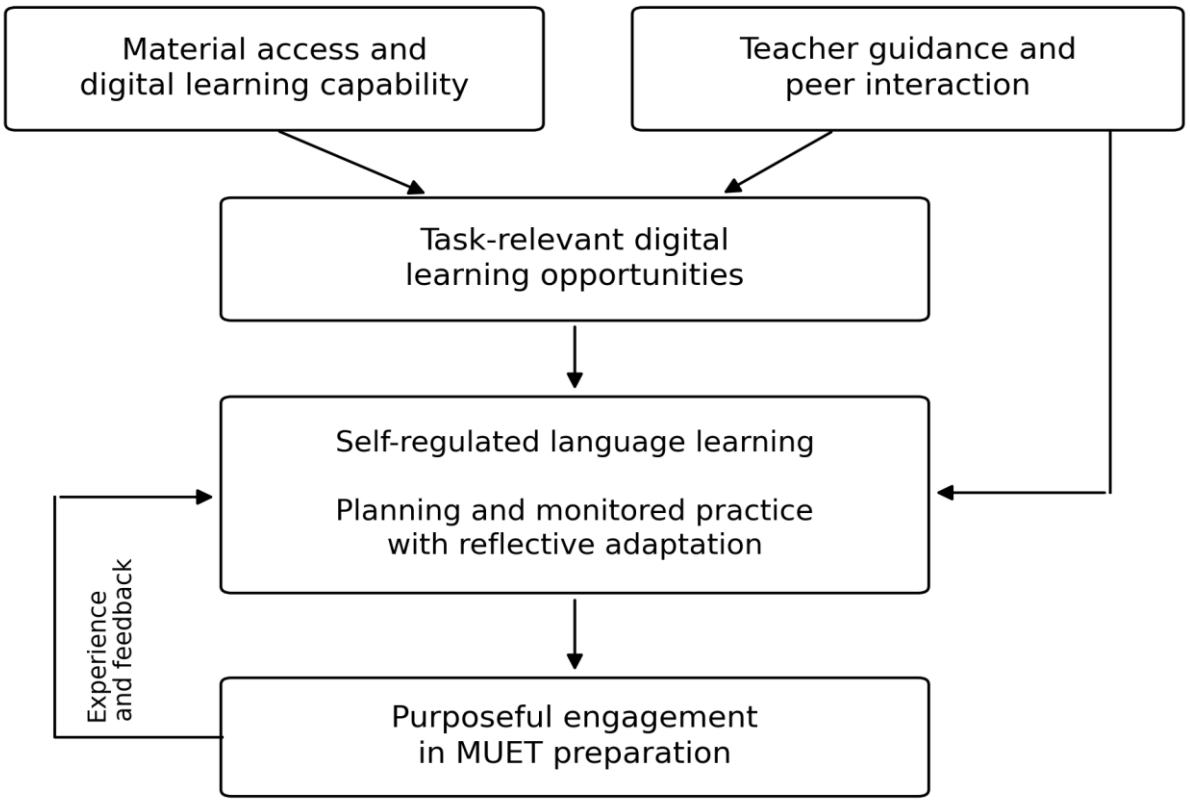

Figure 1: Supported Self-Regulation in Digitally Supported MUET Preparation

Note: Arrows indicate proposed relationships, not estimated effects. The return path represents how experience and feedback may inform subsequent planning and practice. Reflective adaptation is part of self-regulation.

The relationships need not unfold in a fixed order. Learners may begin an assigned task without an explicit personal goal, recognise a difficulty during practice, and then seek support to revise their approach. A teacher may also offer direct explanation that benefits learning through routes beyond the framework's focus. The diagram therefore isolates one process of interest rather than claiming to depict every influence on language development. Its scope is the organisation of digitally supported preparation across episodes.

Contribution and Boundary Conditions

The framework makes three connected contributions. It changes the explanatory unit from a platform considered in isolation to an episode of preparation situated across resources and relationships. It distinguishes the management of practice from participation in practice, allowing researchers to examine why apparently similar digital activity may have different meanings. It also identifies feedback interpretation as a connection between one episode and the next. These are proposed conceptual contributions arising from the synthesis, not a claim that the underlying concepts are new.

The account differs from ELTC in its object of explanation. ELTC organises theoretical considerations for a MUET chatbot, the present framework organises learner activity across tools and settings (Yin & Hanif, 2024). It also extends the descriptive focus of strategy inventories by asking when and why a strategy is selected, sustained, or altered. Its added value depends on whether these distinctions make future observations more intelligible, including observations that challenge the proposed relationships.

Several boundaries constrain the account. The framework concerns learning-oriented activity rather than all forms of digital use. It does not assume that students possess equal opportunities, that teachers can continuously supervise independent preparation, or that peer responses are invariably helpful. It also permits alternative explanations. A highly structured task may sustain participation despite limited learner planning; prior

proficiency may enable effective practice with little explicit support. Such cases would delimit the model and prevent supported self-regulation from becoming an explanation applied indiscriminately to every outcome.

DISCUSSION

Designing Preparation Around Learning Decisions

The framework suggests designing activities that make learning decisions visible. Instead of defining a task solely by the resource to be used, a teacher could identify its language purpose, invite students to anticipate a difficulty, and provide a brief way to review their response. This recommendation develops the emphasis on appropriate strategy use and instructional support in Kuen and Embi (2012), Ghazali and Habil (2020), and Yin and Hanif (2024). It is a design implication of the synthesis rather than an intervention whose effectiveness has been demonstrated here.

Across the four language skills, the underlying sequence can remain recognisable while its enactment changes. During listening practice, learners could distinguish unfamiliar vocabulary from difficulty recognising connected speech before selecting a replay strategy. In reading, they could compare an initial interpretation with textual evidence and use a dictionary selectively. Speaking practice could involve reviewing a recording against a chosen communicative goal, while writing practice could involve explaining why a revision improves a draft. Table 2 offers illustrations of these decisions without prescribing a platform or suggesting that the same procedure suits every learner.

Skill	Decision during practice	Possible subsequent action
Listening	Identify whether a difficulty concerns vocabulary, speech recognition, or interpretation.	Select a replay, transcript check, or new listening task that addresses the difficulty.
Speaking	Compare an explanation or interaction with a chosen communicative goal.	Retry the response or seek clarification about an unclear point.
Reading	Evaluate an interpretation against textual evidence and selective vocabulary checks.	Revise the interpretation and identify a strategy for another text.
Writing	Consider whether feedback improves meaning for an intended audience.	Revise with reasons and carry a relevant principle into a new draft.

Table 2: Illustrative Decisions Across Language Skills

Note. These are proposed pedagogical illustrations, not interventions evaluated in this paper. Their suitability depends on learners and tasks.

These activities should allow purposes beyond reproducing answers to familiar test items. Bukhari et al. (2023) show why topic familiarity needs attention in speaking preparation, while Aziz et al. (2019) discuss social media possibilities for ESL writing alongside implementation concerns. A teacher could therefore vary topics and audiences while asking learners to identify what transfers across tasks. Such variation would make the interpretation of progress more demanding but would also reduce the temptation to equate familiarity with a particular activity and broader language capability.

Supporting Feedback Use and Inclusive Participation

Feedback practices could include a small action following the response: explain a correction, revise a passage, retry a task, or request clarification. The purpose would be to make interpretation observable rather than assume that the feedback had been understood. The positive perspectives on feedback in the MUETBot study support exploring this possibility, although the study did not isolate feedback use as the cause of improvement (Yin & Hanif, 2024). Learners could also be encouraged to distinguish advice they accept from advice they cannot yet evaluate.

Peer support requires similarly explicit purposes. A discussion partner might identify where an explanation is unclear, ask for supporting reasons, or compare approaches to a difficult passage. These practices extend the interaction described by Naaim and Hashim (2019) while leaving room to investigate inaccurate advice or unequal participation. Teacher involvement remains relevant where peers cannot resolve a difficulty. The framework consequently recommends examining the quality and use of support rather than treating any interaction as sufficient evidence of collaboration.

Inclusive participation should be considered when tasks are designed. Given the access and skills challenges described in the broader language learning literature, it would be inappropriate to interpret non-participation immediately as unwillingness to learn (Chua et al., 2024; Mazlan et al., 2022). Feasible alternatives could include downloadable materials, flexible completion periods, or opportunities to use shared institutional resources. These are proposed responses to possible constraints, their suitability would depend on local circumstances. Progress would be interpreted against the opportunities actually available to a learner.

A Qualitative Agenda for Examining the Framework

A future qualitative study could examine preparation episodes across contrasting Form Six settings. Participant selection could seek variation in reported digital practices, access conditions, and proficiency, with the final sampling strategy determined by the study's scope. The purpose would be to investigate how the proposed relationships operate, fail to operate, or require revision. It would not be to confirm a predetermined set of categories merely because those categories appear in the framework.

Interviews could be combined with short learning diaries and discussion of learners' own artefacts, such as a draft, reading annotation, feedback exchange, or speaking recording. The combination would permit comparison between general accounts and particular episodes. Ghazali and Habil (2020) incorporated reflections and other qualitative material, while Karnine et al. (2022) used interviews to investigate MUET related difficulties. These examples demonstrate relevant forms of inquiry within the reviewed collection without determining the methods of the proposed study.

Questions could follow the sequence of a recent activity: how it was selected, what became difficult, which assistance was used, how progress was interpreted, and what happened next. Following more than one episode would be especially useful for examining the proposed feedback loop. Analysis should also remain open to emotional, institutional, or social concerns not adequately represented in the initial model.

Qualitative findings could refine the concepts and their boundaries but would not by themselves establish a statistical indirect effect or a causal relationship with MUET achievement. If later research addresses proficiency gains, the design would need to distinguish task familiarity, prior ability, instructional exposure, and other plausible explanations. The immediate research contribution would be a better account of how students experience and manage preparation, including the circumstances under which digital resources are unused, misunderstood, or productively incorporated.

Limitations

The framework is constrained by a predefined corpus whose original search provenance was not available. The synthesis therefore supports a bounded conceptual argument rather than a comprehensive claim about the state of MUET research. Its contribution should be assessed through the coherence and usefulness of its proposed distinctions, not through an assertion that no comparable account exists. Relevant studies outside the collection may extend or challenge those distinctions.

The evidence also varies in population, design, and period. Direct Form Six studies include surveys and small, situated interventions, adjacent evidence includes university learners, polytechnic resitters, and teachers working during pandemic conditions. Findings from these settings cannot establish national patterns among contemporary Form Six students. Older research provides conceptual and contextual insights but should not be treated as an authoritative description of present assessment requirements or digital practices.

The theoretical foundation is mediated through the reviewed publications. Secondary citation makes this limitation visible but cannot replace the depth that direct engagement with foundational works would provide. The proposed cycle is consequently presented as the paper's synthesis of regulatory activities, rather than as a complete representation of an established self-regulation theory. Reporting inconsistencies in some relevant studies further limit the weight placed on their statistical claims.

Finally, the framework has not been empirically examined. Regulation and engagement overlap in practice, support can take different forms, and learners may pursue several purposes within one activity. The proposed distinctions must therefore remain open to revision. Achievement effects, long-term persistence, and transfer across tasks cannot be inferred from the diagram or propositions. These limits define the agenda for subsequent research rather than diminishing the need for a clearly specified conceptual account.

CONCLUSION

Digitally supported MUET preparation can be conceptualised as a sequence of learning decisions embedded in material, instructional, and social conditions. The reviewed literature provides evidence about strategy use, motivation, interaction, selected digital interventions, and task variation, but leaves their connections incompletely specified within this collection. The proposed framework links usable digital opportunities with planning, monitored practice, and reflective adaptation, supported by teachers and peers. Purposeful engagement is its immediate focus, while achievement remains a separate question.

The framework's contribution is an account of how learners may convert resources and assistance into continuing preparation across settings. It gives conceptual attention to strategy appropriateness, feedback interpretation, and the circumstances under which participation is possible. Its six propositions support a future qualitative inquiry that can identify where the account explains learners' experiences and where it requires modification. For teaching, the principal implication is to make the purposes, decisions, and review of digital practice visible, while ensuring that expectations remain responsive to learners' opportunities and needs.

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