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Exploring Learners' Reading Difficulties and Development of An AI-Powered Reading Intervention Program in Tacurong City: A Sequential Exploratory Analysis

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ABSTRACT

Persistent deficits in basic reading skills continue to challenge educational systems worldwide, affecting learners' academic progress and broader life opportunities. This study employed an Exploratory Sequential Mixed Methods Design (ESMMD) to investigate reading difficulties among students in Tacurong City and to develop an AI-powered reading intervention program tailored to address these challenges. Findings revealed that learners faced multifaceted difficulties encompassing decoding, fluency, vocabulary, and comprehension. Decoding challenges hindered recognition of words and letters, particularly in English, which subsequently slowed reading speed and hindered expressive reading. Fluency deficits manifested as hesitant and slow reading, leading to reduced focus and disengagement, particularly with longer texts. Limited vocabulary knowledge further compounded comprehension issues, leaving learners dependent on memorization rather than meaningful understanding. Emotional and motivational factors, including anxiety, low confidence, and fear of mistakes, exacerbated these struggles, creating a cycle that limited participation and engagement. The study further demonstrated that these challenges were interrelated, affecting learners' overall reading achievement and highlighting the need for comprehensive, skill-focused, and affective-support interventions. The AI-powered reading intervention program was evaluated as highly effective, particularly through its adaptive learning features, real-time feedback, interactive content, and user-friendly design. Personalized exercises, instant progress tracking, and gamified reading activities enhanced learner engagement, improved reading fluency, and fostered motivation, while the platform's accessibility ensured inclusivity for students with varying digital literacy levels. Overall, the findings underscore that addressing reading difficulties requires a holistic approach combining structured skill development, emotional scaffolding, and technology-enhanced learning. Integrating AI-powered interventions into literacy instruction can provide individualized support, sustain engagement, and build learners' confidence, ultimately improving reading outcomes and promoting a positive, empowering reading experience.

Keywords: literacy intervention, adaptive learning, reading motivation, digital pedagogy



INTRODUCTION

Background of Study

Persistent deficits in basic reading skills remain a pressing global and national concern, undermining learners' broader educational progress and life opportunities; UNESCO highlights that hundreds of millions of children and adults still fail to acquire functional literacy, a problem made more urgent by the demands of a digital era where literacy must include comprehension and critical engagement with texts. In higher-income contexts, intelligent tutoring systems and AI-driven adaptive platforms have shown promising effects for personalized reading practice and strategy instruction, especially for less-skilled readers. However, evidence from low-resource settings is limited and context-sensitive adaptation is needed.

Globally, literacy remains central to sustainable development and social inclusion, and UNESCO's policy and monitoring work frames literacy as evolving in a digitalized world where comprehension, critical thinking, and lifelong learning are essential (UNESCO, 2022). Research on intelligent tutoring systems (ITS) and adaptive AI platforms shows robust potential to personalize reading practice, deliver immediate formative feedback, and yield improved comprehension outcomes—replicated efficacy studies (including a 2024 web-based ITS trial) provide encouraging results for learners in high-poverty contexts (Wijekumar et al., 2024).

Nevertheless, systematic reviews note heterogeneity in ITS effects and call for more research on implementation in diverse, low-resource classrooms and across different languages and cultures; that gap limits generalization of international AI findings to contexts like the Philippines (Smith & Nguyen, 2023).

National assessments like PISA 2018 flagged the Philippines for low reading comprehension scores (OECD, 2019), and several Philippine studies since 2018 document weak vocabulary, comprehension strategies, and instructional mismatches that contribute to reading difficulty (Department of Education-commissioned analyses, 2021). While DepEd and local divisions have rolled out remedial and enhanced reading programs, there is limited published research on AI-enabled or adaptive digital reading interventions in the Philippine K–12 setting; in particular, few studies evaluate how AI tools perform under local constraints such as connectivity, multilingual classrooms, and device access—highlighting a gap that underscores the need for locally anchored formative research to inform AI program design (Garcia & Santos, 2022).

In Mindanao and surrounding regions, literacy challenges intersect with geography, socioeconomic disadvantages, and multilingual classrooms; regional studies show significant pockets of underperformance and a wide variation in the quality of interventions. Although some programs (e.g., remedial modules, reading camps) have recorded positive local effects, meta-analyses and regional reviews note a dearth of rigorous evaluations of technology-mediated interventions in South Central Mindanao (Mendoza et al., 2023). This regional evidence gap signals a need for place-sensitive research that tests adaptive digital tools in rural and semi-urban schools and accounts for local language practices and infrastructural constraints.



Within Sultan Kudarat province and Tacurong City, university and division-level studies on reading skills (e.g., among college freshmen at Sultan Kudarat State University) and locally guided initiatives (like Tacurong City's Enhanced Reading Program) document persistent reading weaknesses among learners and local attempts to close gaps through teacher training and targeted programs (Ambayon, 2020; Schools Division of Tacurong City, 2023). However, there remains a shortage of rigorous mixed-method research that first explores learner- and teacher-perceived reading difficulties qualitatively and then uses those findings to develop and evaluate an AI-powered intervention tailored to Tacurong's unique multilingual and resource conditions. This sequential exploratory approach is necessary to ensure that technology fits the pedagogical and sociocultural realities of the locale.

This study aligns primarily with SDG 4 (Quality Education) by addressing foundational literacy (target 4.1: ensure all children acquire literacy and numeracy skills) and with SDG 10 (Reduced Inequalities) by seeking equitable, adaptive learning solutions for underserved learners.

By developing a context-sensitive AI intervention, the research also supports lifelong learning and inclusive education objectives consistent with UNESCO's literacy priorities (UNESCO, 2022).

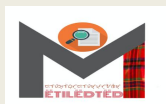
The overall goal is to explore the nature and drivers of learners' reading difficulties in Tacurong City and, using a sequential exploratory design, to develop and preliminarily evaluate an AI-powered reading intervention program that is pedagogically appropriate, culturally responsive, and feasible for local implementation.

Research Questions

This study aimed to explore the nature and drivers of learners' reading difficulties in Tacurong City and, using a sequential exploratory design, to develop and preliminarily evaluate an AI-powered reading intervention program that is pedagogically appropriate, culturally responsive, and feasible for local implementation.

Specifically, this sought to answer the following questions:

1. What specific reading difficulties are experienced in Tacurong City, as perceived by students, teachers, and parents?
2. How do learners and teachers describe the underlying factors contributing to these reading difficulties?
3. To what extent do the identified reading difficulties affect learners' reading performance based on standardized or teacher-made reading assessments?
4. What is the level of evaluation of the AI-powered reading intervention program in improving learners' reading performance, in terms of:



- 4.1. Personalization and Adaptive Learning Features;
- 4.2 Interactive and Engaging Content;
- 4.3 Real-Time Feedback and Progress Tracking; and
- 4.4 Accessibility and User-Friendliness?

METHODOLOGY

Research Design

This study employed an Exploratory Sequential Mixed Methods Design (ESMMD) to investigate learners' reading difficulties and develop an AI-powered reading intervention program in Tacurong City for the school year 2025-2026.

According to Creswell & Plano Clark, (2017), the ESMMD is particularly effective for addressing complex educational challenges where existing theories or interventions are limited, as it allows researchers to first explore a phenomenon qualitatively and then build quantitative instruments or interventions grounded in real-world insights. By beginning with qualitative exploration, the study can capture the nuanced reading difficulties of learners within their local context, which is essential for developing contextually relevant AI-based interventions (Fetters, Curry, & Creswell, 2013).

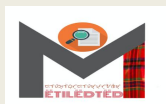
Participants/Respondents of the Study

Table 1 displays the qualifications of the participants based on the criteria set by the researcher prior to the selection of qualified informants of the study.

Table 1

Participants' Inclusion Criteria for Learners

Qualifications
Participants: 15 Learners
Current Enrollment Status Participants must be currently enrolled in Grades 4 to 6 in selected elementary schools within Tacurong City.
Assessment of Reading Profile Must have demonstrated reading difficulties as identified through teacher observations or



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previous reading assessment results.

Willingness to Participate in the Study

Students must be willing and able to participate in various research activities, including interviews, focus group discussions, or reading assessments.

Parental Consent and Authorization

Participants must obtain formal parental or guardian consent to take part in the study.

Table 1

Participants' Inclusion Criteria for Teachers

Qualifications
Participants: 15 Teachers
Current Teaching Assignment Must be currently teaching Grades 4 to 6 in selected elementary schools in Tacurong City. Minimum Teaching Experience Participants should have at least 2 years of experience in teaching reading or English language subjects. Professional Knowledge and Expertise Must be knowledgeable about learners' reading difficulties and various instructional strategies. Willingness to Participate in the Study Participants must be willing to engage in interviews or focus group discussions regarding learners' reading challenges and instructional practices.



Table 1

Participants' Inclusion Criteria for Parents

Qualifications
Participants: 15 Parents
Parental and Guardianship Status Must be the parent or legal guardian of learners currently enrolled in Grades 4 to 6 in selected elementary schools in Tacurong City. Child's Reading Profile Must have a child identified with reading difficulties based on teacher observations or previous reading assessment results. Involvement in Home Literacy Support Participants must be directly involved in supporting their child's learning at home, such as assisting with reading activities, monitoring homework, or providing encouragement. Willingness to Share Insights Must be willing to share personal insights and experiences regarding their child's reading challenges and home literacy practices through interviews or focus group discussions. Informed Consent and Participation Participants must provide formal informed consent to take part in the study.

The participants of this study were the selected forty-five (45) participants consisting of 15 learners, 15 teachers and 15 parents from selected elementary schools in Tacurong City, who qualify the inclusion criteria set by the researcher.

Sampling Technique

The study used purposive sampling, a non-probability sampling technique, to select participants who can provide in-depth and meaningful information regarding reading difficulties. Purposive sampling is particularly appropriate for qualitative and exploratory sequential designs



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because it allows researchers to target participants who have direct experience with the phenomenon under investigation (Etikan, Musa, & Alkassim, 2016; Palinkas et al., 2015). Learners identified by their teachers as struggling readers and teachers experienced in reading instruction will be included to ensure that the collected data reflect authentic reading challenges and instructional insights.

This approach is consistent with the exploratory sequential mixed methods design, where initial qualitative insights guide subsequent phases of instrument development and intervention design (Creswell & Plano Clark, 2017). By carefully selecting participants, the study ensures that the AI-powered reading intervention program is grounded in the real needs and contexts of Tacurong City elementary learners.

Research Instruments

In this study, a semi-structured interview was the primary investigative tool employed during the interviews and Focus Group Discussions (FGDs). This included documentation tools such as audio recorders and multimedia applications such as In Vivo to help the researcher transcribe the responses through thematic analysis and coding. The study investigated the effectiveness, strategies, outcomes, and challenges related to integrating IKSP in the IPed curriculum in the specific context of DepEd Esperanza District III, Division of Sultan Kudarat, for the school year 2024-2025.

The researcher met the NCIP and the municipal Indigenous Peoples' Mandatory Representative (IPMR) in the target locale of her study. Interpretation of the results involved thematic analysis, which identified recurring themes, patterns, and insights related to integrating Indigenous Knowledge Systems and Practices (IKSP) in Indigenous Peoples Education (IPed). This analysis was conducted systematically, carefully examining the nuances and meanings expressed by participants during the In-Depth Interviews.

The findings were presented in a comprehensive report that outlines the key themes and insights derived from the data. This report included direct quotes from participants to illustrate important points and provide context for the findings. Visual aids such as charts, graphs, or tables may also present quantitative data.

Additionally, the researcher considered organizing a presentation or seminar to disseminate the findings to relevant stakeholders, such as educators, policymakers, and community members involved in Indigenous education. It provided an opportunity to discuss the implications of the findings and explore potential strategies for addressing the challenges identified in the study.

This instrument's credibility and suitability were validated through a rigorous assessment process overseen by a panel of experts with specialized knowledge in developing pertinent research instruments.



Data Gathering Procedure

The study's reliability was ensured by the researcher's strict adherence to a set of protocols.

The study's focus is to examine the learners' reading difficulties and develop an AI-powered reading intervention program in Tacurong City.

First, the Superintendent of the DepEd-Tacurong City and the Dean of the CGS were requested to sign a document authorizing the researcher to do necessary steps to conduct the study.

A second authorization letter was sent to the District Supervisor of DepEd Lutayan district in order to acquire the precise data necessary for this study, a survey questionnaire was created, evaluated, and implemented.

The researcher next chose respondents using a Purposive Sampling Technique to consider all the newly appointed school heads to be the participants of the study. As long as the health procedure is adhered to, the researcher then began distributing the interview, and Focus Group Discussion (FGD) via face to face mode.

Finally, the data acquired from the interview, and Focus Group Discussion (FGD) were collated, analyzed, and interpreted using thematic analysis.

Data Transcription Process

All gathered raw data from the participants—including learners, teachers, and parents—through interviews and focus group discussions (FGDs) were transcribed using the transcription process of Kvale and Brinkmann (2009). By following these step-by-step processes, the researcher aligned their transcription approach with established academic guidelines, ensuring that the oral discourse was accurately transformed into written text for analysis. This rigorous transcription process ensured the trustworthiness and credibility of the qualitative data, which served as the essential foundation for identifying specific reading difficulties and informing the subsequent design of the AI-powered reading intervention program.

To execute this comprehensive analytical process across both the qualitative and quantitative phases of the Exploratory Sequential Mixed Methods Design (ESMMD), a series of vital steps were meticulously followed:

Step 1: Data Organization and Preparation. In the initial phase, all qualitative data sources, including verbatim interview transcripts, notes from FGDs, and observation protocols, were thoroughly organized and prepared for analysis. This step ensured the structured arrangement and accessibility of the data, allowing for a seamless transition into the exploration of learners' reading struggles (Braun & Clarke, 2019).



Step 2: Data Immersion and Familiarization. Subsequently, the researcher deeply immersed herself in the data by repeatedly reviewing the transcripts and field notes. This immersive process was crucial for gaining a profound understanding of the learners' experiences, linguistic struggles, and the socio-educational context of reading difficulties in Tacurong City (Nowell et al., 2017).

Step 3: Systematic Coding Process. The third step involved commencing a systematic coding process where key statements, phrases, and ideas were highlighted. Initial codes were generated to represent patterns in reading difficulties, specifically focusing on how these challenges manifest in the classroom and at home during the school year 2024-2025 (Clarke & Braun, 2021).

Step 4: Categorization and Preliminary Themes. Following coding, related codes were grouped into broader categories reflecting specific types of reading struggles, such as decoding issues, comprehension challenges, vocabulary limitations, and fluency problems. These categories established the initial framework for organizing the qualitative findings (Vaismoradi et al., 2016).

Step 5: Theme Development and Refinement. Following this, categories were synthesized into overarching themes that captured the essence of the learners' reading struggles. The researcher scrutinized these themes for coherence and clarity, assigning descriptive labels that facilitated the interpretation of how an AI-powered intervention might address these specific gaps (Terry et al., 2017).

Step 6: Validation and Member Checking. To ensure accuracy and credibility, member checking was conducted. The identified themes were presented back to the participants to verify that the findings truly reflected their experiences and insights regarding reading challenges (Nowell et al., 2017).

Step 7: Quantitative Analysis and Statistical Validation. Transitioning to the second phase, quantitative data from pretests and posttests were analyzed using descriptive statistics (mean, frequency, percentage) to identify performance trends. Inferential statistics, specifically a paired-samples t-test, were employed to determine the statistical significance of improvements following the AI-powered intervention, with a significance level set at 0.05.

Step 8: Integration and Thematic Interpretation. Finally, the analysis transcended individual phases by adopting a sequential explanatory approach. The researcher integrated qualitative themes with quantitative outcomes to provide a holistic understanding. This triangulation enabled the researcher to interpret the effectiveness of the intervention program in relation to the previously identified reading challenges (Braun & Clarke, 2022).

This meticulous and well-structured process empowered the researcher to systematically investigate the efficacy of AI-assisted instructional strategies. Ultimately, this approach yielded evidence-based insights and recommendations for educators and stakeholders in Tacurong City,



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contributing to enhanced intervention programs aimed at addressing learners' reading difficulties through innovative technology.

Data Analysis

To ensure the research's reliability and methodological rigor, the researcher adhered strictly to a structured analytical process. The primary objective was to employ an Exploratory Sequential Mixed Methods Design (ESMMD) to explore learners' reading difficulties and subsequently validate an AI-powered intervention program within elementary schools in Tacurong City.

In the initial qualitative phase, the research focused on exploring learners' reading experiences through interviews, focus group discussions, and observations. The data collected from these interactions were systematically organized and analyzed using a thematic analysis approach. This involved a meticulous transcription process to ensure familiarization, followed by the coding of key statements and the categorization of related ideas into broader groups, such as decoding issues and comprehension challenges. Ultimately, overarching themes were developed and validated through member checking to ensure credibility. This qualitative analysis provided the essential foundation for designing an AI-powered reading intervention tailored to the specific needs of the learners.

The secondary phase shifted to quantitative validation to evaluate the effectiveness of the developed intervention program. Quantitative data were gathered through pretests and posttests to measure changes in reading performance. Descriptive statistics, including mean and frequency, were computed to summarize score distributions and identify general trends. Furthermore, a paired-samples t-test was conducted as an inferential statistical measure to determine if significant differences existed between pretest and posttest results, with the level of significance set at 0.05 to ensure statistical meaningfulness.

Ultimately, the findings from both phases were systematically integrated using a sequential explanatory approach. The qualitative insights into specific reading challenges guided the development of the instructional strategy, while the quantitative outcomes provided empirical evidence of its efficacy. This integration allowed for the triangulation of data, providing a holistic understanding of learners' reading struggles and the impact of the AI-powered intervention. This combined approach was expected to yield evidence-based recommendations for educators and stakeholders regarding AI-assisted instructional strategies tailored to student needs.

Scope and Limitations

This study focuses on exploring the reading difficulties of elementary learners in selected public elementary schools in Tacurong City during the School Year 2025–2026 as the basis for developing an AI-powered reading intervention program. The participants of the study will include elementary pupils, English teachers, and school heads who are directly engaged in teaching and assessing reading competencies.



The research will be conducted within the Tacurong City Division, employing a sequential exploratory analysis that begins with qualitative exploration of learners' struggles followed by quantitative validation of the identified issues. The scope is delimited to reading skills in English and does not cover other subject areas or higher-level language competencies. It is further limited to public elementary schools to ensure contextual consistency and practicality of implementation. This study is undertaken to provide innovative and technology-driven solutions that address learners' reading gaps, thereby enhancing literacy development and academic performance in the local educational setting.

RESULTS AND DISCUSSIONS

Persistent deficits in basic reading skills remain a pressing global and national concern, undermining learners' broader educational progress and life opportunities; UNESCO highlights that hundreds of millions of children and adults still fail to acquire functional literacy, a problem made more urgent by the demands of a digital era where literacy must include comprehension and critical engagement with texts. This study employed an Exploratory Sequential Mixed Methods Design (ESMMD) to investigate learners' reading difficulties and develop an AI-powered reading intervention program in Tacurong City.

The study revealed that students in Tacurong City experience multifaceted reading difficulties that span decoding, fluency, vocabulary, and comprehension. Decoding challenges make it difficult for learners to recognize words and letters, particularly in English, which in turn hinders reading speed and expression. Fluency issues were observed, as students struggled to read smoothly and maintain proper pacing, often losing focus or interest during longer texts.

Limited vocabulary knowledge further compounded comprehension difficulties, leaving learners reliant on memorization rather than understanding. Overall, these interconnected challenges affected students' ability to engage meaningfully with reading materials, highlighting the need for targeted instructional support and scaffolded interventions.

Further, it has been shown that reading difficulties among students in Tacurong City are influenced by multiple interrelated factors. Limited fluency, characterized by slow and hesitant reading, hinders smooth text processing and oral reading performance. Decoding challenges, including difficulty recognizing letters, sounds, and combining syllables, impede the development of fluent reading and comprehension. Limited vocabulary restricts learners' ability to understand complex texts, while comprehension difficulties prevent them from grasping the meaning and context of what they read. Emotional and motivational factors, such as anxiety, low confidence, and fear of making mistakes, further reduce participation and engagement, creating a cycle of struggle that affects overall reading performance.

Furthermore, the results indicate that learners' reading performance is significantly affected by a combination of fluency, decoding, comprehension, vocabulary, and emotional-motivational challenges. Fluency deficits and decoding difficulties hinder smooth and accurate reading, while limited comprehension and vocabulary restrict understanding of texts, especially longer or more complex passages.



Emotional and motivational factors, such as anxiety and low confidence, further reduce learners' willingness to engage in reading activities, creating a compounding effect on overall performance. Collectively, these difficulties result in below-grade-level reading achievement, highlighting the need for comprehensive and targeted interventions that address both skill-based and affective aspects of reading.

Finally, the evaluation of the AI-powered reading intervention program revealed that it was highly effective in improving learners' reading performance. The program's adaptive learning features and real-time feedback were particularly impactful, allowing students to receive personalized exercises and monitor their progress efficiently. Additionally, interactive and engaging content kept learners motivated, while the platform's accessibility and user-friendliness ensured that learners of varying digital literacy levels could benefit from it.

Conclusion

The following conclusions were made in light of this study's findings:

It is evident that reading difficulties are not isolated skills deficits but a complex interplay of decoding, fluency, vocabulary, and comprehension challenges. Addressing these issues requires a holistic approach that combines consistent practice, guided support, and strategies tailored to learners' individual needs.

Cultivating such supportive reading environments can enhance confidence, engagement, and literacy outcomes, ultimately empowering students to become more competent and motivated readers.

Addressing reading difficulties requires a holistic approach that integrates skill-building with emotional support. Interventions should focus on improving fluency, decoding, vocabulary, and comprehension while fostering confidence and motivation.

Reflectively, the importance of adopting a holistic approach to literacy development, one that combines structured skill-building with supportive emotional scaffolding. It becomes clear that improving reading outcomes requires not only explicit instruction in fluency, decoding, and vocabulary but also creating a positive and encouraging environment where learners feel confident to participate, make mistakes, and gradually build mastery.

It is also concluded that integrating AI-powered interventions into reading instruction can meaningfully support learners' growth by addressing individual needs and fostering engagement. The positive reception of personalized exercises and instant feedback highlights the value of adaptive technologies in education, while the program's usability ensures it can be effectively implemented across diverse learning contexts.



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Finally, leveraging technology thoughtfully to complement traditional teaching methods, empowering learners to build confidence, improve literacy, and sustain motivation in their reading journey.

Recommendations

In light of the findings of the study, the following were recommended:

1. DepEd may prioritize funding and policy support for AI-powered reading programs in schools with high incidence of reading difficulties, ensuring that interventions target decoding, fluency, vocabulary, and comprehension simultaneously.
2. School Administrators may encourage regular use of adaptive reading tools and integrate structured reading sessions in the school schedule, while providing teacher mentoring and peer-assisted reading activities to build student confidence.
3. Curriculum Planners may design reading curricula that blend traditional instruction with technology-enhanced learning, incorporating scaffolded exercises, gamified content, and vocabulary-building tasks to address skill gaps and sustain learner engagement.
4. Reading Teachers and Coordinators may utilize AI-powered platforms to provide personalized practice, monitor student progress in real time, and offer gentle feedback to reduce reading anxiety, while complementing digital lessons with collaborative and low-pressure group reading.
5. Future Researchers may explore the long-term effects of AI-assisted reading programs on decoding, fluency, vocabulary, comprehension, and learners' emotional confidence, as well as investigate culturally responsive adaptations for diverse student populations to maximize inclusivity.

Compliance with Ethical Standards

Before Prior to implementation, all of the above plans and suggestions were presented to East-West Mindanao Colleges Inc to ensure compliance with the procedures.

In addition, by utilizing Informed Consent Forms (see attachments for forms), the researcher ensured that all collected data were voluntarily supplied by qualified individuals who met the study's inclusion criteria. Individuals who did not want to participate were not coerced or recruited.

Participants were interviewed and focus groups were conducted using validated instruments in settings they perceived as secure, pleasant, and convenient, with risks minimized or eliminated entirely. Participants had the option of reviewing the collected data. Individuals volunteered their time for interviews lasting thirty (30) minutes to one (1) hour.



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The participants' time and effort were recognized by the researcher in the form of a token. Consistent with the Data Privacy Act (DPA), the researcher treated all participant data with the utmost confidentiality, guaranteeing that no identifying information about the study's outcomes was shared with any third parties.

Informed Consent. Before participation, explicit and informed consent was diligently obtained from all school heads involved in the study. They possessed a comprehensive understanding of the study's objectives, methodologies, potential risks, and benefits. Furthermore, participation remained entirely voluntary, affording participants the autonomy to withdraw from the study at any juncture without encountering any adverse consequences.

Anonymity and Confidentiality. To safeguard the identities and responses of the students, rigorous measures were enacted to ensure anonymity and confidentiality. Instead of using actual names, pseudonyms or codes were employed, upholding the participants' privacy. The collected data were securely stored with access restricted solely to the research team.

Avoiding Harm. Delicate subjects, such as the challenges inherent in participants' roles, were discussed with meticulous consideration for potential emotional and psychological impact. Strategies were in place to minimize distress, and a support system was readily available to assist participants if needed.

Researcher-Participant Relationship. The researcher maintained a professional and respectful rapport when engaging with the school heads. Any actions that might have exploited or caused harm to participants were scrupulously avoided, ensuring their dignity and respect throughout the research process.

Data Protection. Adherence to data protection regulations and laws was strictly followed to safeguard participants' personal information. Stringent measures were employed to ensure secure storage and transmission of data.

Voluntary Participation. Participants were assured that their involvement in the study was wholly voluntary, devoid of coercion or external pressure.

Researcher Bias. The researcher remained vigilant regarding potential biases that might have influenced data collection and analysis, upholding objectivity and transparency throughout the research.

Institutional Approval. Before initiating the study, the researcher sought ethical clearance from the pertinent institutional review boards or ethics committees.

Honesty and Integrity. The research findings were reported truthfully and accurately, devoid of manipulation or distortion to align with preconceived notions or biases.



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Beneficence. The potential benefits of the research to educational practices and policies were thoughtfully considered, ensuring the study positively contributed to the enhancement of the education system.

Cultural Sensitivity. The researcher displayed cultural sensitivity by respecting local customs, beliefs, and practices within the research setting, refraining from imposing external values on the participants.

Inclusion and Diversity. The study's structure prioritized inclusivity and diversity, encompassing a wide spectrum of learners' reading difficulties and developed an AI-powered reading intervention program in Tacurong City.

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The researcher would like to express her most sincere appreciation to all those people who helped to make this research a success. With sincere respect, appreciation, and honor, she thanks the following people for their support:

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Declaration AI Tools Utilization

I do hereby declare the use AI tools, such as Chat GPT and Grammarly for grammar checking and sentence organization purposes only.

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