



Flipped and Think Talk Write Models as English Language Learning Design for Madrasah Aliyah Students

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Abstract

The purpose of this study is to develop an English learning design that integrates Flipped Learning and Think Talk Write (TTW) for Madrasah Aliyah students. The research employed a Research and Development (R&D) approach using the 4D model (Define, Design, Develop, and Disseminate). In the Define stage, needs analysis was conducted through student questionnaires and teacher interviews involving 40 students and 3 English teachers across MAN 3 Madina and MAN 1 Madina. The Design stage produced a draft integrating Flipped Learning and TTW with digital and print-based media adapted for schools with limited smartphone access. In the Develop stage, the draft was validated by two expert validators—a media expert from Universitas Negeri Medan (UNIMED) and an instructional design expert from STBA PIA Medan—yielding an average validation score of 4.5 to 5, categorized as highly valid and feasible. During the Disseminate stage, the finalized design was implemented in classroom settings and evaluated through student questionnaires and teacher interviews regarding its strengths, weaknesses, and areas for improvement, followed by a Focus Group Discussion (FGD) with 35 participants. This study does not measure learning outcomes; instead, it focuses on developing and validating a feasible instructional design. The novelty of this research lies in integrating Flipped Learning and TTW with a hybrid digital-print media approach adapted for Islamic senior high schools with restrictive device policies, offering both theoretical and practical contributions to English language teaching improvement.

Keywords: Flipped Learning, Think-Talk-Write, Instructional Design, 4D Model, Madrasah Aliyah

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Article History	Received	Revised	Accepted	Published
	2025-12-01	2026-06-10	2026-07-15	2026-09-15

INTRODUCTION

مقدمة

English language learning in Madrasah Aliyah still faces various obstacles that impact the effectiveness of learning. According to data collected at Madrasah Aliyah in the city of Panyabungan, several issues were identified, such as limited active student participation, weak writing skills, minimal use of digital tools, and insufficient understanding of independent learning concepts.

One of the main problems in English language learning at Madrasah Aliyah in Mandailing Natal is the low level of active participation by students in class. A needs analysis questionnaire distributed to students revealed that approximately 50% of students tend to be passive in discussions, playing more of a listening role rather than actively asking questions, answering, or giving opinions. This indicates that the teaching methods used by teachers so far have not fully encouraged student involvement in the interactive learning process. Furthermore, students' writing skills remain a serious challenge, with around 40% of students admitting to having

difficulty writing English essays, especially in terms of organizing ideas, vocabulary usage, and grammatical structure. This condition highlights the need for more systematic learning strategies oriented towards developing critical thinking skills and writing skills as part of the productive skills that students must master.

In addition to low participation and writing skills, the use of technology in learning is also still limited. The questionnaire results show that only 55% of teachers actively use digital tools in the teaching process, while the rest still predominantly use traditional methods such as lectures and written exercises. In fact, the use of digital media has great potential to increase student interaction and motivation to learn because it can provide a more varied and contextual learning experience. Furthermore, the data also shows that 50% of students find it easier to understand concepts when they have access to study materials before class, for example through videos or digital modules. This fact indicates that the application of learning models that allow students to learn independently before face-to-face sessions, such as Flipped Learning, is highly relevant to overcoming these challenges. When combined with the Think Talk Write model, which emphasizes the processes of thinking, discussing, and writing, the resulting learning design not only optimizes the use of technology but also enhances active participation and writing skills among students.

Based on interviews with English teachers at MAN 1 Madina, it is known that the use of technology in learning still faces challenges in school policy regarding the use of digital devices by students. One teacher explained:

“At our school, students are not allowed to bring cell phones every day. They can only use cell phones if they have special permission from the teacher, for example to search for materials or access learning applications.”

(Interview, English Teacher, MAN 1 Madina, July 27, 2025).

This policy presents a significant contextual challenge for implementing Flipped Learning, which typically requires students to access digital materials independently before class. However, rather than rendering the model inapplicable, this constraint necessitated a creative adaptation. In the present study, the Flipped Learning component was modified to accommodate a hybrid digital-print approach: students were provided with printed summaries and worksheet companions alongside digital materials that could be accessed during scheduled computer lab sessions at school or through shared devices at home. Teachers also utilized WhatsApp Groups to distribute short video links and reading materials that students could access during permitted hours. This adaptation ensured that the pre-class learning phase of the Flipped model remained viable even within a restrictive device policy environment, addressing the gap between the model's digital requirements and the school's infrastructural reality.

English language learning in Madrasah Aliyah (MA), particularly in MAN 1 and MAN 3 Mandailing Natal, still faces a number of structural and pedagogical challenges. One of the main challenges is the limited motivation of students to learn. Many students still view English as a difficult subject that is irrelevant to their daily lives. This condition is in line with Lubis' (2021) findings, which state that student motivation in secondary schools in rural areas tends to fluctuate and is influenced by the learning environment.

In addition, students' writing and speaking skills are still relatively low. Teachers at MAN 1 Madina revealed that around 40% of students had difficulty organizing their ideas when writing English essays, while students at MAN 3 Madina tended to be passive in speaking due to a lack

of confidence. This is in line with Harahap's (2020) research, which found that madrasah students often experience difficulties in productive skills (speaking and writing) due to a lack of practice and limited teaching strategies based on communicative activities.

The results of interviews with English teachers at MAN 1 Madina reinforce these findings. Teachers stated that the school policy prohibiting students from bringing smartphones to school every day was indeed intended to maintain discipline, but indirectly limited students' flexibility in accessing digital learning resources. As a result, teachers had to be more creative by using projectors or laptops to display digital materials in class. This shows that despite efforts to introduce technology-based learning, the role of teachers is still very dominant, so that students have not yet fully gained the experience of independent learning supported by digital devices. Thus, the integration of innovative learning models that are able to combine technology and foster student engagement, such as Flipped Learning and Think Talk Write, is becoming increasingly relevant to be implemented in the context of madrasahs in Mandailing Natal.

Technology-based learning models, as described above, require innovative strategies that encourage students to be more active, creative, and engaged in the learning process. Of the various models available, Flipped Learning is one approach that is highly relevant to the context of English language learning in Madrasah Aliyah. Flipped Learning is a learning model in which students are given the opportunity to study the material outside of class first, usually through videos, digital modules, or online resources, so that face-to-face time in class can be focused on discussion, practice, and problem solving (Bishop & Verleger, 2013). Thus, this model provides space for students to learn independently at their own pace, while improving the quality of interaction in the classroom.

The integration of Flipped Learning and TTW is believed to be able to provide a more holistic English language learning experience. Flipped Learning provides access to preliminary materials that enable students to be better prepared before class, while TTW provides space for students to process, discuss, and write down their ideas systematically. With this combination, students are not only assisted in understanding concepts independently, but are also trained to develop their oral and written communication skills continuously. Nurdin (2020) states that the combination of technology-based and cooperative learning strategies such as TTW is effective in improving students' productive skills, especially writing. Therefore, the selection of Flipped Learning and TTW is a strategic step in designing English language learning at Madrasah Aliyah in Mandailing Natal.

Based on the above description, it can be confirmed that both Flipped Learning and Think Talk Write have complementary advantages in addressing the challenges of English language learning in Madrasah Aliyah, especially in Mandailing Natal. Flipped Learning provides space for students to learn independently through the use of technology before class, while TTW emphasizes the systematic strengthening of thinking, speaking, and writing skills through collaborative activities in class. The combination of the two is believed to be able to increase motivation, active participation, and productive skills of students, which have been the main obstacles so far. Therefore, the urgency of integrating these two models is very important to be implemented, especially in order to support 21st century learning that demands independent learning, collaboration, creativity, and cross-context communication skills.

METHOD

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Research Type and Approach

This study uses a Research and Development (R&D) approach with the 4D development model originally proposed by Thiagarajan, Semmel, and Semmel (1974). The 4D model consists of four sequential stages: Define, Design, Develop, and Disseminate. According to Borg and Gall (2003), research and development aims to produce specific products and test their feasibility through systematic stages. In this context, the product is an English learning design based on the integration of the Flipped Learning and Think Talk Write (TTW) models, adapted for the needs of Madrasah Aliyah students in Mandailing Natal. It is important to note that this study focuses on developing and validating the instructional design product rather than measuring student learning outcomes. The research does not employ a pre-test/post-test experimental design; instead, the evaluation at the Disseminate stage relies on qualitative feedback gathered through student questionnaires and teacher interviews regarding the strengths, weaknesses, and practical suggestions for the implemented design.

The research approach used is a descriptive qualitative approach combined with descriptive quantitative analysis for expert validation data. According to Creswell (2014), a qualitative approach is research that systematically, factually, and accurately describes certain events and phenomena. This mixed approach allows the study to capture both numerical validation scores and rich qualitative insights from stakeholders.

Participants

The subjects of this study were students of Madrasah Aliyah Negeri (MAN) 3 Mandailing Natal and Madrasah Aliyah Negeri 1 Mandailing Natal (MAN 1 Madina) who took English lessons in the odd semester of the 2025/2026 academic year. The subjects were selected purposively, considering the diverse characteristics of the students in terms of language ability and involvement in learning. In addition to the students, English teachers at both madrasahs were also included as research subjects because of their important role in the design, implementation, and evaluation of the integrated learning model.

A total of 40 students from two classes at each madrasah were selected as research subjects, resulting in a total of four classes. This was chosen so that the data obtained would be more representative of the actual conditions in the field. There were three English teachers involved, one from MAN 3 Mandailing Natal and two from MAN 1 Madina. Additionally, two expert validators were involved: one media expert from Universitas Negeri Medan (UNIMED) and one instructional design expert from STBA PIA Medan.

Development Procedures (4D Model)

The development of the Flipped Learning and TTW instructional design followed the four stages of the 4D model as follows:

1. Define Stage. The Define stage aimed to establish the requirements for the instructional design by analyzing the learning context and identifying problems. This stage involved three key analyses according to the 4D framework: (a) front-end analysis, conducted through student needs questionnaires and semi-structured teacher interviews to identify gaps between the current state and the desired state of English language instruction; (b) learner analysis, to understand student characteristics including their language proficiency levels, digital literacy, learning preferences, and attitudes toward English; (c) task analysis, involving examination of the curriculum documents, syllabi, and existing lesson plans (RPP) to map out the competencies and learning objectives; and (d) concept analysis, to identify the key concepts in English language learning that would be integrated into the Flipped Learning and TTW

framework. Additionally, classroom observations were conducted to determine the actual conditions of English learning, including student participation, media utilization, and teaching styles.

2. Design Stage. Based on the findings from the Define stage, the Design stage focused on constructing the initial draft (prototype) of the integrated Flipped Learning and TTW instructional design. This involved: (a) constructing criterion-referenced assessments aligned with the learning objectives identified in the Define stage; (b) selecting appropriate media and delivery formats, including digital media (video lessons, Google Classroom, YouTube, WhatsApp Groups) and print-based alternatives (printed summaries, worksheet companions) to accommodate the school's device restriction policy; (c) designing the instructional format by structuring the learning activities into pre-class (Flipped component) and in-class (TTW component) phases; and (d) producing the initial design draft comprising learning scenarios, lesson plans (RPP), digital and print media, and evaluation rubrics. The design was grounded in constructivist learning theory and Technology-Enhanced Language Learning (TELL) principles.

3. Develop Stage. The Develop stage aimed to refine and validate the initial draft through expert appraisal and developmental testing. The draft learning design was submitted to two expert validators for evaluation: (a) Validator 1: a media expert from Universitas Negeri Medan (UNIMED), who assessed the quality of instructional media, digital interface design, ease of use, and visual presentation; and (b) Validator 2: an instructional design expert from STBA PIA Medan, who evaluated the pedagogical coherence, alignment between learning objectives and activities, material relevance, and integration of the Flipped Learning and TTW models. Validation covered four major aspects: design quality, ease of use, material quality, and model integration. Each aspect was rated on a 1–5 Likert scale. The validators also provided qualitative suggestions for revision. Based on the validation feedback, the draft was revised to improve clarity of activity instructions, adapt media for schools with limited internet access, and enhance the print-based pre-class materials.

4. Disseminate Stage. The Disseminate stage involved two main activities: (a) classroom implementation (limited trial), where the validated and revised instructional design was implemented in English classes at MAN 3 Madina and MAN 1 Madina. Following the implementation, data were collected through student response questionnaires and post-implementation teacher interviews to gather feedback on the strengths, weaknesses, and practical suggestions for the design. It is essential to clarify that this stage did not involve learning outcome measurements (e.g., pre-test/post-test), as the focus of this R&D study was on the development and validation of the instructional design product rather than on measuring its effect on student achievement; and (b) Focus Group Discussion (FGD) and dissemination seminar, held on Saturday, August 23, 2025, at the Auditorium of STAIN Mandailing Natal. The event was attended by 35 participants, including English teachers from MAN 1 Madina, MAN 3 Madina, MAS Mandily, MAS Dahrul Ikhlas, alumni of STAIN Mandailing Natal, university students, and learners involved in the classroom implementation. The FGD aimed to socialize the finalized design to the broader educational community and gather additional constructive feedback for future refinement.

Data Collection Techniques

Data collection techniques were aligned with each stage of the 4D model. In the Define stage, data were collected through student needs questionnaires, semi-structured teacher interviews, classroom observations, and document analysis of curricula, syllabi, and lesson plans.

In the Design stage, literature studies provided the theoretical foundation for the initial draft. In the Develop stage, expert validation instruments (Likert-scale assessment sheets and open-ended feedback forms) were used to evaluate the draft. In the Disseminate stage, student response questionnaires and post-implementation teacher interviews were administered to evaluate the implementation experience, and the FGD provided qualitative feedback from a broader audience of educational stakeholders.

Data Analysis Techniques

Data analysis in this R&D study was conducted using both descriptive qualitative and descriptive quantitative methods. In the Define stage, data from questionnaires, interviews, observations, and document analysis were analyzed using qualitative descriptive analysis following the Miles and Huberman (1994) framework: data reduction, data display, and conclusion drawing, to identify needs, problems, and actual conditions. In the Design stage, data from literature studies and needs analysis were synthesized theoretically to formulate the initial design. In the Develop stage, expert validation data were analyzed quantitatively by calculating the average assessment score for each aspect and converting them into feasibility categories (highly feasible: 4.21–5.00; feasible: 3.41–4.20; reasonably feasible: 2.61–3.40; less feasible: 1.81–2.60; not feasible: 1.00–1.80). Qualitative input from validators was analyzed thematically to guide design revisions. In the Disseminate stage, student questionnaire data were analyzed using descriptive statistics (percentages and means) to determine stakeholder perceptions, while narrative data from teacher interviews and FGD discussions were analyzed qualitatively using thematic coding to provide a comprehensive picture of the design's practical strengths, weaknesses, and areas for improvement.

RESULT | نتائج

1. Define Stage

The Define stage was conducted to identify the actual needs and conditions of English language learning at Madrasah Aliyah in Mandailing Natal. This stage comprised front-end analysis, learner analysis, task analysis, and concept analysis, carried out through student questionnaires, semi-structured teacher interviews, classroom observations, and document analysis.

The front-end analysis through student questionnaires revealed several critical findings. Approximately 50% of students reported being passive during classroom discussions, preferring to listen rather than actively participating. Around 40% of students acknowledged having difficulty in writing English essays, particularly in organizing ideas, selecting appropriate vocabulary, and applying correct grammatical structures. Moreover, 50% of students indicated that they found it easier to understand concepts when they had access to learning materials before class sessions. These findings confirmed the need for a learning model that encourages both pre-class preparation and structured in-class participation.

Teacher interviews reinforced these findings. Teachers reported that the dominant teaching approach was teacher-centered, relying heavily on lectures and written exercises. While internet facilities were available, technology use in class was limited to projectors and printed modules. Teachers expressed a strong need for practical guidance in integrating digital media into their instruction. A critical contextual finding was the school policy restricting students from bringing smartphones to school daily, which created a unique challenge for implementing technology-dependent models like Flipped Learning.

Learner analysis indicated that students at both madrasahs had mixed English proficiency levels, with the majority at an elementary to pre-intermediate level. Students showed positive attitudes toward collaborative activities but lacked confidence in productive skills (speaking and writing). Task analysis of the existing curriculum documents, syllabi, and lesson plans confirmed that instruction primarily emphasized reading and grammar, with minimal allocation for speaking, writing, and digital literacy skills. Concept analysis identified the key English language competencies—reading comprehension, essay writing, speaking for communication, and digital-mediated learning—that would serve as the foundation for the integrated Flipped Learning and TTW design.

2. Design Stage

Based on the needs analysis findings, the Design stage focused on developing an initial draft (prototype) of the integrated Flipped Learning and TTW instructional design. The design aimed to enhance active student participation, critical thinking, and writing skills while accommodating the contextual constraints identified in the Define stage.

The initial design consisted of five key components: learning objectives, materials, instructional strategies, media, and evaluation. Learning objectives were aligned with both curriculum targets and students' needs to use English actively while developing digital literacy. Learning materials were contextualized and presented in dual formats: digital media (video lessons accessible through school computer labs or WhatsApp Groups during permitted hours) and print-based materials (printed summaries and worksheet companions) to ensure accessibility for students without personal digital devices.

The instructional strategy was structured into two integrated phases. The pre-class phase (Flipped Learning component) required students to engage with learning materials independently before face-to-face sessions. Given the school's smartphone restriction policy, this phase was adapted using a hybrid approach: students could access digital materials through scheduled computer lab sessions at school, shared family devices at home, or printed companion materials distributed by the teacher. The in-class phase (TTW component) guided students through three systematic stages: Think (individual reflection on the pre-class materials), Talk (collaborative group discussion to share and refine ideas), and Write (structured individual writing to consolidate learning). Digital tools such as Google Classroom, YouTube, and WhatsApp Groups were used alongside traditional worksheets to maintain balance.

The design was grounded in student-centered learning and constructivist theories, emphasizing learners' active role in constructing knowledge. The technological integration was informed by Technology-Enhanced Language Learning (TELL) theory, which posits that digital tools enrich learning interaction, provide authentic resources, and promote personalized learning experiences. Evaluation instruments included process assessments (participation observation during Think, Talk, and Write stages) and product assessments (written output rubrics). The systematic design followed the Dick & Carey instructional design principles, ensuring coherence between learning objectives, activities, and assessments.

3. Develop Stage

In the Develop stage, the initial design draft was submitted to two expert validators for evaluation. Validator 1, a media expert from Universitas Negeri Medan (UNIMED), assessed the quality of instructional media, including digital interface design, visual presentation, and ease of use. Validator 2, an instructional design expert from STBA PIA Medan, evaluated the pedagogical

coherence, alignment between learning objectives and activities, material relevance, and the integration quality of the Flipped Learning and TTW models.

The validation results showed that the learning design achieved a high level of feasibility. The average scores across four validation aspects were as follows: design quality received an average score of 4.6, ease of use scored 4.5, material quality scored 4.7, and model integration scored 4.5. The overall average validation score was 4.58 out of 5.00, placing the design in the “highly valid and feasible for implementation” category (4.21–5.00 range).

Both validators provided qualitative feedback for improvement. The media expert emphasized the need for clearer step-by-step instructions for digital activities to accommodate teachers with limited technological proficiency. The instructional design expert recommended strengthening the print-based pre-class materials to ensure equivalence with the digital versions, so that students without device access would receive comparable learning experiences. Both validators also suggested adding explicit time allocation guidelines for each TTW phase to help teachers manage classroom activities more effectively.

Based on the validation feedback, several revisions were made to the design: (a) activity instructions were simplified and illustrated with visual guides; (b) print-based pre-class materials were enriched with graphic organizers and self-check questions; (c) time allocation guidelines were added for each phase (Think: 10–15 minutes, Talk: 15–20 minutes, Write: 20–25 minutes); and (d) alternative offline access strategies were included in the teacher’s guide. After revision, the design was deemed ready for limited implementation in the Disseminate stage.

4. Disseminate Stage

The Disseminate stage consisted of two main activities: classroom implementation (limited trial) and a Focus Group Discussion (FGD) with dissemination seminar.

Classroom Implementation. The finalized and validated learning design was implemented in English classes at MAN 3 Madina and MAN 1 Madina. During the implementation, students engaged in the pre-class phase using both digital and print-based materials, followed by in-class TTW activities. It is important to note that this implementation did not include a pre-test/post-test design to measure learning outcomes, as the objective of this R&D study was to develop, validate, and field-test the instructional design product rather than to measure its causal effect on student achievement.

Following the implementation, data were collected through student response questionnaires and post-implementation teacher interviews. The student questionnaires assessed perceptions of the design’s strengths, weaknesses, and areas for improvement across four dimensions: clarity of instructions, engagement level, perceived usefulness, and accessibility of pre-class materials. The teacher interviews explored practical experiences with implementing the design, including time management, student response patterns, and challenges encountered.

Student questionnaire results, based on responses from 40 students using a four-point agreement scale (Strongly Agree/Agree combined as “positive response”), indicated consistently high positive perceptions across all dimensions measured, as summarized in Table 1.

Table 1. Student Questionnaire Results on Design Implementation (n = 40)

Questionnaire Dimension	Positive Response (%)	Neutral (%)	Negative (%)
TTW structure helped organize thoughts before writing	85.0	10.0	5.0
Pre-class materials (digital/print) increased preparedness	80.0	12.5	7.5
Talk stage increased confidence in using English	87.5	7.5	5.0

Questionnaire Dimension	Positive Response (%)	Neutral (%)	Negative (%)
Time allocated for Write stage was sufficient	57.5	15.0	27.5
Digital pre-class materials were easy to access	65.0	15.0	20.0

As shown in Table 1, the majority of students responded positively across all dimensions, with the Talk stage receiving the highest positive response (87.5%, $n = 35$) for increasing confidence in using English, followed by the TTW structure's role in organizing thoughts before writing (85.0%, $n = 34$). The lowest positive response was recorded for the sufficiency of time allocated to the Write stage (57.5%, $n = 23$), with 27.5% ($n = 11$) of students expressing dissatisfaction—indicating that time management for the writing phase requires further adjustment. Regarding accessibility of digital pre-class materials, 20% ($n = 8$) of students reported difficulty, primarily attributed to limited internet access at home; these students relied on the print-based alternatives, which were reported to have adequately mitigated the accessibility gap.

Teacher interviews were conducted with the three participating English teachers (one from MAN 3 Madina, two from MAN 1 Madina) using a semi-structured protocol focusing on practicality, student response, and implementation challenges. The interviews confirmed that the design was practical and applicable within the madrasah context, while also surfacing specific operational challenges. One teacher from MAN 1 Madina remarked:

“Compared to my usual way of teaching, where I mostly explain and then give exercises, this model made the students more active, especially during the Talk stage. They were more confident speaking in groups than in front of the whole class. But I found the 2x45-minute time was tight—by the time we finished Think and Talk, the Write stage was rushed.”

(Interview, English Teacher, MAN 1 Madina)

Similarly, the teacher from MAN 3 Madina highlighted the practical benefit of the hybrid digital-print materials in accommodating the school's device policy:

“The printed materials really helped because not all students could access the videos at home. I distributed the print summaries a few days before class, and even students without phones could prepare. But for students who are still weak in English, they still needed more guidance when writing—maybe example sentences or vocabulary lists would help them start.”

(Interview, English Teacher, MAN 3 Madina)

These interview excerpts corroborate the questionnaire findings: teachers observed increased student participation compared to their usual lecture-based sessions, particularly during the Talk stage, and appreciated the structured lesson plans and the availability of both digital and print pre-class materials, which addressed the smartphone restriction policy. At the same time, the interviews substantiate two specific, actionable concerns—insufficient time allocation for the Write stage and the need for additional writing scaffolding for students with lower English proficiency—both of which align with the quantitative pattern observed in Table 1 and were carried forward as key discussion points in the FGD.

FGD and Dissemination Seminar. The dissemination seminar and FGD were held on Saturday, August 23, 2025, at the Auditorium of STAIN Mandailing Natal. The event was attended by 35 participants, including English teachers from MAN 1 Madina, MAN 3 Madina, MAS Mandily, MAS Dahrul Ikhlas, alumni of STAIN Mandailing Natal, university students, and learners involved in the classroom implementation.

The session was led by Mrs. Syas as the main speaker. The materials presented included an introduction to the learning design, lesson plan (RPP) and activity flow, digital and print learning media, and examples of TTW activities. After the presentation, participants actively asked questions regarding the ease of implementing the design in their classrooms, adjustment of activity duration to school schedules, strategies to enhance student engagement, and the use of digital and print media by both teachers and students.

The FGD produced several constructive suggestions: (a) activity duration for the Talk and Write stages should be more flexible to accommodate varying class sizes; (b) digital media instructions should include visual tutorials for teachers less familiar with technology; (c) additional writing scaffolds (e.g., sentence starters, vocabulary banks) should be provided for students with writing difficulties; and (d) the pre-class print materials should include self-assessment checklists so students can monitor their own readiness before class.

DISCUSSION

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This study produced an integrated Flipped Learning and Think-Talk-Write (TTW) instructional design that was validated as highly feasible by expert reviewers and received positive feedback from students and teachers during classroom implementation. The discussion addresses the key findings in relation to existing literature and the unique contextual challenges of the madrasah setting.

First, the expert validation results (average score of 4.58 out of 5.00) confirm that the developed instructional design meets the standards of content validity, construct validity, and practical applicability required for R&D products in education (Thiagarajan et al., 1974; Borg & Gall, 2003). The high validation scores across all four aspects—design quality, ease of use, material quality, and model integration—indicate that the combination of Flipped Learning and TTW is not only theoretically coherent but also practically implementable within the madrasah context. This finding aligns with Bishop and Verleger's (2013) observation that Flipped Learning, when carefully designed, can enhance the quality of in-class interactions by shifting content delivery to pre-class activities.

Second, and perhaps most significantly, this study demonstrates how the Flipped Learning model can be successfully adapted for educational settings with restrictive device policies. The school's zero-daily-smartphone policy initially posed a fundamental challenge: how can students engage in pre-class digital learning without personal device access? The hybrid digital-print approach developed in this study—combining scheduled computer lab sessions, WhatsApp Group-based material distribution during permitted hours, and enriched print companions—represents a practical solution to this dilemma. Student questionnaire responses confirmed that the print alternatives were effective in ensuring comparable pre-class preparation. This adaptation contributes to the growing literature on "low-tech Flipped Learning" (Chen et al., 2014) and addresses the digital divide that many schools in developing regions face (Siregar, 2022; Fauzi, 2023). It also resonates with constructivist principles, which emphasize that learning can occur through multiple modalities, not exclusively through digital means (Dick et al., 2015).

Third, the integration of TTW within the Flipped framework provided a structured mechanism for students to process pre-class materials actively during face-to-face sessions. Teacher interviews and student questionnaires indicated that the Talk stage was particularly effective in building student confidence and oral communication skills, while the Write stage

helped students consolidate their ideas into written form. These findings are consistent with Suriani's (2018) research, which found that TTW enhances expository writing skills by guiding students through systematic thinking and discussion processes. The combination of Flipped Learning (for pre-class content acquisition) and TTW (for in-class active processing) thus creates a complementary instructional cycle that addresses both receptive and productive language skills—a finding that extends Nurdin's (2020) work on integrating cooperative and technology-based strategies for EFL writing improvement.

Fourth, the feedback collected during the Disseminate stage through student questionnaires and teacher interviews provides valuable insights into the practical implementation of the design. The most frequently cited strength was the structured nature of the design, which gave both teachers and students clear guidance on what to do at each stage. The main challenges identified—time management within the 2x45-minute lesson format and the need for additional writing scaffolds for weaker students—are consistent with findings from O'Flaherty and Phillips (2015), who noted that Flipped Learning implementations often require careful time calibration. These practical insights from the Disseminate stage serve as important input for future iterations of the design.

From a theoretical perspective, this study contributes to the Technology-Enhanced Language Learning (TELL) literature by demonstrating that technology integration in language learning does not require full digital immersion. The hybrid approach adopted here shows that the principles of TELL—enriching interaction, providing authentic resources, and promoting personalized learning (Anderson & Dron, 2011)—can be achieved through a combination of digital and analog media, making them applicable even in resource-constrained settings. Furthermore, the study enriches the R&D literature in Islamic secondary education by providing a concrete example of how the 4D development model can be applied to create contextually responsive instructional innovations for madrasah environments.

It is important to acknowledge the limitations of this study. As an R&D study focused on product development and validation, this research did not measure student learning outcomes through experimental or quasi-experimental designs. The positive feedback from students and teachers during implementation reflects perceived effectiveness and practical applicability, but it does not constitute empirical evidence of the design's impact on student achievement in writing, speaking, or other measurable competencies. Future research should address this limitation by conducting controlled studies with pre-test/post-test designs to evaluate the design's impact on measurable learning outcomes.

CONCLUSION | خاتمة

This study successfully developed an English language instructional design integrating Flipped Learning and Think-Talk-Write (TTW) using the 4D R&D model (Define, Design, Develop, Disseminate) for Madrasah Aliyah students in Mandailing Natal. The needs analysis in the Define stage, conducted through student questionnaires and teacher interviews, confirmed the urgency of a student-centered, technology-adapted learning model. The Design stage produced a hybrid digital-print instructional prototype that creatively addresses the school's restrictive device policy. Expert validation in the Develop stage yielded an average score of 4.58 out of 5.00, categorizing the design as highly valid and feasible for implementation. The Disseminate stage, evaluated through student questionnaires and teacher interviews rather than learning outcome tests, revealed that the design was perceived as practical, engaging, and adaptable, with

constructive suggestions for time adjustment, enhanced writing scaffolds, and clearer digital media instructions.

The theoretical implication of this study lies in demonstrating that Flipped Learning can be viably adapted for low-technology environments through a hybrid digital-print approach, enriching the literature on TELL and contextually responsive R&D in Islamic secondary education. The practical implication is that English teachers in madrasahs with similar infrastructural constraints can adopt this design as a ready-to-use instructional framework, using the print-based pre-class materials as alternatives when digital access is limited.

Several recommendations are offered for future research and practice. First, future studies should employ quasi-experimental designs with control groups and pre-test/post-test measurements to empirically evaluate the design's impact on specific learning outcomes such as writing quality, speaking fluency, and critical thinking skills. Second, the design should be tested in a wider range of madrasah contexts, including urban schools with different digital infrastructure conditions, to assess its generalizability. Third, longitudinal studies could examine whether the benefits of the integrated Flipped Learning and TTW model are sustained over extended periods of use. Finally, future iterations of the design could explore the integration of additional digital platforms and artificial intelligence-based tools to further personalize the pre-class learning experience.

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