

Use of Duolingo as an Instructional Tool in Enhancing Reading: Exploring the Value of Scaffolding Theory

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Abstract

Reading difficulty is a worldwide problem. Using action research design with mixed quantitative and qualitative approach, I examined the impact of Duolingo on reading, and its potential transformation based on the feedback of struggling-readers. I collected data through assessments and in-depth interview. Using Wilcoxon Signed-Rank Test, and thematic analysis, I found that learners began with low reading proficiency but, through a structured Duolingo-based intervention, they showed improved reading skills, increased motivation and confidence. The learning benefits and limitations related to access and usability of Duolingo were established. Educational practitioners and policymakers may extend the use of Duolingo to other subjects and recreational learning to boost engagement, with support from internet access, devices and policies.

Keywords: Use of Duolingo, instructional tool, enhancing reading, value of scaffolding theory

INTRODUCTION

Reading difficulty is a critical concern in education due to their impact on confidence, engagement and long-term learning. As a school reading coordinator, I have observed that learners with literacy challenges often experience frustration and develop avoidance behaviors that hinder progress. Conventional teaching approaches, though intended to support learning, often fail to address the diverse needs of struggling readers. This gap in instructional effectiveness raises concerns about learner engagement and sustained literacy development. Recent studies affirmed that learners with reading difficulties benefit from targeted and scaffolded interventions, as traditional methods may not sufficiently address their specific needs and can contribute to disengagement from reading activities (Main, 2023).

On a global scale, I have observed that a worldwide concern in education is a persistent literacy challenges which affects learners across diverse regions and educational systems. In China, according to Li and Zhang (2021), despite reforms in literacy education, many students continue to demonstrate low levels of reading skills in both their first and second languages, as reflected in national assessments. Similarly, I also found out that in South Africa, according to Akinyemi (2023), a significant percentage of early-grade learners failed to reach minimum proficiency in understanding written texts, indicating a widespread reading crisis. I also noted from the UNESCO Global Education Monitoring Report (2023) that millions of children around the world are unable to read and understand simple texts by the end of primary school.

In the Philippine context, I noticed that reading difficulties remain a persistent challenge in basic education, as many learners continue to struggle with foundational literacy skills. I perceived that many elementary pupils in Palawan still read below their expected grade level, reflecting gaps in reading fluency and word recognition as what Reyes and Bautista (2021) have reported. Likewise, Villanueva and Cruz (2022) gave me an idea that lower-grade students in Cebu commonly experience difficulties in decoding and pronunciation, which hinder progress in other learning areas.

More specifically, in Davao City, I learned from the study of Mendoza and Dizon (2023) emphasizing that some learners in Davao City could read aloud but lacked accuracy and appropriate pacing, indicating continuing challenges in early reading acquisition. I acknowledge, based on the Department of Education, Davao Region (DepEd XI, 2024) reports, that reading

proficiency among early graders remains below national targets. This finding led me to realize the claim of Castro and Lim (2025) that limited access to reading materials and insufficient individualized support continue to contribute to these reading difficulties

Given these realities, these converging observations from the literature and my professional experience have led me to recognize the urgent need for innovative instructional approaches that can provide differentiated, engaging, and theoretically grounded support for struggling readers. The integration of technology-enhanced learning tools, particularly those designed with pedagogical principles in mind, presents a promising avenue for addressing these persistent literacy challenges.

Significance of the study

This study is significant as it supports Sustainable Development Goal 4 (Quality Education) by addressing persistent challenges in reading proficiency through the use of innovative and accessible digital tools. It may also contribute to the national goals of Philippine education by helping bridge learning gaps and informing effective instructional practices and policies. Moreover, it aligns with the vision and mission of Holy Cross of Davao College by promoting academic excellence, fostering learner-centered innovation, and strengthening digital competence. The findings may help in developing inclusive and technology-enhanced literacy programs that prepare learners to become globally competitive and responsible citizens.

Problem Statement

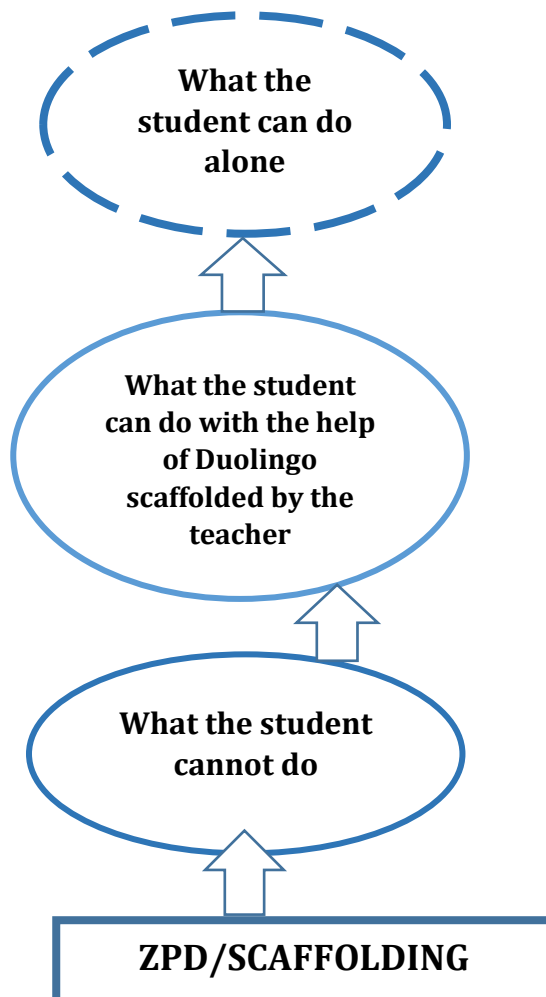
In this study, I examined the impact of Duolingo on reading and its potential transformation based on the feedback of struggling-readers. Specifically, I sought answers to the following questions:

1. What was the reading baseline results of the subjects? What are the perceptions on learners reading capabilities?
2. What is the systematic integration of Duolingo in reading instruction in relation to ZPD and scaffolding principles?
3. What were learners' positive and negative feedback regarding the use of Duolingo as a reading instructional tool?
4. What changes in reading performance do learners demonstrate after engaging with Duolingo-based instruction over a specified intervention period?
5. What innovations in the use of Duolingo was implemented as tool for enhancing reading?

Theoretical Underpinning

This study is anchored on the theory of Vygotsky's Sociocultural Theory (1978), which states that "learning is a socially mediated process where interaction with more knowledgeable others and the use of cultural tools are fundamental to cognitive development (Taber, 2025). A key concept to this theory is the Zone of Proximal Development (ZPD) which explains that learners can achieve higher levels of understanding and skills when guided by competent teachers or peers, compared to what they can accomplish independently.

In the context of this study, it highlights that teacher acts as the "more knowledgeable others" who scaffold learning with the use of Duolingo as an instruction of reading intervention. The gap between struggling readers can accomplish independently and what they can achieve with the use of Duolingo application underscores the critical role of technological tools in inclusive education. Duolingo can provide the necessary support and scaffolding to strengthen students' reading abilities, thereby promoting their active engagement and meaningful participation in classroom learning.

Conceptual Flow**Interactive Inquiry**

My planning prior to the intervention was informed by classroom observations, evaluation and reflections of Grade 11 learners and a review of literature on technology-enhanced language learning. Through this inquiry-driven process, I expected Duolingo to support gradual improvement in reading through structured scaffolding, with learner progress varying based on prior knowledge, motivation, and engagement, and some eventually developing independent reading skills through sustained use. However, I also recognized that outcomes would not be uniformly positive, as some learners might continue to struggle despite support, particularly when tasks are not aligned with their readiness or cognitive capacity. I further anticipated that some may express negative feedback regarding the digital tool itself, particularly issues related to internet connectivity, application limitations, technical disruptions or interface features that may affect usability and sustained engagement. Additionally, persistent reading difficulties may reflect deeper learning needs that require more specialized interventions beyond digital tools.

ACTION PLANNING

Timeline

In this section, I presented how this action research of three-week structured Duolingo-based intervention for struggling Grade 11 readers was implemented using a mixed-method approach across five interconnected phases.

Phase 1 –Participants and location (Day 1):

On the first day of the cycle, I identified 15 Grade 11 learners who were classified as struggling readers based on their pre-test results, particularly in reading fluency, accuracy, comprehension, and vocabulary development. I used purposive sampling to select participants who met the criteria for the study (Nyimbili & Nyimbili, 2024). I also identified three teachers who served as co-observers of the students' learning during the intervention. The study was conducted at Cateel Vocational High School where learners commonly experience difficulties in vocabulary acquisition, comprehension, and decoding skills.

Phase 2 – Orientation of participant, Pre-assessment and Duolingo Mapping (Day 2):

On day 2, I oriented both learners' participants and parents regarding the purpose, scope, and procedures of the study to ensure informed participation and cooperation throughout the intervention. In addition, I administered pre-reading assessments to establish baseline data on learners' fluency, comprehension, accuracy, and vocabulary skills. Furthermore, I carefully mapped Duolingo ensuring that tasks were appropriately scaffolded and aligned with their individual learning needs to support gradual and meaningful reading development.

Phase 3 – Intervention Action (Days 3–14):

On day 3-14, learners participated in Duolingo-based reading sessions for 1–2 hours daily, focusing on vocabulary development, sentence-level reading, and comprehension activities. To strengthen learning support, I facilitated weekly small-group discussions and individual check-ins, which provided opportunities for scaffolding, timely feedback and sustained learner motivation. In addition, the class adviser, English teacher, and SPED teacher assisted in monitoring the learners' progress and performance throughout the intervention, ensuring consistent observation and instructional support across different learning needs.

Phase 3 – Ongoing Observation (Day 10-14):

On day 10-14, adjustments to activities were made as necessary based on learners' performance data and levels of engagement, as monitored by the reading teacher through reflection logs and systematic observation notes. These records were regularly reviewed to identify patterns in learners' participation, responsiveness, and progress. Findings from these sources guided timely instructional modifications to better support individual learning needs and ensure continuous and meaningful improvement throughout the intervention.

Phase 4 – Data Collection (Day 15):

On the last day of intervention, I conducted post-assessments and In-Depth Interview (IDI) to evaluate learners' reading improvement and to gather their perceptions of the intervention.

For the quantitative component, I administered post-test assessments to measure learners' reading skills after the intervention. This assessment provided objective data on changes in reading fluency, accuracy, comprehension, and vocabulary development, allowing me to determine the extent of improvement brought about by the intervention.

For the qualitative component, I conducted IDI using a semi-structured interview guide. Through these interviews, I explored learners' experiences, perceptions, engagement and challenges while using Duolingo as a reading support tool. This approach allowed me to ask probing and follow-up questions, which helped generate rich and detailed data (Creswell & Poth, 2018). These methods enabled me to capture the learners' authentic voices and gain a deeper understanding of how Duolingo influenced their motivation, engagement and reading development.

Phase 5 – Data Analysis (Day 16 and beyond):

I analyzed the quantitative data using the Wilcoxon Signed-Rank Test to compare learners' pre-test and post-test scores. This nonparametric statistical test is used to determine whether there is a significant difference between two related samples by examining the ranked differences of paired observations. It is appropriate for small sample sizes, ordinal data, or when normality assumptions are not met, making it suitable for this action research on the Duolingo reading intervention. As noted by Pallant (2020), it serves as a reliable alternative to the paired t-test when parametric assumptions are violated.

For the qualitative data, I conducted thematic analysis following the six-phase framework of Braun and Clarke (2006). I began by familiarizing myself with the interview transcripts, followed by generating initial codes from meaningful statements. These codes were then organized into broader themes that captured learners' experiences, engagement and reading development. I further reviewed and refined the themes to ensure alignment with the Zone of Proximal Development and scaffolding principles, allowing me to better understand how Duolingo supported learners' progression from assisted to more independent reading.

Roles and Responsibilities

As the practitioner-researcher, I planned, implemented, monitored, and documented the intervention. The English teacher, class adviser and SPED teacher acted as co-facilitators, assisting in scaffolding learners' reading activities and validating observations. Learners participated actively by completing Duolingo lessons and reflecting on their learning experiences. The school head provided institutional support, ensure access to devices and help coordinate schedules.

Risk Management

Potential challenges include unstable internet connectivity, limited device availability, and varying levels of learner motivation. To mitigate these, offline Duolingo lessons was utilized, when necessary, schedules remained flexible, and motivation strategies such as praise, gamification and progress rewards were applied. Technical issues were addressed in coordination with the school's ICT staff to ensure continuous, reliable implementation. Home visitation was made necessary.

Trustworthiness

Approval for the study was granted by the Society of Moral Integrity and Legal Ethics (SMILE) at Holy Cross of Davao College, confirming adherence to established ethical guidelines for research involving human participants (Capill, 2024). Before starting the study, I secured permission from the Department of Education through the proper administrative channels to access qualified participants. In examining Duolingo as a technology-enhanced tool for improving the reading performance of Grade 11 learners, I ensured the trustworthiness of the study by adhering to the principles of credibility, transferability, dependability, and confirmability (Creswell, 2017). I strengthened credibility through systematic data collection and careful analysis of both assessment results and interview responses. Additionally, I sought expert validation of the reading assessment tool and the semi-structured interview guide to ensure that both instruments were appropriate and aligned with the objectives of the study.

Credibility. Credibility ensures the objectivity and applicability of the findings by establishing agreement between participants and the researcher (Schmidt, 2017). I applied validated research methods, use appropriate operational measures, and ensure participants' honesty by allowing voluntary participation. Purposive sampling and peer review by academic experts will further strengthen credibility.

Transferability. Transferability refers to the extent to which the findings can be applied in other contexts (Creswell, 2013). This was achieved by providing clear descriptions so future researchers can replicate the study if relevant. The usefulness of the results for policymakers, school administrators, and stakeholders also supports transferability.

Dependability. Dependability concerns the consistency and reliability of the research process (Moon et al., 2016). I provided detailed documentation of procedures, including design, implementation, and data collection. Guidance from a mentor and evaluation by expert panelists will further ensure the study's reliability.

Confirmability. Confirmability ensures that findings are shaped by the participants rather than researcher bias. Participant validation of IDIs and FGDs was conducted to verify transcription accuracy and interpretations. This process, aligned with Creswell (2017), strengthens the neutrality and trustworthiness of the results.

RESULTS

In this chapter, I presented my quantitative and qualitative results.

Quantitative Results

Table 1. Test of Difference (Wilcoxon Signed-Rank Test)

Tests	Median	N	W-value	Z-value	p-value	Decision on Ho	Interpretation
Pretest	14	15	0.00	-3.430	0.001	Rejected	Significant
Posttest	37						

Negative Ranks = 0; Positive Ranks = 120

The table shows the results of the Wilcoxon Signed Rank Test. It revealed significant improvement between the pretest and posttest scores of the participants. The median score increased from 14 in the pretest to 37 in the posttest, indicating a substantial improvement in reading performance following the use of Duolingo as a reading intervention. With a sample size of 15, the test yielded a W-value of 0.00 and Z-value of -3.430, confirming that all observed differences moved in the same direction, with every participant demonstrating improvement. The p-value of 0.001, which is lower than the 0.05 level of significance, led to the rejection of the null hypothesis, indicating that the difference between the pretest and posttest scores was statistically significant.

The comparison of the mean percentage scores, which increased from 30% in the pretest to 75% in the posttest, further supports the concept of the Zone of Proximal Development proposed by Lev Vygotsky. These results indicate that the Duolingo-based instruction successfully supported learners in progressing beyond their initial reading abilities while still suggesting the need for continued scaffolding to address more advanced reading skills. The remaining 25% gap beyond the posttest scores represents the area still outside the learners' current capacity, even with support. This portion reflects the "zone of future development," where learners have not yet acquired the readiness or cognitive strategies to master more complex tasks.

Qualitative Results

Beyond numbers, this discussion foregrounds learners' voices, capturing their perceptions of struggle and progress as they learn and triumph through scaffolding.

Baseline reading performance and perceptions on reading capabilities among learners

The learners' baseline reading performance was seen not only in scores but also in their silent pauses, uncertain glances, and quiet withdrawal subtle signs of struggle, self-doubt and discouragement in reading.

Participant 5, with a heavy heart, shared his fear and struggle in understanding long sentences, especially when unfamiliar words made comprehension feel overwhelming and emotionally burdensome. The participant shared:

"Magalisuaday gayud ako ng mga mahabaay na sentences, labaw da haw awon mga words na malisud sabon para kanak"

"I have difficulty understanding long sentences, especially when the words are unfamiliar to me. (P5, Page 11, Table 3, Statement 16, Line 1)

Participant 11 quietly expressed his frustration and vulnerability, revealing that unfamiliar words make reading overwhelming and deepen his struggle to comprehend increasingly complex and unfamiliar passages. He expressed:

"Makalaong gaud ako na malisuday yang iban na basahonlabaw da kung bag o pa ko ikiasugatan yang word maglisuday ako pagsabot"

"I find some readings difficult, especially when they contain new words. I deeply still struggle to understand them." (P11, Page 15, Table 3, Statement 13, line 1)

Participant 12 shared his struggle with quiet difficulty, revealing that reading passages becomes challenging whenever she encounters unfamiliar words for the first time, making comprehension more demanding and overwhelming. The participant shared:

"Para kanak malisuday basahon yang mga passage na awon bag o ko na masugatan na words"

"I find reading passage with new words difficult, especially when it is my first time encountering those words." (P12, Page 15, Table 3, Statement 19, Line 3)

As I carefully attended to Participants 5, 11, and 12, I observed and felt a shared struggle reflected in their faces, voices, and gestures as they described their difficulties in reading comprehension. Participant 5 spoke in a heavy, deliberate tone, often looking downward with brief pauses that revealed frustration when dealing with long sentences and unfamiliar words, while Participant 11 expressed his thoughts in a softer, hesitant voice with occasional pauses and a faint shake of the head suggesting confusion and quiet frustration. Participant 12 appeared uneasy yet sincere, with a gentle but uncertain voice and subtle gestures that showed his struggle to articulate difficulties with new vocabulary. Across all three, I noticed recurring pauses, lowered gaze, and restrained expressions that signified cognitive strain and emotional discomfort. Despite these challenges, I also sensed their quiet determination, as vulnerability and perseverance coexisted in their efforts to express their reading experiences.

The class adviser quietly noticed the students' recurring struggle long sentences and unfamiliar words becoming small barriers that weighed heavily on each attempt to read. The English teacher expressed:

"This made me a bit worried because I wanted them to learn reading and sentence structure aligned on the competency considering their grade level." (English teacher, Page 15, Table 3, Statement 53, line 2)

As I listened to her anecdote, I noticed a quiet sense of concern in her expression, with slightly narrowed eyes as she reflected on the learners' progress. She spoke in a thoughtful, measured tone about their continued difficulty in working independently and a subtle furrow of her brow showed worry about their grammar and sentence structure. Each pause seemed careful and intentional, reflecting responsibility and deep commitment to guiding her students toward the expected grade-level competencies.

The SPED teacher confirmed this concern with a quiet sense of burden, drawing from firsthand experiences that reflect both agreement and a shared responsibility for learners striving amid persistent challenges. The SPED teacher said:

"The students' responses were basically normal since these kinds of learner are struggling readers, they tend to have longer time to learn because they lack of vocabularies despite of hearing the corrections enough." (SPED teacher, Page 16, Table 3, Statement 54, Line 5)

I picked up on a delicate sense of her expression, as I gathered her voice in quiet attention, her eyes gently reflecting the reality of her learners' struggles. Her voice carried a measured, reflective tone as she explained that the students' responses were generally expected, given that they are struggling readers. There was a faint concern in her gaze as she spoke of their extended learning time and limited vocabulary, despite repeated corrections. Each pause in her words seemed thoughtful, as if weighing both patience and responsibility. In that moment, I felt her deep awareness of their challenges and her steady commitment to their gradual progress.

Systematic integration of Duolingo in reading instruction

Duolingo served as a guided learning path, helping learners move from confusion to understanding. Its immediate feedback gently corrected mistakes without interrupting learning. Through structured practice, it gradually built skills and confidence.

Participant 2 expressed his appreciation for the repetitive practice, which reinforced his learning and deepened his understanding. The participant emphasized:

“Yang Duolingo ag ko haud haodon yang gatiyab para matigam isab ako magbasa and pronounce ng word. Tungod sian makalaong ako na awon kompyansa ko sang sarili ko na mobasa kay makahaod man ako sang Doulingo”

“I like that Duolingo repeats the lessons many times. Because of this repetition, I am able to remember the meanings of the words more easily... this helps me become more confident in reading without help.” (P2, Page 4, Table 2, Statement 1, Line 1)

Participant 8 emphasized the value of immediate corrections which helped reinforce accurate learning and improve understanding. The participant said:

“Yang Duolingo ag maghatag dayon ng correction kaung masayop ako sap ag answer. Tungod sian madali ako matigam tapos maka answer tapos madali da ako makasabot.”

“Duolingo immediately gives corrections when I make mistakes in answering. Because of that, I learn more quickly how to answer or read, and I can understand because of that guide corrections.” (P8, Page 6, Table 2, Statement 11, Line 1).

Participant 9 shared that the feedback helped him notice his mistakes and become more aware of areas needing improvement. He said:

“Yang kanag Duolingo feedback or kung ammali ako, kay maghatag ng corrections dayon sang sentence arrangement ko. Agaw mas makasabot dayon ako labaw da kung awon isab si maam na ag mohatag kanak ng tabang.”

The feedback helps me notice my mistakes. It corrects my sentence arrangement, so I understand better specially when guided also by my reading teacher.” (P9, Page 6, Table 2, Statement 12, Line 1)

Across the three participants' narratives, a shared sense of growing confidence and guided learning is evident, reflected in both their words and non-verbal expressions. As I dedicatedly heard their testimonies, Participant 8 showed calm engagement when describing Duolingo, with gentle ease as he recalled how repetition improved his pronunciation and reading; a soft smile, slight nods, and subtle forward leaning suggested quiet pride in his growing independence, with occasional hand movements that emphasized his points. Participant 2 expressed warmth and reassurance, often accompanied by a relaxed posture, small affirmative head nods, and slight shifts in seating that reflected comfort as he explained how repetition helped him remember meanings and build self-trust, showing a gradual transition toward independent reading. Participant 9 demonstrated reflective engagement, especially when discussing feedback and sentence correction, with attentive eye focus, occasional hair adjustments, and thoughtful pauses paired with nodding, indicating active processing of both Duolingo and teacher guidance in shaping clearer understanding. With these I felt the heartwarming progression where repetition, immediate correction, and guided feedback nurtured not only reading skills but also confidence, independence and emotional growth in learning.

The class adviser, with a sense of patience and quiet assurance, supported these words with thoughtful insight drawn from daily classroom experiences. He said:

“Through the hints and clues provided, the students find it easier to learn how to read and organize sentences correctly. Because of this support, they are able to study and practice independently.” (Class Adviser, Page 16, Table 2, Statement 10, Line 1)

As I attentively listened to the class adviser’s story, I sensed a quiet pride in his voice as he described the learners’ progress, his expression softening with each observation. Through the hints and clues, the student found it easier to learn how to read and organize sentences correctly, he shared, and I could almost picture the learners’ faces initially hesitant, now slowly brightening with understanding. There was a gentle shift in his expressions, from uncertainty to relief, then to a shy but growing confidence as they began to construct sentences on their own. Because of this support, he was able to study and practice independently, the adviser added and I could feel how his quiet smiles and focused eyes reflected a newfound sense of capability, as if independence was softly unfolding within him.

The English teacher, with a blend of dedication and quiet pride, proved this through careful observation and lived classroom experience. She expressed:

“From their learning in Duolingo with the guidance of their reading teacher, they were able to apply their understanding through reading passages independently. Those learning form Duolingo were applied when they take their exams because it is about reading, answer class activities.” (English Teacher, Page 7, Table 2, Statement 19, Line 1)

As I opened ears to the English teacher, I noticed her expression soften with quiet pride, her eyes gently reflecting the learners’ progress. Her voice carried a warm, composed tone that grew brighter when speaking of their growth and eased into reflection as she continued. A faint smile forming as she spoke, with a thoughtful pause in her words, as if carefully reliving each small success. In that moment, I could sense how deeply she valued their gradual improvement.

Learners' positive and negative feedback regarding the use of Duolingo as a reading instructional tool

Learners experienced Duolingo as both a gentle spark and a quiet struggle, while moments of unstable access, device limits, and streak pressure softly cast shadows that sometimes interrupted their steady learning journey and emotional flow, ultimately shaping a learning experience that was uneven yet meaningful, where progress was still possible but often dependent on external conditions, personal readiness, and sustained engagement with the scaffolding provided.

Participants 1 and 12 shared how Duolingo serves as a gentle guide through simple words and helpful hints, turning reading into a clearer and more meaningful journey.

Participant 1 positively shared an experience that Duolingo uses simple words that are easy to understand. He said:

“Yang Duolingo gagamit ng simple lang na word na madali ko lang masabtan. Agaw mahappy ako kung makabsa ako ng ako lang isa. Tungod sian ganahan ako na mobasa ng ako da isa.”

“Duolingo uses simple words that are easy for me to understand. Because of this, I feel happy and proud when I can read on my own without anyone helping me. With this, I am motivated to read again and again” (P1, page 1, table 1, statement 1, line 1).

Participant 12 enthusiastically shared an episode about how the hints helped him to understand and support learning during reading tasks. The participant expressed:

“Yang mga hints ng Duolingo yakatabang gaud kanak ng madayaw labaw da kung gakalisud ako pagbasa. Ag ko tistingan pag hula yang answer before magpili na amo yang yakatabnag kanak na mag isip gaud para makabasa.”

"The hints in Duolingo really help me when I struggle with reading because they give clues about the meaning of words. I try to guess the answer before selecting it, which helps me think carefully while reading." (P12, Page 5, Table 1, statement 8, Line 1)

As I listened his happily fulfilling voice, I noticed a quiet shift in his tone as he spoke about Duolingo. His voice softened when he described the simple words that made reading feel less intimidating, as if a burden had been lifted. When he said it was "easy for me to understand," I could sense growing confidence in his pause and expression with wide sweet smile. As he continued, his face brightened while sharing that he felt "happy and proud," especially when he could read "without anyone helping me," revealing a developing sense of independence, confidence, and self-assurance as a learner.

The SPED teacher confirmed, with calm assurance and thoughtful reflection drawn from hands-on classroom experience, that the approach significantly supported learners' engagement and understanding. She noted:

"As I observed learners... they were enjoying a lot while playing because they could imitate the words repetitively until they learn the words correctly on their own." (SPED Teacher, Page 1, Table 1, Statement 3, line 1)

As I looked into the face of the SPED teacher, her words seemed to soften, almost smiling as she spoke of the learners at play. I could picture them eyes bright, voices echoing, repeating words like a gentle song. It wasn't just fun; it was learning blooming quietly in each imitation. In that small, playful rhythm, every word they mastered felt like a tiny, precious victory unfolding right before her.

English Teacher supported with quiet satisfaction that learners were most drawn to matching-type activities, finding them engaging and enjoyable. With visible enthusiasm, the students embraced the freedom to complete tasks anytime and anywhere, growing more independent in their learning journey. The teacher expressed:

"Matching type is what they like the most. They are excited to do the task anywhere anytime independently." (English Teacher, Page 2, Table 1, Statement 12, Line 1)

As I reflected on the teacher's story, I could sense her soft smile, as if the classroom energy still lingered in every activity she recalled. In a calm yet lively tone, she described how learners lit up during matching-type tasks, their excitement almost visible in their quick responses and eager participation. As she observed them, there was a quiet satisfaction in her voice watching students take charge of their learning anywhere and anytime, gradually growing more independent with every task they complete. I, in turn, was gently swept with joy, carried by the "scented" traces of Duolingo's impact, as if learning itself had turned into something fragrant, alive, and deeply moving

On the other side, testimonies on the negative feedback on the use of Duolingo were also testified by both learners and teachers.

Participant 3 desperately shared his experience:

"Basta mahurot da streak ko moundang da ako magbisyo."

"When my streak runs out, I stop playing the game." (P3, Page 16, Table 3, Statement 48, Line 1),

Participant 9 hopelessly said:

"Basta dili ako maka answer ng activity kay mahurot yang streak ko, moundang da ako dayon pag practice, ama ng makawa ng gana dayon kung way da kanak data or load. Tapos awon pa gayud iban premium dili ko mapalit."

"Whenever I cannot answer the activity because my streak gets used up, I end up doing more practice, but I quickly lose motivation if I don't have data or load. Also, I cannot afford the premium." (P9, Page 16, Table 3, statement 50, Line 1)

Participant 6 expressed with disappointment:

"Makalagot kung gusto ko magduwa sang Duolingo kaso ag ako bawian ni mama ng selpon. Pero madyaw kay si maam ag akopabuslon ng selpon naan adtop school. "

"It feels annoying when I really wanted to play my Duolingo yet my mother gets the phone I am using. Its good my reading teacher let me barrowed her phone. (P6, Page 13, Table 3, Statement 25, Line 1)

Through the participants' narratives, I observed shared frustration and longing shaped by technological and situational limitations in their learning experiences. Participant 3 spoke in a lowered voice with a faint frown and slightly drooping shoulders as he described how losing his streak led him to stop practicing, as if his motivation faded with it. Participant 9 expressed disappointment and helplessness, his gaze mostly downward, tone soft yet heavy, and slow, uncertain hand movements as he struggled with limited data and lack of premium access that weakened his motivation. Meanwhile, Participant 6 showed visible disappointment, with slightly drawn brows and pressed lips, his voice carrying irritation mixed with gratitude as he described interruptions at home, yet his posture eased when mentioning my support for him through lending him a phone. In these moments, I felt drawn into their lived realities, seeing how external constraints and emotions shape both their engagement and persistence in learning.

The class adviser testified to the frustrations experienced by his learners, speaking with quiet concern as he recounted the challenges, they consistently face in their learning journey. He said:

"It is a bit disheartening, though, because when they keep making mistakes repeatedly, their streak runs out, and when that happens, they are unable to continue learning for the time being." (Class Adviser. Page 16, Table 3, Statement 50, Line 1)

As I reflected on the class adviser's statement, I was quietly moved by the concern in his words, showing the emotional weight behind a simple system feature. His face appeared calm yet slightly strained, with softened eyes that reflected both understanding and concern for his learners' struggles. His voice was steady but carried a subdued, burdened tone gentle and reflective, as if carefully choosing each word out of empathy. His expression revealed quiet awareness of how repeated mistakes lead learners to lose their streak and pause learning, showing how easily motivation can be disrupted by frustration. This made me realize that while gamified elements can motivate, they can also unintentionally interrupt learning and halt progress.

Learners demonstrated significant improvement in vocabulary, comprehension and decoding skills.

Learners blossomed in their learning journey, with posttest results unfolding like steady rays of progress marked by higher scores. Their vocabulary grew richer, comprehension deepened like waters gaining clarity, and decoding skills sharpened with newfound confidence and precision. This is evident as Participant 6 echoed:

"Yang transalation na mga practice amo yang yakatabang kanak na maimprove yang pagnasa ko. Bisan usahay maglisud ako pero makaya ko gihapon kay awon tabang ni maam. Agaw tungod ian makabasa ako ng ako da isa ug maksabot isab. "

"Those translation practices are what helped me improve my reading. Even though I sometimes struggle, I can still manage because Ma'am helps me. Because of that, I am now able to read on my own and understand as well." (P6, Page 1, Table 1, Statement 5, Line 1)

As I immersed myself in the participant's story, I observed that his tone shifted between hesitation and quiet confidence, softening when recalling struggles and becoming steadier as he spoke about his progress through his teacher's guidance. His arm movements were subtle and controlled, occasionally lifting slightly to emphasize key points, reflecting thoughtful engagement with his experience. Meanwhile, his eyes revealed deeper meaning—often lowered in reflection during moments of difficulty, then gradually brightening as he described his improvement, carrying a growing sense of understanding and quiet achievement as he moved toward reading independently.

The SPED teacher affirmed her story with quiet assurance, her voice carrying the calm certainty of someone who has witnessed such growth unfold in real moments of learning. She shared:

"By listening the correct words repetitively, and translation practice they could memorize the words, reading with understanding even without the guidance of the teachers." (SPED Teacher, Page 5, Table 2, Statement 4, Line 1)

Reflecting on the SPED teacher's story, I observed a quiet assurance in her expression, with calm, thoughtful eyes shaped by repeated experiences of learners gaining understanding through guided practice. Her voice carried calm conviction, highlighting how repetition and structured translation support learning over time. She explained that through repeated exposure and translation activities, learners gradually internalize vocabulary and develop reading understanding, eventually becoming more independent with less teacher guidance.

As the English teacher gently concurred with the observation, her expression carried a quiet nod of understanding, as if the insight had long been evident in the rhythm of her classroom experiences. She shared:

They were able to understand the meaning of new words that made them comprehend the idea in a sentence. (English Teacher, Page 5, Table2, Statement 9, Line 2)

As the English teacher shared her experience, her expression softened with quiet understanding her eyes thoughtful and steady, as though each word she spoke had been shaped by countless classroom moments of discovery. The room felt calm and reflective, wrapped in a gentle stillness where ideas seemed to settle slowly in the air, allowing meaning to unfold with ease. She explained that learners were able to understand the meaning of new words, which helped them grasp the idea within a sentence, and as she spoke, I could almost see the process taking form like scattered pieces gradually aligning into a clear image, revealing comprehension that once felt distant but was now slowly coming into reach.

Innovations in Duolingo Beyond Reading

Duolingo emerged as more than a tool for learning it became a small refuge of joy, where lessons turned into play, stress quietly softened, classroom moments found gentle ease and hesitant voices slowly found a companion in speaking practice.

Participants with similar experiences warmly shared how Duolingo transformed reading into a joyful journey, where learning felt less like a task and more like a moment of enjoyment and discovery, bringing relaxation and ease.

Participant 8 joyfully emphasized:

"Makalipay mag bisyo ng games sang Duolingo kay makawala ng ka stress. Dili ako malaay tapos makatigam pa gaud pagbasa"

"I enjoy Duolingo's more because they are like games, and at the same time, I am learning it makes me stress free and not bored." (P8, Page2, Table 1, Statement 9, Line 1)

Participant 10 shared a thought with excitement:

“Yang Duolingo ag maghatag ng XP rewards tapos yang kanak streak ag modaig. Mas ganahan ako magpractice kay makarela bisan ikapoy da ako ng iban na tarabahoon ko”

“When Duolingo gives XP rewards and my streak increases, I feel more motivated to practice and games relaxes me when I’m tired.” (P10, Page 2, Table 2, Statement 10, Line 1)

Participant 14 uttered with satisfaction:

“Yang ag ko ganahan sang Duolingo kay yang mga badges rewards, amo makagana kanak na magpadayon pag practice ng basa bisan awon kasamok sang room, tungod sian dili ako maboring kay awon man kanak lingaw”

“What I like about Duolingo are the badge rewards, which motivate me to keep practicing reading even during idle moments in the classroom; it has become my way of turning boredom into a meaningful and enjoyable leisure activity,” (P14, Page 2, Table 1, Statement 11, Line 1)

Participant 5 gratefully expressed:

“Yang activity na awon ag magtiyab na agko haud haudon ag ako maka sabot ng words tapos ma practice ako pagtiyab o pag pronounce agaw ya gana yang kanak pronansisyon”

“Those activities where I listen repeatedly help me understand the words, and I get to practice speaking or pronunciation, which improves my pronunciation and speaking skills.” (P5, Page 4, Statement 2, Table 2, Line 1)

As I engaged in deep and attentive listening to my participants’ shared experiences, I was gently drawn into the warmth of their voices and sincerity of their expressions, feeling a quiet sense of joy and connection with their experiences and how they perceived Duolingo as part of their learning journey. Participant 8 smiled playfully, her relaxed posture and calm voice reflecting ease and comfort, sharing that reading had become less stressful and more enjoyable, as if her burden had slowly lifted; Participant 10 showed visible excitement in his lively eyes and animated tone, his feet slightly tapping with motivation as he described how rewards and streaks pushed him to practice more and stay engaged; while Participant 14’s steady gaze and composed face reflected quiet determination, her gentle voice revealing how badges motivated her to continue reading despite challenges. Finally, Participant 5’s eyes brightened with discovery as she spoke softly, her voice carrying pride while her feet shifted lightly, sharing how audio activities helped her finally connect spoken words with written text and build confidence in reading and improved his speaking skills. In their shared reflections, I felt a soft uplift face glowing with relief, voices light with encouragement, and thoughts shaped by motivation, comfort, and growing confidence, as learning became more meaningful, engaging and alive.

As confirmation to their testimonies, the SPED teacher conveyed:

“The listening and speaking activities, along with matching-type exercises, helped improve their confidence in reading and enhanced their speaking skills. Aside from these, the learners also enjoyed their learning through games, which made the lessons more engaging, allowing them to relax, have fun, and learn in a more enjoyable and less stressful environment.” SPED teacher (SPED teacher, Page 4, Table 1, Statement 23, Line 1)

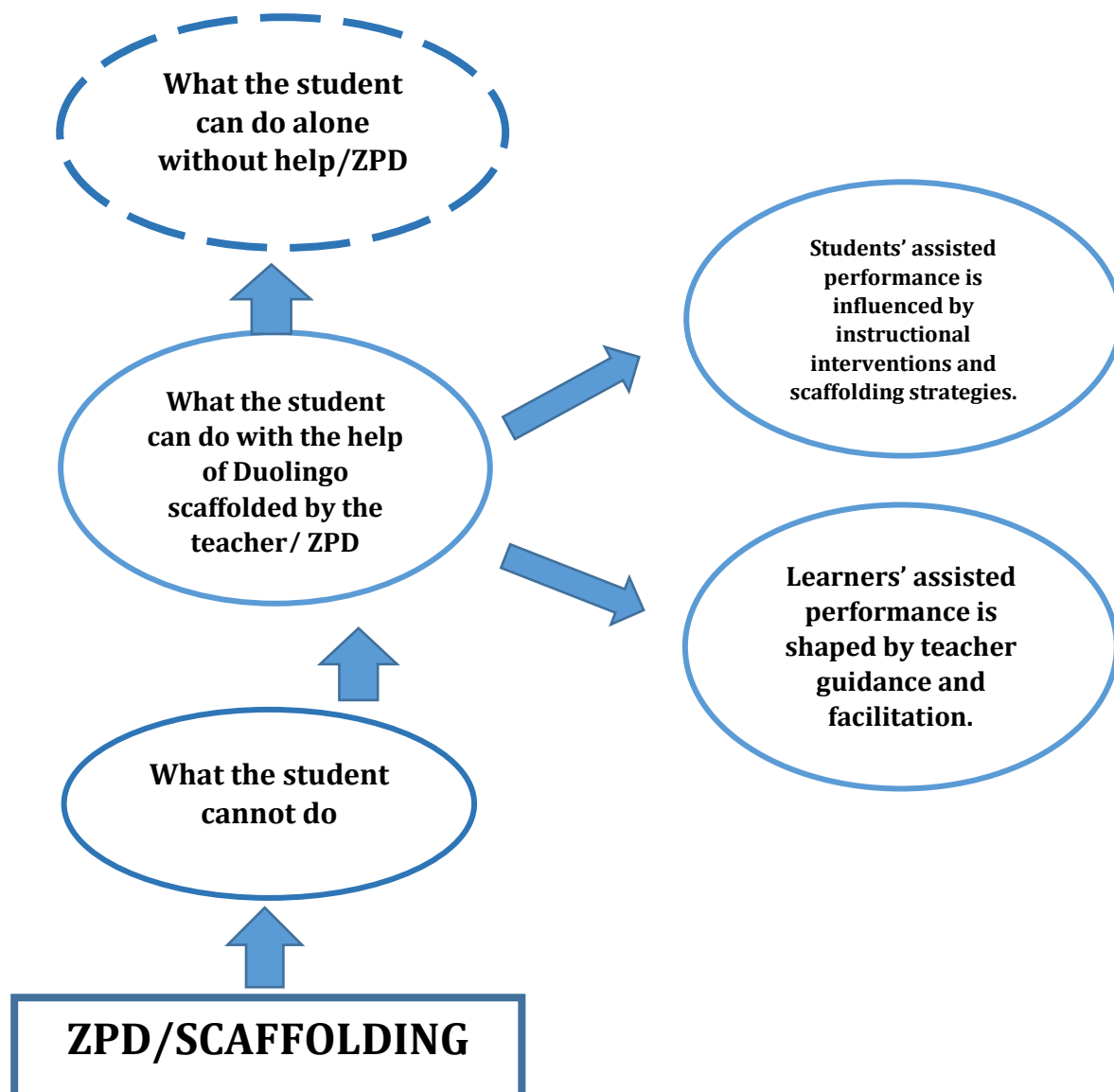
Upon engaging myself on the SPED teacher’s testimonies, I sensed a quiet enthusiasm in the teacher’s narration, as if each activity gently paved the way for both confidence and enjoyment. Her tone carried a subtle satisfaction, revealing how listening, speaking, and matching exercises steadily build learners’ reading confidence and communication skills. As she spoke, her hands moved with soft, expressive gestures, and her hair subtly followed the rhythm of her head movements, adding life to her words. A spark of liveliness appeared in her expression when she mentioned games, transforming the learning space into one that felt relaxed, engaging, and enjoyable. In that moment, I was drawn into her perspective, realizing how learning becomes more meaningful when skill-building is woven with joy.

Summary of findings

Based on the narratives of my study participants, I assert the following findings:

1. The learners baseline reading result was relatively low. Learners perceived their reading capabilities as limited in vocabulary, weak in comprehension, and difficulty in decoding texts.
2. The systematic integration of Duolingo in reading instruction involved structured, leveled tasks with guided practice, repetition and immediate feedback, which gradually reduced support to help learners move from assisted learning within the ZPD to independent reading through scaffolding.
3. The learners reported positive feedback, highlighting increased motivation, enjoyment and confidence in reading through Duolingo's gamified features, but also negative feedback that Duolingo is unreliable without stable internet access, heavily dependent on suitable devices, limited in offline functionality, restricted by premium-locked features and characterized by a streak system.
4. The learners demonstrated significant improvement in vocabulary, comprehension, and decoding skills after the intervention period.
5. Innovations in the implementation of Duolingo included recreational learning tool, stress reliever, classroom leisure strategy and speaking practice.

MODIFIED CONCEPTUAL FLOW



DISCUSSIONS

In this section, I discussed my findings. My Implication for Practice and Future direction are also presented.

Baseline reading performance and perceptions on reading capabilities among learners

Upon reflecting on my role as a practitioner-researcher, I found that my learners baseline reading result was relatively low. Learners perceived their reading capabilities as limited in vocabulary, weak in comprehension, and difficulty in decoding texts. This study aligns with the study of Foorman, Barbara R. et al. (2020), emphasizing that early deficits in decoding and word recognition significantly limit learners' ability to achieve reading fluency and comprehension. When learners struggle to process words efficiently, their overall understanding of texts becomes fragmented. In the same vein, my finding affirms Nation (2021), who presented that vocabulary knowledge plays a central role in reading comprehension. Learners with limited lexical resources often fail to construct meaning from texts, which supports the learners' perception that their reading abilities are constrained by insufficient vocabulary and weak comprehension skills. This further suggests that learners' perceptions of their reading capabilities are closely linked to their actual reading performance.

However, the current findings contrast with the perspective of Duke and Cartwright (2021), suggesting that reading comprehension is not solely dependent on decoding and vocabulary, but also involves higher-level cognitive processes such as reasoning, inference-making, and the activation of prior knowledge. This implies that reading difficulties may also stem from cognitive and metacognitive limitations beyond foundational literacy skills.

Systematic integration of Duolingo for scaffolding reading development

As I actively carried out the procedures of my study, I discovered that the integration of Duolingo in reading instruction provided structured, leveled activities with guided practice, repetition, and immediate feedback. These features gradually reduced support, enabling learners to transition from assisted learning within the Zone of Proximal Development to more independent reading. This finding, supports the study of Stockwell (2022), asserting that mobile-assisted language learning environments promote incremental skill development through adaptive tasks and continuous feedback, enhancing learner autonomy. Similarly, the present finding agrees with Hwang and Fu (2021), who emphasized that scaffolded digital learning systems improve learners' engagement and comprehension by providing structured learning pathways and interactive support, aligning with the observed improvement in learners' reading performance as they gradually became more independent and supporting the effectiveness of scaffolded digital instruction in facilitating reading development.

However, this study contrasts with the study of Selwyn (2021), who argued that digital tools alone cannot fully address learning needs, emphasizes that teacher guidance remains a crucial component in sustaining learners' understanding, motivation, and engagement. This highlights the importance of balancing technology integration with active instructional support.

Perceived Strengths and Limitations of Duolingo in Reading Instruction

My finding highlights learners' positive and negative feedback on the use of Duolingo as a reading instructional tool.

On the positive side, I found that learner's positive feedback, highlighting increased motivation, enjoyment and confidence in reading through Duolingo's gamified features. This finding aligns with the study of Huang et al. (2022), stating that gamification in language learning environments enhances learner engagement, motivation, and sustained participation by making learning more interactive and rewarding. In the same vein, my finding affirms with the study of Deterding et al. (2021), explaining that game-based learning elements such as points, rewards, and progress tracking foster positive emotional responses and strengthen learners' confidence and willingness to engage in reading tasks.

Moreover, I also noted learners' negative feedback that Duolingo is unreliable without stable internet access, heavily dependent on suitable devices, limited in offline functionality, restricted by premium-locked features and characterized by a streak system. This finding agrees the claim of Wang and Tahir (2021), reporting that while mobile-assisted language learning tools promote engagement, their effectiveness is often constrained by technological access and digital inequality. Similarly, this finding

affirms Azri and Rashdi (2023), who asserted that excessive gamification pressure and system-based rewards like streaks may lead to learner anxiety and reduced intrinsic motivation, especially when access barriers disrupt continuity of learning.

However, my finding contradicts the study of Li and Xie (2021), emphasizing that gamified language learning platforms consistently sustain motivation and reduce learning fatigue regardless of learning conditions. In my study, I observed that although gamification initially boosted motivation learners still experienced frustration and disengagement when faced with unstable access, device limitations and pressure from streak loss, suggesting that motivation in digital reading environments is highly dependent on stable access and manageable cognitive demands.

Improved reading performance after Duolingo intervention

As I closely examined the outcomes of my study, I concluded that my learners demonstrated significant improvement in vocabulary, comprehension, and decoding skills after the intervention period. This finding confirms Tong Zhu et al. (2024), who reported that there is a significant improvement in learners' reading performance after the integration of digital reading tools, as evidenced by higher posttest results compared to pretest scores. In the same manner, this finding corroborates the claim of Alqahtani (2024), stressing that technology-based reading interventions significantly enhance learners' reading skills, particularly among struggling readers, further strengthening the evidence that digital and scaffolded instructional approaches effectively support reading development.

However, the finding of the present study differs from those of Vesselinov and Grego (2021), who revealed that while learners showed improvement in language skills, there was no significant difference in the rate of progress compared to those who used more traditional learning approaches. This suggests that digital interventions may not always accelerate learning beyond conventional instruction. This indicates that while improvements in foundational reading skills are evident, the development of more complex reading abilities may require additional instructional support beyond app-based learning.

Innovations in the use of Duolingo beyond reading

As I became fully involved in conducting my study, I inferred those innovations in the implementation of Duolingo included recreational learning tool, stress reliever, classroom leisure strategy and speaking practice. Through continuous observation and interaction, I noticed that learners engaged with the platform for enjoyment and relaxation, making the learning experience more interactive and less pressured. This finding sustains the study of Reinders and Benson (2021), emphasizing that digital language learning environments can create low-anxiety conditions that promote learner engagement and autonomy. In addition, this study confirms Kazu and Kuvvetli (2024), who stated that Duolingo's game-based features enhance speaking skills by improving fluency, confidence, and pronunciation through repeated and interactive practice, confirming my current findings. On the contrary, my study disagrees with García and Esquiliche Mesa (2021), who reported that digital language learning apps are limited in developing spontaneous oral communication, as they primarily rely on repetitive drills rather than authentic interaction.

Emerging Themes

In this section, I presented emerging themes based on the gathered and analyzed data from the participants.

Leaners' assisted performance is influenced by instructional interventions and scaffolding.

In this study, I found that leaners' assisted performance is influenced by instructional interventions and scaffolding reflecting not only their developing skills but also the care, timing, and structure of the guidance they receive. With appropriate support, learners move beyond their current understanding as confusion turns into curiosity, hesitation into exploration, and uncertainty into confidence. My finding supports Fisher and Hattie (2021), who emphasized the role of structured guidance and feedback in promoting independent learning. Similarly, this finding aligns with the study of Darling-Hammond et al. (2022), emphasizing the importance of responsive teaching and scaffolding in enhancing learner engagement and supporting meaningful learning progress. In contrary, my finding argued Kirschner and Hendrick (2022), who reported that excessive guidance may hinder learner autonomy. While cautioning against over-scaffolding, the present findings demonstrate that well-structured support can effectively promote both skill development and independence.

Learners' assisted performance is shaped by teacher guidance and facilitation.

In my study, I found out that learners' assisted performance is shaped by teacher's guidance and facilitation. Through scaffolding, prompts, and structured assistance, learners are guided from uncertainty toward understanding and growth, transforming hesitation into confidence and gradually leading to independent performance and mastery. My finding, reinforces the study of Belland (2022), stating that adaptive scaffolding in complex learning environments enables learners to persist through challenging tasks while developing deeper conceptual understanding. Correspondingly, this study affirms Van de Pol et al. (2023), who revealed that contingent and responsive scaffolding strategies significantly enhance learners' achievement and self-regulation skills, as support tailored to learners' needs fosters engagement and independence. In contrast, this finding opposes the study of Kirschner and Hendrick (2022), accentuating that highly guided instruction may limit the development of independent problem-solving skills, emphasizing that excessive scaffolding can reduce opportunities for productive struggle and self-directed reasoning, which are essential for fostering learner autonomy.

Implication for Practice

Educational practitioners may maximize Duolingo beyond reading instruction by integrating it into subjects such as Science, Mathematics, ICT and Oral Communication, while also using it as a recreational learning tool to enhance learner engagement and motivation. However, its effective and sustained implementation requires reliable internet access, appropriate devices and access to premium or alternative free features. Also, educational leaders and policymakers in turn, may support this integration by allocating resources for internet connectivity and learning gadgets, alongside appropriate policies and provisions that strengthen the effective use of digital learning tools in education.

Future Directions of My Study

Future research may continue to examine and scrutinize the use and effects of Duolingo as an instructional tool. They may also develop research instruments or questions either for quantitative or qualitative approaches to gain a more comprehensive understanding of its impact on learning outcomes and learner experiences. More action researches may be pursued replicating this research in order to dig out the possible innovations for Duolingo rather than innovating the environment and external conditions of Duolingo. Web developer may look into potential innovations for Duolingo.

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