International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Development and Evaluation of E-Learn: An Electronic Strategic Intervention Material in Teaching English

Divine Grace M. Vidal[1], Annabelle N. Diaz[2]

[1]Graduate Student, Surigao del Norte State University, Surigao City
[2]Graduate Professor, Surigao del Norte State University, Surigao City

ABSTRACT

This study developed and implemented an electronic Strategic Intervention Material (E-SIM) to enhance the English performance of Grade 10 students at Magpayang National High School, particularly in addressing their least mastered competencies. The E-SIM's content, instructional quality, and technical features were reviewed by the School and District Quality Assurance teams, receiving high approval ratings and official endorsements.A quasi-experimental design involving 35 students was utilized to measure the E-SIM's effectiveness. The pre- and post-test results revealed significant improvement, with a t-value of -17.4 and a p-value of <0.001, confirming the positive impact of the E-SIM on student learning outcomes.

Result revealed that the acceptability of the E-SIM was rated "Very Satisfactory" across all dimensions: content (3.88), instructional quality with clear objectives (4.00), and technical quality, with the multimedia aspect receiving a slightly lower but still favorable rating of 3.71. Expert validators noted the E-SIM's strong alignment with DepEd standards, pedagogical requirements, and learner needs.

Furthermore, students demonstrated substantial improvement in post-test performance, validating the effectiveness of the intervention. Student feedback indicated that the E-SIM was engaging, enjoyable, and effective in promoting critical thinking, competence, and connection. Overall engagement was rated as moderate, highlighting potential areas for further enhancement to deepen student involvement and enjoyment.

Keywords: Electronic Strategic Intervention Material (E-SIM), English Performance, Quasi-Experimental Design, Instructional Quality, Student Engagement

Introduction

What was once rooted in traditional teaching methods gradually evolved into more modern approaches, where teachers made use of technology to enhance classroom instruction.As Balliu (2017) pointed out, effective teaching and learning rested on the use of sound pedagogical and methodological strategies. This held especially true for English teachers, as this study focused on the need for intervention materials that addressed students' least learned competencies.

A growing lack of interest and disengagement in learning English language and literature had become a pressing concern (De Asis et al., 2021). To respond to this, teachers looked for ways to match their strategies a to create meaningful engagement—acknowledging student efforts, celebrating small wins,

and finding ways to make learning more relatable (Rone et al., 2023).As technology becomes an integral part of our lives, incorporating digital tools into the classroom can significantly enhance both teaching and learning experiences (Dalisay, 2023).The development and evaluation of electronic strategic intervention material (SIM) plays a vital role in today's education.

It is the need for innovative instructional materials, this study aimed to develop resources that are both engaging and relevant the needs and interests of learners. Recognizing this, the Department of Education (DepEd) has introduced the Electronic Strategic Intervention Material (E-SIM) to address academic underachievement, aiming to enhance student performance in competencies that are often challenging for learners (De Jesus, 2019). These E-SIMs supplement regular classroom instruction, encouraging independent learning through interactive, competency-focused materials (Arpilleda, 2021). The SIM model, endorsed by DepEd through Memorandum No. 117 s. 2005, is designed as a remediation tool, providing tailored support to help low-achieving students meet essential competenciBy understanding these challenges and opportunities, the study contributed to the literature on electronic strategic materials in a form of validated E-learn app,a software mobile application. An innovative learning interventions to improve engagement, comprehension, and academic success across various competencies in English subject of grade 10 learners in Magpayang National High School

Review of Literature

The Evolution and Role of Electronic SIMs

Designing effective intervention materials in science and other subjects has long posed a challenge—even before the pandemic shifted the educational landscape. As Dandan (2023) notes, the growing demand from both teachers and students for tech-enhanced strategies has highlighted the value of Strategic Intervention Materials (SIMs) in bridging learning gaps. Studies like those of Cenabre (2023) affirm their effectiveness, particularly in helping low-performing learners improve mastery of the least-learned competencies.

With the shift toward electronic learning, Electronic SIMs (E-SIMs) have emerged as a DepEd-recommended approach to address academic underachievement (De Jesus, 2019). These interactive resources allow students to learn independently through engaging activities, simplified discussions, and multimedia elements (Arpilleda, 2021). Originally distributed as printed supplements, SIMs have evolved into dynamic, tech-based toolsthat align with modern education trends.

Tailoring SIMs to specific student needs has proven essential. Alboruto (2018) found that digital, personalized SIMs not only simplify complex topics but also significantly boost academic performance. Altez (2023) echoed this, showcasing how an activity-based E-SIM helped improve Grade 9 students' problem-solving skills in Mathematics using an interactive eBook format.

This evolution also reflects the shift toward collaborative, scaffolded learning, where students can progress at their own pace and interact with peers—often facilitated by digital tools (Churches, 2008). Yet challenges persist, including limited localized content and varying teacher confidence in creating and implementing E-SIMs. As cited in Flores (2022) through Souribio N. (2023), interdisciplinary learning and professional development are critical in addressing these barriers and ensuring inclusive access to quality resources.

Mobile phones, in particular, play a growing role in this electronic learning system . Lamanauskas (2020) emphasizes that mobile technology enhances communication, collaboration, and access to

resources. When integrated effectively, it supports personalized and motivated learning—though success relies on teacher readiness and systemic support.

Teaching English language and Literature

Teaching English language skills as a foreign language to young learners is not easy, many things should be considered so that the teaching can run well. Young learners are sometimes motivated in learning, but they are sometimes demotivated (Oktavia,2022, et. al).

Armea (2022) also emphasizes that language and literary competence is a crucial aspect of literature education, enabling students to interpret and understand texts beyond their literal meaning.However, despite its importance, many Grade 12 students struggle with close reading and providing textual evidence, highlighting a gap in their literary skills (Zuma, 2023). To address this, Ocampo (2021) emphasizes the need for increased practice in English to develop proficiency in reading, grammar, and writing.

Moreover, the Department of Education has implemented programs such as ECARP (Every Child a Reader Program) and DEAR (Drop Everything and Read) to foster strategic reading and writing skills among students (DepEd Order No. 50, s. 2012; DepEd Order No. 015, s. 2024). These initiatives aim to cultivate a good reading habit, which is essential for achieving literary competence.

Furthermore, literary competence itself is a multidimensional skill set that includes linguistic, cultural, genre, literary theory, and stylistic competencies, all contributing to a deeper understanding and appreciation of literary texts (Rami, 2023).

In addition, within the context of the K to 12 Curriculum, the most essential learning competencies (MELCs) focus on addressing learners' basic needs (DepEd, 2019; DepEd, 2020). Despite challenges in maintaining learning achievement, skill-based activities aligned with MELCs have shown improvements in student performance (Lumanog, 2021).

Consequently, the development of electronic strategic intervention Material (ESIM) can effectively bridge the gap in literary competence by providing interactive and personalized resources. ESIM can enhance students' practice in reading, grammar, and writing, aligning with the objectives of ECARP and DEAR. By leveraging digital tools, ESIM can help students navigate literary texts more effectively, thereby improving their literary competence and preparing them for future academic challenges. Additionally, the incorporation of mobile applications can transform traditional language education frameworks, resulting in more tailored and efficient learning opportunities Gajda, (2024).

Evaluating Learning Materials

Ifeoma (2022) emphasizes that evaluation plays a vital role in the teaching and learning process, serving as a tool for both teachers and learners to refine their methods and improve outcomes. Rather than being a mere periodic exercise, evaluation functions as a continuous process that aids in forming value judgments about students' educational status and achievements.This study also points out that evaluation extends beyond academics and becomes an integral part of life, allowing individuals to distinguish between success and failure, as well as good and bad.

Furthermore, evaluating materials can raise awareness about the importance of frameworks in developing and assessing these materials, providing deeper insights into the evaluation process(Alkahaldi, 2014). It is essential to benefit from a variety of resources and consider multiple dimensions of evaluation to achieve the ultimate goal of the teaching-learning process.

With these, the developed material in this study has been assessed fully in the process of evaluation and validation and the acceptability of the material. The learning Resources Management and Development System (LRMDS) supports the distribution and access to evaluation tool on learning, teaching, and professional development resources at various levels of the Department of Education. It includes a web-based catalog and online repository focusing on content quality, instructional quality, and technical quality (DepEd, 2009). This tool has been used by the quality assurance team in the process of electronic-learning material evaluation. On the other hand ; assessment of learning, survey forms on the level of enjoyment of the respondents has also been implemented to evaluate in terms of their enjoyment level on the use of the electronic material through the "Enjoy Scale" developed by Joseph Keebler (2022), which captures how students feel in terms of pleasure, competence, relatedness, challenge, and engagement during tech-based learning.

Moreover, holistic evaluation of learning materials involves designing artifacts that support learning, arranged in space and time to facilitate this process (Bundsgaard et al., 2011). The teaching and learning process is central to the education system, requiring systematic planning to make learning effective and meaningful. Both instructors and learners play crucial roles in this process, with teaching serving as a tool to impart understanding and skills (Shinde, 2022).These literature underscores the importance of continuous evaluation in education, the holistic approach to evaluating learning materials, and the evolving nature of educational resources to meet future demands.

Synthesis:

The literature review highlights the constantly evolving education, with technology playing an increasingly vital role in bridging learning gaps.It emphasizes the electronic strategic intervention materials (E-SIMs) as modern approach to remediation, helping students master difficult concepts through interactive digital resources (Dandan, 2023). Studies highlight their effectiveness, showing improved academic performance when tailored to individual needs (Alboruto, 2018). Similarly, literary competence is essential for deeper text analysis, yet many students struggle with reading comprehension, prompting initiatives like ECARP and DEAR to encourage strategic reading (Armea, 2022; DepEd, 2012). Electronic tools can further enhance engagement, making language and literature subject more accessible (Gajda, 2024). Meanwhile, this study ensures that evaluation on learning materials remain effective and adaptable. It's not just about measuring performance but refining teaching strategies to meet student needs (Ifeoma, 2022). Frameworks like LRMDS support quality assurance, helping educators assess digital resources for impact (DepEd, 2009). Despite their differences, E-SIMs, literary competence, and evaluation share a common goal that contributes to a student-centered approach which prioritizes engagement, personalization, and continuous improvement. As education advances, integrating these strategies will be the key to fostering meaningful learning experiences.

Theoretical and Conceptual Framework

This study was anchored on the Multimedia Learning Theory, situating the research within the context of existing knowledge and demonstrating how it contributes to or challenges current understanding. Teaching isn't just about delivering lessons—it's about creating meaningful learning experiences. Every student learns differently, and educators constantly seek ways to make knowledge stick, ensuring that lessons are not just understood but truly absorbed. One of the most powerful ways to achieve this is by integrating technology-driven, multimedia instructional materials. In today's digital age, contextualized learning tools don't just enhance comprehension—they spark curiosity, deepen engagement, and support

teachers in delivering lessons more effectively (Jimenez, 2020).This approach is Multimedia Learning Theory, recognizes that people learn best when information is presented through a mix of words and visuals. Instead of overwhelming learners with dense text or complex explanations, this theory emphasizes clear, structured, and complementary media formats—such as graphics, videos, and audio—that work together to reinforce understanding. When done right, multimedia enhances memory retention, cognitive processing, and engagement, making learning feel intuitive rather than laborious.

Multimedia Learning Theory is built on foundational concepts like dual coding theory, working memory limitations, and cognitive load theory. These principles explain how the brain processes information: when students receive content in multiple formats that support each other (like a narrated animation or interactive infographic), they're more likely to grasp complex ideas effortlessly. Research has shown that multimedia-based lessons outperform text-only instruction in fostering deeper understanding (Ramlachan, 2019).

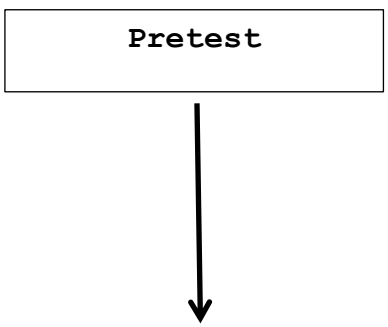
In the context of electronic strategic intervention materials for teaching English, this theory guides the development of engaging, tech-driven learning experiences. By blending audio-visual elements, interactive activities, and adaptive technologies, educators create materials that do not just transfer knowledge.They also bring lessons to life. These resources help students feel more connected to the material and make learning feel natural, interactive, and enjoyable.But it is not just students who benefit—teachers thrive in environments where multimedia tools empower them to innovate and adapt their lessons. When educators have access to engaging and well-designed learning materials, teaching becomes more fulfilling, more creative, and more impactful.

By grounding this study in Multimedia Learning Theory, we emphasize that education is not just about delivering information; it is about making connections, sparking curiosity, and building engaging learning spaces. Through technology-driven, human-centered instruction, both learners and educators can experience more intuitive, dynamic, and effective learning journeys.

Conceptual Framework

The conceptual framework shows the underlying concepts of this study which delineates the learning process through electronic strategic intervention material. The display of technical management skills by the researcher on development of learning resources, instruction, communication, assessment, discipline and rewards for learners.

When all this variables properly implemented , productive effort cannot be far behind and to which E-SIM strategy will ultimately designed or framed. To illustrate the direction of the study , figure 1 presents the schematic diagram.As reflected on the illustration, the study will use the ADDIE instructional design method.



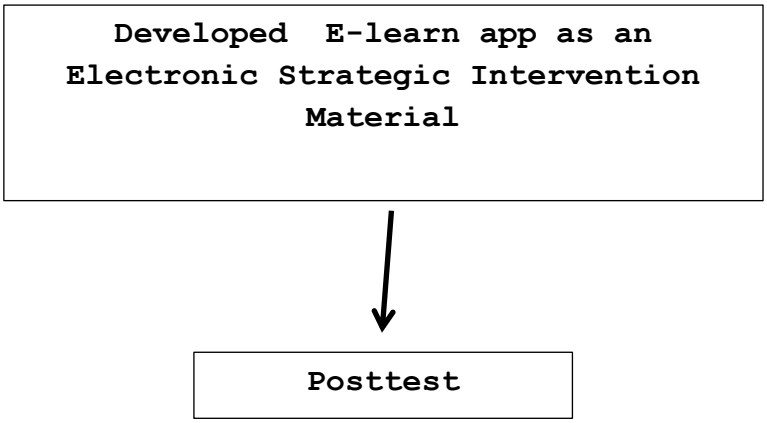


Figure 1. Schematic Diagram

Statement of the Problem

This study determined the effectiveness on the conduct of the developed Electronic Strategic Intervention Material to the Grade 10 students of Magpayang National High School in Magpayang, Mainit Surigao Del Norte during the school year 2024-2025.

Specifically, it sought to answer the following questions:

1. What are the pre-test scores of the students in the third quarter exam in English?
2. What is the acceptability level of E-Learn in terms of

a.) Content Quality, b.)Instructional Quality, and c.)Technical Quality?

3. What are the post-test scores of the students after using the E-Learn?
4. Is there a significant difference on the pre-test and post-test scores of students?
5. **5**. What is the level of enjoyment of the students after using E-Learn in terms of a.)pleasure, b.) relatedness,c.) competence , d.) challenge, and e.) engagement?

Hypothesis

At o.5 level of significance, it is hypothesized that:

HO: There is no significant difference in the performance of the Grade 10 students in English, as measured by their pre-test and post-test scores, before and after the use of E-learn, the developed Electronic Strategic Intervention Material.

Research Methodology

Research Design

A developmental research design was employed in this study to guide the structured creation and evaluation of the Electronic Strategic Intervention Material (E-SIM) for Grade 10 English. This design was deemed appropriate as it allowed the researcher to determine and assess the effectiveness of the material in improving students' least learned competencies.

Furthermore, this study made use of the ADDIE instructional design framework in determining the acceptability level and effectiveness of the target material which is the E-Learn app.Specifically it made use of the following phases: Analysis,Design , Development, Implementation , and Evaluation.

Research Environment

The study was conducted in the District of Mainit I, Municipality of Mainit, Division of Surigao del Norte, with a particular focus on Magpayang National High School. The experimental research involved Grade 10 students from Section Topaz during the 2024–2025 academic year.This institution was purposefully chosen as the study locale to facilitate a comprehensive and focused assessment of the material's pilot testing. Moreover, its proximity to the researcher's workplace ensures accessibility, reducing logistical challenges and financial constraints while allowing for more efficient data collection and observation.

Respondents

This study involved 35 officially enrolled Grade 10 section Topaz students of Magpayang National High School during the school year 2024–2025 . These students were carefully chosen for their ability to meet the requirement. The consistent access to mobile devices, which was essential for their participation in this quasi-experimental research.

Each student either owned a mobile phone or had access to at least one within their household, ensuring they could fully engage with the E-Learn app. This accessibility allowed them to explore digital learning without major obstacles, creating a smooth and inclusive experience. By selecting this group, the researcher aimed to foster an environment where students could meaningfully interact with the study material, maximizing engagement while ensuring reliable and insightful data collection.

Research Instrument

This study primarily focused on the development of an electronic strategic intervention material (E-SIM). Since the material is designed as an intervention tool, the teacher first identified the respondents' least-learned competencies through the third-quarter exam and item analysis in English 10 before proceeding with its design and development.

The researcher carried out the design and development process. The content was crafted using various learning resources, including DepEd learning materials, books, YouTube, and other online sources. During the layout design phase, the teacher-researcher utilized Canva, Microsoft Word, and Microsoft Publisher. Afterward, the hard copy was sent to a programmer for conversion into an electronic material.

Results and Discussions

The development process covers five key phases: Analysis, Design, Development, Implementation, and Evaluation. During the Analysis Stage, item analysis from the third quarter exam was conducted to pinpoint the least mastered competencies. This step deepened the researcher's journey to craft a meaningful and responsive tool. After identifying the least learned competencies, the development and validation of the electronic SIM were anchored on the ADDIE Model. The study followed all five stages of the model: (1) Analysis, (2) design, (3) Development, (4) Implementation, and (5) Evaluation. During the Analysis Stage, the researcher reviewed the learning competencies and gathered data on the least learned areas based on the learners' academic performance on third quarter. The process was conducted through item analysis on the result of the third quarter exam. Through this phase, the researcher got more inspired on the making of an intervention material. Next is the Design Stage, this is the stage where the researcher conceptualized target features and content of the application. It involved selecting specific topics and design to be integrated within each targeted competencies. The researcher uses

DepEd learning resources, online materials and explore other researchers' and teachers' work as target of inspiration. In the Development Stage. During this phase, decisions were made regarding the materials, format, and overall structure of the intervention material. The researcher utilized Canva and Microsoft Office applications to craft the initial draft of the complete material. Following this, both soft and hard copies were submitted to a designated programmer, who served as the expert in converting the intervention material into its electronic format.

This process was subsequently followed by an evaluation and critique conducted by the public school and district quality assurance teams, using DepEd's Quality Assurance Tools for non-print materials. The purpose of this step was to ensure the material's validity and acceptability prior to its implementation.

The Implementation Stage involved administering the electronic SIM to the experimental group, accompanied by pretests and post-tests to assess its impact and effectivity.

Finally, in the Evaluation Stage, the researcher assessed the effectiveness of the digital SIM through the pre-test and post test scores of the respondents. In addition, the respondents were also given a material to assess their level of enjoyment and comfort on the use of the electronic intervention material or E-learn.

The discussion of results is based on the problem posted in Chapter 1.

A. Acceptability Level of the Developed material

Table 1. Content Quality

Mean	SD	Qualitative Description
39.4	0.78	Passed/Very Satisfactory

Legend: 1-1.74 – Not Satisfactory; 1.75- 2.49 – Poor; 2.5- 3.24 – Satisfactory; 3.25-4 – Very Satisfactory

A. Acceptability Level of the Developed material

The validators' ratings on the content quality of the developed Digital Strategic Intervention Material reveal a consistently very satisfactory evaluation across all criteria.In the study of De Jesus (2019) and Arpilleda (2021),it emphasized that E-SIMs help in mastering least-learned competencies and provide structured, standards-aligned content. This supports the validators' high ratings for content alignment, relevance, and accuracy. The material was rated highest (mean score of 4.00) for its alignment with the DepEd learning competencies, accuracy, promotion of critical thinking, relevance to real-life situations, appropriate language level, and support for positive values, indicating strong content validity and suitability for the Grade 10 learners. Slightly lower, yet still very satisfactory, scores were given for the currency of the content (mean 3.88), logical organization (mean 3.71), and freedom from cultural or bias issues (mean 3.86), reflecting minor areas for refinement but overall sound development. The overall mean score of 39.4 with a low standard deviation of 0.78 confirms a high level of agreement among validators that the content is well-developed, accurate, relevant, and supportive of learning objectives, making it a reliable and effective resource for student enrichment and mastery.

Table 2. Instructional Quality

Over all Mean	SD	Qualitative Description
38.7	1.38	Passed/Very Satisfactory

Legend: 1-1.74 – Not Satisfactory; 1.75- 2.49 – Poor; 2.5- 3.24 – Satisfactory; 3.25-4 – Very Satisfactory

In this factor, the validators' ratings on the instructional quality of the Digital Strategic Intervention Material indicate a very satisfactory level of effectiveness in facilitating learning. The material was praised for clearly defining its purpose and successfully achieving its intended goals, both receiving a mean score of 3.86. Learning objectives were rated perfectly clear and measurable, with a mean of 4.00, reflecting strong instructional design. The level of difficulty was deemed appropriate for Grade 10 students, ensuring accessibility without compromising challenge.According to Ramlachan (2019), Multimedia Learning Theory enhances cognitive engagement through structured visual and textual materials. This reinforces the finding that the SIM was effective in defining clear objectives, measurable outcomes, and engaging activities. In this material, visual and auditory elements such as graphics, colors, and sounds were effectively used for instructional purposes, though with slightly lower scores (3.71), suggesting room for enhancement in multimedia integration. The material was also found to be enjoyable, stimulating, and engaging, and it effectively encouraged creativity among learners. Feedback mechanisms were rated positively, supporting interactive learning. Additionally, the material allowed users to control the pace and sequence of their learning, and instruction was well integrated with learners' prior knowledge, both scoring a perfect 4.00. The overall mean score of 38.7 with a standard deviation of 1.38 confirms strong consensus among validators' that the instructional quality of the material is well-designed to promote effective and engaging learning experiences.

Table 3. Technical Quality

Mean	SD	Qualitative Description
50.4	2.23	Passed/Very Satisfactory

Legend: 1-1.74 – Not Satisfactory; 1.75- 2.49 – Poor; 2.5- 3.24 – Satisfactory; 3.25-4 – Very Satisfactory

The validators' ratings on the technical quality of the Digital Strategic Intervention Material reflect a very satisfactory level of performance across all assessed indicators. Audio elements, including narration and speech clarity, received perfect scores (mean of 4.00), indicating that the pacing, intonation, and pronunciation effectively enhance learners' understanding. Synchronization between audio and visuals was also rated highly (3.86), ensuring a cohesive multimedia experience. The use of music and sound effects was deemed appropriate and supportive of instructional goals. Visual displays, both text and non-text elements, were praised for being clear, aesthetically pleasing, and effective in sustaining user interest without causing distraction.

The visuals accurately represented the concepts discussed, further aiding comprehension. User support materials and navigation design were rated very satisfactory, highlighting the material's ease of use and learner autonomy. The material was also noted to operate well on minimum system requirements, though with slightly lower scores (3.57), indicating some room for improvement in technical optimization. Similarly, the program was mostly free from technical problems but could benefit from further refinement to enhance stability.Alboruto (2018) highlighted the importance of tailoring SIMs to learners' needs, including the technical presentation for better comprehension. This explains the very satisfactory ratings on visuals, audio clarity, and ease of navigation. Overall, with a total mean score of

50.4 and low variability, the technical quality of the material is robust, providing a reliable and user-friendly digital learning environment for Grade 10 students.

Table 4. Overall Acceptability

	Mean	SD	Qualitative Description
Acceptability	50.4	2.23	Passed/Very Satisfactory

Legend: 39 – 45 – Satisfactory; 46-52 – Very Satisfactory

The validators' rating on the overall acceptability of the developed Digital Strategic Intervention Material indicates a very satisfactory level of approval, with a mean score of 50.4 and a low standard deviation of 2.23. This high mean score reflects a strong consensus among the evaluators that the material meets the standards of quality across all assessed dimensions-content, instructional, technical, and other relevant factors. The low variability in responses suggests consistent positive perceptions regarding the material's effectiveness, usability, and relevance for Grade 10 students. Overall, the Digital Strategic Intervention Material is deemed highly acceptable and suitable for implementation, demonstrating its potential to significantly enhance the learning experience in the targeted educational setting.

The validators' ratings from Table 1 through Table 5 collectively demonstrate that the developed Digital Strategic Intervention Material (SIM) is highly acceptable and effective across multiple dimensions. In terms of content quality, the material was rated very satisfactory for its alignment with DepEd competencies, accuracy, relevance, and promotion of critical thinking, reflecting a well-structured and meaningful learning resource. Instructionally, the SIM excelled in clearly defined purposes, measurable objectives, appropriate difficulty level, and engaging activities that stimulate creativity and learner autonomy. The technical quality was also rated very satisfactory, highlighting clear narration, synchronized multimedia elements, user-friendly navigation, and minimal technical issues, ensuring an accessible and smooth digital experience. Additional findings further supported the material's overall effectiveness, with perfect agreement among validators on supplementary aspects such as learner engagement and usability. Consequently, the overall acceptability rating confirms strong consensus that the SIM is a reliable, well-designed, and practical educational tool suitable for Grade 10 students. These results align with similar studies where validated SIMs received very satisfactory ratings for content, instructional design, and technical features, underscoring the material's potential to enhance learning outcomes and support diverse learner needs effectively.

B. Implementation

Table 5. Pretest and Post-test Scores of the Students

Test	Mean	SD	t**	df	p *	Remark
Before(PRE-TEST SCORES)	2.29	2.07	-17.4	34	< .001	Significant
After(POST-TEST SCORES)	7.94	2.42				

**Significant at p < 0.05 level of significance*

*** Paired-samples t-test*

The paired-samples t-test results in Table 4 reveal a statistically significant difference between the pre-test (mean = 2.29, SD = 2.07) and post-test scores (mean = 7.94, SD = 2.42) of students after using the

E-SIM. The large negative t-value (-17.4) and extremely low p-value (< .001) indicate that the students' scores improved substantially after exposure to the material. The mean post-test score (7.94) is over three times higher than the pre-test score (2.29), demonstrating a marked increase in knowledge or skill mastery. The low standard deviations (SDs) for both tests suggest relatively consistent performance across the student group, with post-test scores showing slightly more variability.

This result affirms the findings of Alboruto (2018) and Dandan (2023), who both reported that strategic and electronic intervention materials are effective in improving students' grasp of least-mastered competencies. The improvement supports the integration of technology-based instruction in promoting academic success, particularly when content is interactive and competency-focused.

Grounded in the Multimedia Learning Theory (Ramlachan, 2019), the E-SIM's design—which combines visual, textual, and auditory elements—likely enhanced students' comprehension by reducing cognitive load and increasing engagement. This approach aligns with contemporary learning principles, making the material more accessible and effective.

The relatively low standard deviations suggest consistency in performance gains among learners, highlighting the tool's inclusivity. As emphasized by Kabaran (2021), digital learning materials that are well-designed can provide equitable learning opportunities and accommodate various learning styles.

The E-SIM has proven highly effective in elevating student performance, making it a valuable resource for educators aiming to improve learning outcomes in similar educational settings.

Table 6. Students' Level of enjoyment in using E-SIM

Factors	Mean	SD	Remark
Pleasure	3.81	0.7	Agree
Relatedness	3.89	0.8	Agree
Competence	3.9	0.6	Agree
Challenge/ Improvement	4.01	0.5	Agree
Engagement	3.21	0.7	Neither Disagree nor Agree
Over all Result	3.764	0.66	Agree

Legend: 1-1.79 – Strongly Disagree; 1.8-2.59 – Disagree; 2.6 – 3.39 – Neither Disagree nor Agree; 3.4 – 4.19 – Agree; 4.20-5 – Strongly Agree

As highlighted in the table, this study also explored how much students enjoyed using the mobile app. Overall, learners expressed positive feelings across various dimensions of the enjoyment scale, though their engagement levels appeared more moderate. This aligns with Lim's (2023) observation that educational apps tend to be most effective when they strike a healthy balance between ease of use and instructional challenge. In this case, the slightly lower engagement scores may have stemmed from factors like navigation flow or the clarity of instructions—areas that still require fine-tuning. To measure this experience meaningfully, the study applied the "Enjoy Scale" developed by Joseph Keebler (2022), which captures how students feel in terms of pleasure, competence, relatedness, challenge, and engagement during tech-based learning.

Within the Pleasure factor, students rated "The activities were enjoyable" the highest (mean = 4.06), indicating strong enjoyment of the learning tasks themselves. The lowest mean was "The electronic SIM

was fun to use" (mean = 3.6), though this still falls within the "Agree" range, suggesting that while the digital format was generally liked, it was slightly less enjoyable than the activities themselves. The overall mean for Pleasure is 3.81, reflecting a positive and pleasurable experience with the E-SIM. Insight: These results suggest that the content and design of the activities are effective in capturing students' interest and providing enjoyment, but there may be opportunities to make the digital interface even more engaging.

For Relatedness, the highest rated indicator was "I enjoyed working with my classmates" (mean = 4.03), showing strong appreciation for the collaborative aspects of the E-SIM. The lowest mean was "I felt close to my classmates" (mean = 3.6), which, while still positive, indicates that the activities fostered more enjoyment in working together than in building deeper connections. The overall mean for Relatedness is 3.89, signifying that the E-SIM successfully promoted a sense of cooperation and social interaction. Insight: The E-SIM effectively encourages teamwork and social learning, though future enhancements could focus on activities that further strengthen peer relationships.

In the Competence factor, "I felt like I was good at the activities" had the highest mean (4.06), suggesting students felt confident and successful while using the E-SIM. The lowest mean was "I felt very skilled at the activities" (mean = 3.74), indicating that while most students felt competent, some may have experienced minor challenges. The overall mean for Competence is 3.9, reflecting a generally high level of self-efficacy among students. Insight: The E-SIM is effective in building students' confidence and sense of mastery, but providing additional support or scaffolding could help those who feel less skilled.

The Challenge/Improvement factor stands out with "The learning activities challenged me" receiving the highest mean of 4.54, the strongest agreement across all factors, indicating that students found the tasks stimulating and appropriately demanding. The lowest mean was "During the activities, I tried to improve my performance" (mean = 3.77), still positive but suggesting not all students were equally motivated to self-improve. The overall mean for this factor is 4.01, the highest among all factors. It aligns to the study of Popp et al.(2023) and Yaccob (2022) where it highlighted that gamification and interactive features in E-SIMs increases motivation and learners' satisfaction, particularly in challenge and competence—factors. These proves that E-SIM excels at providing challenging content that motivates students, which is crucial for engagement and growth; however, integrating more explicit goal-setting or self-reflection activities may further enhance students' drive for improvement..

For Engagement, the highest mean was "When I was using the E-SIM, I was focused" (mean = 3.74), showing that students generally maintained attention during activities. The lowest mean was "I forgot what I was supposed to do" (mean = 2.8), indicating some students experienced confusion or lapses in engagement. The overall mean for Engagement is 3.21, the lowest among all factors, suggesting moderate engagement overall. Insight: While students were mostly attentive, the findings highlight a need to enhance clarity of instructions and perhaps introduce more interactive or immersive elements to sustain focus and reduce confusion throughout the E-SIM activities.

Overall, students genuinely expressed that they are very much enjoyed using the E-Learn app as shown by high mean ratings across four out of five factors: pleasure (3.81), relatedness (3.89), competence (3.90), and challenge/improvement (4.01)—all falling within the "Agree" range based on the scale used. Many students shared that it made learning more fun, meaningful, and confidence-boosting. It made them feel more capable, especially with the challenge factor receiving the highest score of 4.01. Among all the aspects, this stood out as the most appreciated, showing that students were motivated to think and

improve.It connects to the statement of Churches (2008) in Bloom's Digital Taxonomy where it emphasizes that digital learning tools with the findings on student enjoyment.

However, the engagement factor received a slightly lower mean of 3.21, indicating that while the overall experience was positive, there is room for growth—particularly in providing clearer instructions and increasing interactivity to help students stay more focused during activities. Nevertheless, the overall mean scores place the E-Learn app within the "Very Satisfactory" category.The term "Very Satisfactory" is considered "very acceptable″ because it reflects a consistently high level of performance that goes beyond basic expectations which is highly acceptable. This rating suggests that the tool not only met educational expectations but also contributed meaningfully to the students' learning journey, making it a commendable resource in promoting the integration digital education.

Recommendations

Based on the findings and conclusions, the following recommendation recommendations are offered:

1. Develop and utilize targeted intervention tools to address students' learning gaps, particularly in areas where they initially demonstrate limited understanding of key competencies.
2. Integrate the E-SIM into regular instruction for Grade 10 English, as it has proven to meet DepEd standards in terms of content accuracy, instructional value, and effective multimedia design.
3. Adopt electronic tools like E-SIM to enhance student mastery of complex topics, as evidenced by the significant improvement in post-test performance after its implementation.
4. Use evidence-based validation to ensure that instructional materials truly support student learning. This reinforces the importance of grounding digital innovations in research, so they're not just engaging—but genuinely effective in improving academic performance.
5. Design learning experiences that promote enjoyment and engagement, taking inspiration from E-Learn's success imotivating students through challenges, collaboration, and interactive features.

References

1. **Alboruto, V.** (2018). Efficacy of using mobile applications in teaching Grade 8 science, S.Y. 2017–2018. https://bit.ly/3I2WCTz
2. **Alkhaldi, A.** (2014). Developing a principled framework for materials evaluation: Some considerations. https://bit.ly/43OvP66
3. **Altez, F.** (2023). Activity-based E-SIM: Its impact on the problem-solving skills of Grade 9 students. https://bit.ly/4ldGOM8
4. **Armea, A. P.** English proficiency and literary competence of English major students: Predictor for effective language and literature teaching. https://bit.ly/3FXeUoS
5. **Arpilleda, A. J.** Strategic intervention material: A tool in enhancing Grade 9 students' mathematical performance. https://bit.ly/449myEy
6. **Balliu,V.** ,et al. (2017) Modern Teaching Versus Traditional Teaching- Albanian Teachers Between Challenges and Choices https://bit.ly/4l9MerS
7. **Bruner, J.** Bruner's theory of constructivism. https://bit.ly/3HNlMWs
8. **Bundsgaard, J**., et al. (2011). Evaluation of learning materials: A holistic framework. https://bit.ly/3HR64tf

9. **Churches, A.** (2021). Bloom's digital taxonomy. https://bit.ly/4kRW2a2
10. **Cordova, R. C**., et al. (2019). Effectiveness of competency based strategic intervention materials in English 7. https://bit.ly/4n95Xth
11. **Dalisay, M.** (2023). Design and evaluation of electronic strategic intervention material (E-SIM). https://bit.ly/4kRhyM5
12. **Dandan, B.** (2023). E-SIM in Science 9: An aid to improve online learning performance. https://bit.ly/3TwG352
13. **De Asis**, et al. (2021). Factors causing demotivation in learning English in the University of Eastern Philippines. https://bit.ly/3Tw9VOV
14. **De Jesus, R. G.** (2019). Improving the least mastered competencies in Science 9 using "Pump It Up!" E-SIM. https://bit.ly/4k3yBJF
15. **Del Pilar III, F. T.**, et al. (2024). Digital learning breakthrough: E-SIMs for improved academic performanc in English 9. https://works.hcommons.org/records/qmyzj-27803
16. **Gajda, K.** (2024). Integration of language learning mobile application in university programs. https://files.eric.ed.gov/fulltext/ED659940.pdf
17. **Hein, G. E.** (1991)Constructivist learning theory. http://beta.edtechpolicy.org/AAASGW/Session2/const_inquiry_p aper.pdf
18. **Ifeoma, E. F.** (2022). The role of evaluation in teaching and https://bit.ly/44KEw1G
19. **Jeminez, E.** (2020). Motivating factors of teachers in developing supplementary learning materials. https://bit.ly/45S5RQK
20. **Kabaran, G.** (2021). Evaluation of a digital materials development program via Kirkpatrick's model. https://files.eric.ed.gov/fulltext/EJ1312536.pdf
21. **Keebler,C M**.,et al. (2022)The Development and V elopment and Validation of a Univ alidation of a Universal Enjo ersal Enjoyment Measure: The Enjoy Scale https://bit.ly/4erhsrW
22. **Laşcu, T.** (2023). Developing discourse competence through literary texts. https://files.eric.ed.gov/fulltext/EJ1400747.pdf
23. **Lamanauskas, V.** et al. (2020), use of mobile technology in the teaching/learning process: opportunities and barriers https://bit.ly/3gsxu8n
24. **Lim, V. F.** (2023). Apps for English language learning: A systematic review. https://files.eric.ed.gov/fulltext/EJ1417825.pdf
25. **Ocampo, D. M**., et al. (2022). English proficiency and literary competence of English major students. https://files.eric.ed.gov/fulltext/ED620161.pdf
26. **Oktavia,B.** et al. (2022). Challenges and Strategies Used by English Teachers in Teaching English Language Skills to Young Learners
27. **Popp, T. B**., et al. (2023). Gaming elements in e-learning platforms: A literature review. https://files.eric.ed.gov/fulltext/ED636608.pdf
28. **Rami, Z.** (2023). The concept of literary competence: Unveiling the art of interpretation.https://www.researchgate.net/publication/374152099_The_Concept_of_Literary_Competence_The_Concept_of_Literary_Competence_unveiling_the_Art_of_Interpretation_with_Examples?utm_so urce=chatgpt.com#full-text

29. **Ramlachan, M.** (2019). Multimedia learning theory and instructional design. https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1002&contextinstructional_message_design
30. **Rone, N. A.**, et al. (2023). How to motivate students who lack interest and participation. https://www.researchgate.net/publication/369370919_Student_Lack_of_Interest_Motivation_in_Learning_and_Classroom_Part icipation_How_to_Motivate_Them
31. **Rosal, G. M.**, et al. (2022). Improving Grade 11 chemistry learning through E-SIM. https://files.eric.ed.gov/fulltext/ED625627.pdf
32. **Santosa, M. H.**, et al. (2022). Gamification in English teaching for 21st-century learners. https://files.eric.ed.gov/fulltext/EJ1348961.pdf
33. **Shindee, S.** (2022). Importance of evaluation in the teaching- learnin process. https://oaji.net/articles/2022/1201- 1670914970.pdf
34. **Smith, J. S.**, et al. (2016). Accessibility of K–12 digital materials: Tools for educators. https://files.eric.ed.gov/fulltext/EJ1118558.pdf
35. **Souribio, C. N.** (2023). Rajah's Quest: A gamified assessment of English 8 competencies. https://files.eric.ed.gov/fulltext/ED628097.pdf
36. **Yaccob, S. N.**, et al. (2022). Gamified teaching in ESL classrooms. https://files.eric.ed.gov/fulltext/EJ1362665.pdf
37. **Zuma, S. H.**, et al. (2023). Impediments to literary competence among Grade 12 EAL learners. https://bit.ly/44psyZV