



Developing Interactive Learning Media by Using Genially for Students' Reading Comprehension

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ABSTRACT

Reading comprehension is an important skill in English learning, but Grade X students may experience difficulties in understanding English texts, particularly in identifying the main idea, finding specific information, understanding unfamiliar vocabulary, identifying relationships between information, and making inferences. This study aimed to develop interactive learning media by using Genially for Grade X students' reading comprehension. The study employed a Research and Development (R&D) design adapted from Borg and Gall, consisting of six stages: gathering information and data, analyzing data, designing materials, validation by expert, revising materials, and final product. The data were obtained from a needs-analysis questionnaire administered to 30 Grade X students and a semi-structured interview with an English teacher at SMA Santo Yoseph Medan. The questionnaire was organized based on Hutchinson and Waters' framework of necessities, lacks, wants, and learning needs. The findings showed that students needed support in several reading comprehension skills and wanted clear explanations, vocabulary support, interactive activities, visual materials, and feedback. Based on these findings, the researcher developed "Reading Adventure: Unlock the World," an interactive Genially-based learning media containing five reading destinations, reading texts, comprehension activities, interactive navigation, visual materials, feedback, reward numbers, and a final challenge. Expert validation resulted in a score of 75 out of 92, or 81.52%, and the media was categorized as "Appropriate." The product was then revised based on the expert's suggestions to produce the final version.

Reading Comprehension, Interactive Learning Media, Genially, Research and Development, Needs Analysis

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INTRODUCTION

Reading comprehension is an important component of English learning because students need to understand written information, identify important ideas, connect information, and construct meaning from texts. Reading is not simply the process of recognizing words or sentences; it requires readers to

coordinate several processes in order to understand the meaning of a text. Grabe and Stoller (2020) explain that reading involves multiple processes and component skills that work together to support comprehension. Similarly, Koda (2005) describes comprehension as a process of constructing meaning through the interaction between the reader and the text. For English learners, this process can be challenging because students need to process the English language while simultaneously interpreting information and connecting ideas. Difficulties may occur when students encounter unfamiliar vocabulary, have difficulty identifying the main idea or specific information, fail to recognize references, or cannot make appropriate inferences from a text.

The importance of addressing these difficulties is evident in the classroom context of the present study. Preliminary information obtained at SMA Santo Yoseph Medan indicated that some students experienced difficulties in understanding English texts. An English teacher explained that students could sometimes read the words in a text but did not necessarily understand what the text was about. The teacher further identified difficulties in finding the main idea, locating specific information, and understanding unfamiliar vocabulary. In classroom reading activities, students commonly used textbooks or school materials, read the texts, and answered comprehension questions, while the teacher explained difficult parts when necessary. These conditions indicate that students needed additional learning resources that could provide structured support while they interacted with English reading texts.

Interactive digital learning media provides one possible way to provide such support. Learning media can present instructional content, support learning activities, provide opportunities for learner participation, and facilitate feedback. In particular, interactive media can allow students to respond to learning content rather than only receive information. Domagk, Schwartz, and Plass (2010) conceptualize interactivity through learner actions, system responses, learner choices, navigation, and interactive learning activities. These characteristics are relevant to reading comprehension because students can be given opportunities to navigate learning materials, interact with reading texts, answer comprehension questions, and receive feedback. Multimedia learning principles are also relevant to the presentation of reading materials. Mayer (2020) emphasizes the importance of organizing words and visuals in ways that help learners process multimedia information. Therefore, an interactive reading medium should not only contain digital texts but should also organize visual and interactive elements in a manageable form.

Genially is one digital platform that can be used to organize these elements into interactive learning materials. It allows learning content to

incorporate text, images, animations, multimedia, navigation, and interactive elements within a digital resource. Recent studies have demonstrated its potential in English learning. Tampubolon, Siagian, and Saragih (2025), for example, developed Genially-based interactive multimedia for junior high school English learning. Their product incorporated descriptive-text materials with animations, games, quizzes, and videos, and the study reported high feasibility and practicality of the developed media. Sabrina, Herlina, and Hasanah (2025) developed Genially interactive multimedia based on guided reading for fifth-grade English learning. Their study used the 4D development model and focused on the feasibility of a guided-reading-oriented product. Marianti, Permatasari, and Zulhafizh (2025) similarly developed Genially-based interactive media for descriptive-text learning and reported an average expert-validation result of 91%, indicating the potential of Genially for developing structured English learning media.

Studies focusing more directly on reading comprehension also demonstrate the relevance of Genially. Hidayat, Napitupulu, and Simbolon (2025) examined student perceptions of Genially-based learning media integrated with Problem-Based Learning for English reading comprehension. Their study focused on students' perceptions of a developed product rather than on the complete needs-based development process. Salsabila and Afandi (2026) developed interactive REACT media using Genially to support reading comprehension, demonstrating another application of Genially in reading-related instruction. Rahayu, Novita, and Sukmanasa (2026) also developed a Genially-based digital Snakes and Ladders game for reading comprehension using the ADDIE model. Their product emphasized a specific game format and was examined through development and effectiveness procedures. In addition, Lala Sanguano and López García (2025) investigated the implementation of Genially activities for reading comprehension among second-year high school students, reporting that the activities supported participation and reading-related learning experiences.

Although these studies establish the relevance of Genially for English learning and reading comprehension, differences remain in their research focus, participants, product characteristics, and development procedures. Some studies concentrate on particular text types, such as descriptive texts; others use a specific instructional approach, such as guided reading or Problem-Based Learning; while others develop a particular game format. The development procedures also vary, including ADDIE, 4D, and other development models. More importantly, the existing studies do not specifically focus on developing a general interactive reading-comprehension learning resource for Grade X

students in which the content and interactive features are determined systematically from students' identified necessities, lacks, wants, and learning needs. The present study therefore positions needs analysis as the starting point for determining both the reading content and the characteristics of the interactive learning media. This distinction constitutes the main research gap addressed by the study.

The need for a needs-based approach was supported by the data collected in the present study. The researcher administered a needs-analysis questionnaire to 30 Grade X students and conducted a semi-structured interview with an English teacher. The questionnaire was organized according to Hutchinson and Waters' (1987) framework of necessities, lacks, wants, and learning needs. This framework enabled the researcher to examine not only what reading abilities students needed to develop but also the difficulties they experienced, their preferred learning conditions, and the support they needed during learning.

The questionnaire findings showed that students needed support in several reading comprehension areas, including identifying the main idea, finding specific information, understanding vocabulary in context, and connecting information. The findings also demonstrated students' preferences for clear explanations, vocabulary support, interactive activities, visual materials, and feedback. For example, 60.0% of the students strongly agreed that they needed a combination of reading texts, explanations, examples, and comprehension questions, while 56.7% strongly agreed that they needed interactive activities that allowed them to select or provide answers. Similarly, 60.0% strongly agreed that they needed feedback to understand whether their answers were correct or incorrect. These results were consistent with the teacher interview, in which the teacher identified difficulties involving main ideas, specific information, unfamiliar vocabulary, references or relationships between information, and inferences. The teacher also indicated that students showed greater interest when visual and interactive activities were provided and that learning media should be clear, organized, simple, and connected to learning objectives. The combination of these findings and the existing literature provided the basis for the development of the product. The reading comprehension needs identified through the questionnaire and interview were translated into activities focusing on main ideas, specific information, vocabulary in context, references or relationships, and inference. Students' preferences for interactive activities, visual materials, feedback, and clear navigation were translated into corresponding media features. This approach is consistent with the theoretical position that interactive learning should provide

opportunities for learner action, response, choice, and navigation (Domagk et al., 2010), while multimedia materials should be organized in ways that facilitate learners' processing of information (Mayer, 2020). Thus, Genially was used not simply because it is a digital platform, but because its interactive and multimedia features could be organized to respond to the needs identified through the research.

Based on this rationale, the present study developed *Reading Adventure: Unlock the World: An Interactive Reading Journey for Grade X*. The product was designed as an interactive reading resource consisting of five destinations: The Arctic, The Amazon Rainforest, Kyoto, The Great Barrier Reef, and Lake Toba. Each destination contains a reading text and comprehension activities addressing the reading skills identified through the needs analysis. The media also incorporates an opening page, introduction, learning objectives, adventure map, interactive navigation, visual materials, feedback, reward pages, and a final challenge. The product was developed through an adapted Research and Development (R&D) procedure based on Borg and Gall (1983), consisting of six stages: Gathering Information and Data, Analyzing Data, Designing Material, Validation by Expert, Revising Material, and Final Product. The study did not conduct field testing or effectiveness testing because its focus was the development, expert validation, revision, and finalization of the learning media.

The novelty of the present study therefore lies in the development of an interactive Genially-based reading-comprehension learning resource whose content, activities, and media characteristics are derived from a systematic analysis of Grade X students' necessities, lacks, wants, and learning needs. Unlike studies that begin with a predetermined game, text type, or instructional approach, this study begins with the learners' identified needs and connects those needs with reading comprehension theory, interactive learning principles, multimedia principles, and an adapted R&D procedure. The contribution of the study is consequently both practical and developmental: it provides an interactive reading resource specifically designed around the identified needs of Grade X learners and demonstrates a systematic process for translating needs-analysis findings into digital learning-media features.

Therefore, this study aimed to develop interactive learning media by using Genially for students' reading comprehension. The study specifically addressed the development of an interactive digital learning resource for Grade X students by integrating identified reading comprehension needs with appropriate interactive and multimedia features.

RESEARCH METHOD

This study employed a Research and Development (R&D) design to develop interactive learning media by using Genially for students' reading comprehension. The development procedure was adapted from Borg and Gall (1983), whose work provides a framework for educational research and development. The study was conducted at SMA Santo Yoseph Medan and involved Grade X students and an English teacher. The students were the main data sources because the development focused on their reading comprehension needs and difficulties, while the English teacher provided supporting information about students' reading difficulties, classroom activities, learning materials, and media used in teaching. The study involved 30 Grade X students as respondents to the needs-analysis questionnaire and one English teacher as the interview participant.

Two instruments were used to collect the data: a student needs-analysis questionnaire and a semi-structured teacher interview guide. The questionnaire was developed based on Hutchinson and Waters' (1987) needs-analysis framework, covering necessities, lacks, wants, and learning needs. The questionnaire was designed to identify students' reading comprehension needs, difficulties, preferences, and the characteristics of learning media needed to support their reading learning. The semi-structured interview guide was developed based on the reading comprehension indicators adapted from Grabe and Stoller (2020) and learning-media indicators based on Smaldino, Lowther, and Mims (2021). The interview addressed students' reading comprehension difficulties, reading materials and activities, and learning media used in the classroom. Additional questions were asked when clarification of the teacher's responses was necessary.

Data collection was conducted by distributing the needs-analysis questionnaire to the Grade X students and conducting a semi-structured interview with the English teacher. The questionnaire collected students' responses regarding their reading needs and preferred learning support, while the interview provided contextual information about the students' difficulties and existing learning conditions. The data from both sources were then considered together to determine the content and characteristics of the interactive learning media.

The questionnaire data were analyzed using descriptive statistics in the form of frequencies and percentages. The percentage of each response was calculated using the formula $P = (f/N) \times 100\%$, where P represents the percentage, f represents the frequency of a particular response, and N represents the total number of respondents. The questionnaire results were

organized according to the four categories of Hutchinson and Waters (1987): necessities, lacks, wants, and learning needs. The teacher interview data were analyzed thematically following Braun and Clarke's (2006) approach. The analysis involved becoming familiar with the interview data, identifying initial codes, grouping related codes into themes, reviewing the themes, defining and naming the themes, and reporting the findings. The themes focused on students' reading comprehension difficulties and the characteristics of learning media needed. The results from the questionnaire and interview were compared and interpreted together to determine the requirements for the product.

The development of the learning media followed six adapted stages of the Borg and Gall R&D procedure: (1) Gathering Information and Data, (2) Analyzing Data, (3) Designing Material, (4) Validation by Expert, (5) Revising Material, and (6) Final Product. In the first stage, information was gathered through the needs-analysis questionnaire and teacher interview. In the second stage, the collected data were analyzed to identify students' reading comprehension needs and the characteristics of media required. In the third stage, the researcher designed the reading materials and interactive learning media based on the identified needs. The product was developed in Genially and organized as *Reading Adventure: Unlock the World: An Interactive Reading Journey for Grade X*. In the fourth stage, the developed product was evaluated by an expert to assess its appropriateness. In the fifth stage, revisions were made based on the expert's evaluation. Finally, the revised media was finalized as the final product.

The study focused on needs analysis, product development, expert validation, revision, and finalization. It did not include field implementation or effectiveness testing with students. Therefore, the findings were used to describe the identified needs and the development and validation of the resulting learning media rather than to determine its statistical effectiveness in improving students' reading comprehension.

RESULT AND DISCUSSION

The development of the interactive learning media was based on the needs identified from the Grade X students and the English teacher. The findings showed that students experienced difficulties in several aspects of reading comprehension and required learning materials that provided clearer explanations, vocabulary support, interactive activities, feedback, visual elements, and manageable navigation. These findings became the basis for designing the content and features of the developed media. The results are

discussed in relation to the theories and previous studies presented in the Introduction.

The student needs-analysis questionnaire was completed by 30 Grade X students. The results indicated that students needed support in identifying the main idea, finding specific information, understanding unfamiliar vocabulary from context, understanding relationships between information, and making inferences. The strongest needs were related to main-idea and specific-information practice, with 29 students (96.7%) selecting either Strongly Agree or Agree. This finding indicates that reading instruction for these students needed to provide sufficient opportunities to practice identifying important information rather than focusing only on reading the text itself.

The students also expressed clear preferences regarding the form of learning support. Twenty-eight students (93.3%) agreed that they needed a combination of reading texts, explanations, examples, and comprehension questions, and the same number agreed that they needed feedback after completing activities. In addition, 27 students (90%) agreed that they needed interactive activities and manageable sections for presenting reading materials. Vocabulary activities were needed by 26 students (86.7%), while 25 students (83.3%) indicated the need for clear navigation. These findings suggest that students needed a learning resource that combined reading practice with structured explanations, vocabulary assistance, interaction, feedback, and accessible navigation rather than a resource consisting only of digital reading texts. This finding is consistent with the learning-needs perspective of Hutchinson and Waters (1987), which emphasizes that effective learning materials should consider not only what learners need to learn but also how they need and prefer to learn.

The teacher interview supported and clarified the questionnaire findings. Four themes emerged from the thematic analysis: reading comprehension difficulties, current learning materials, student responses to learning activities, and desired media characteristics. The teacher reported that students had difficulty identifying the main idea, finding specific information in longer texts, understanding unfamiliar vocabulary, identifying references, and making inferences. The teacher also explained that textbooks and printed materials were commonly used in reading activities. At the same time, students showed more interest when visual and interactive activities were provided. The teacher therefore considered clear, organized, simple, and learning-objective-oriented media to be appropriate for the students. The agreement between the student and teacher data strengthens the interpretation that the development needed to

address both reading comprehension difficulties and the way learning materials were presented.

The needs identified from the two data sources were then translated into the design of the product. The developed media was entitled *Reading Adventure: Unlock the World: An Interactive Reading Journey for Grade X*. It used an adventure concept consisting of five reading destinations: The Arctic, The Amazon Rainforest, Kyoto, The Great Barrier Reef, and Lake Toba. Each destination contained one reading text and three comprehension questions. The activities were distributed across the identified reading skills. For example, The Arctic focused on main idea, specific information, and inference, while The Amazon Rainforest focused on specific information, references, and inference. Other destinations addressed vocabulary in context and relationships between ideas. This structure shows how the needs-analysis results were converted into specific reading activities rather than being treated only as descriptive information.

The media also incorporated features that directly corresponded to the students' learning preferences. Vocabulary support was provided through clickable explanations for selected unfamiliar words. Interactive questions allowed students to select answers and receive feedback, while Home, Back, Next, and Map buttons supported navigation. The media was organized through an opening page, introduction, learning objectives, adventure map, five destinations, final challenge, reading review, and closing page. These features reflect Domagk, Schwartz, and Plass's (2010) view of interactivity as involving learner action, system response, choice, navigation, and interactive learning activities. The organization of textual and visual elements also follows the multimedia-learning perspective of Mayer (2020), which emphasizes presenting multimedia information in ways that support learners' processing. Thus, the development demonstrates a direct connection between the identified needs and the pedagogical functions of the digital features.

The development process resulted in a preliminary product that was subsequently evaluated by an expert. The validation covered five aspects: reading comprehension content, language and learning media, interactivity, multimedia presentation, and overall suitability. The product obtained a total score of 75 out of 92, equivalent to 81.52%, and was categorized as "Appropriate." The result indicates that the developed media was considered suitable in terms of its reading content, language, interactive features, multimedia presentation, and overall suitability for Grade X reading comprehension learning. The validation therefore provided supporting

evidence for the appropriateness of the product, while the expert suggestions were used as the basis for revision before the final product was produced.

The final product represents the main outcome of the R&D process. It provides an interactive reading resource in which reading texts, comprehension questions, vocabulary support, feedback, visual elements, and navigation are combined within an adventure-based structure. This result is related to previous Genially research, which has demonstrated the use of interactive multimedia for English learning and reading-related activities. However, the present development differs in its starting point and product orientation. Rather than beginning with a predetermined game or a single text type, the present product was developed from the identified necessities, lacks, wants, and learning needs of Grade X students and supporting information from their teacher. This needs-based orientation provides a connection between learner requirements and the selection of the product's reading content and interactive features.

The findings also have an important methodological implication for the development of digital reading media. The needs-analysis data did not merely identify that students experienced reading difficulties; they provided specific directions for the design of the product. Difficulties with main ideas, specific information, vocabulary, references, and inference were represented through the comprehension activities, while preferences for interaction, visual support, feedback, and navigation were represented through the media features. Therefore, the development process demonstrates how needs analysis can function as a practical basis for determining both instructional content and digital-media characteristics.

Nevertheless, the findings should be interpreted within the scope of the study. The research focused on needs analysis, product development, expert validation, revision, and finalization. It did not involve classroom implementation, student-response testing of the final product, or pre-test and post-test procedures. Consequently, the 81.52% validation result indicates the product's assessed appropriateness, but it does not demonstrate that the media improves students' reading comprehension. Further research can examine the implementation of the final product with students and investigate their responses and learning outcomes. This limitation is important because it prevents conclusions about effectiveness beyond the evidence obtained through needs analysis and expert validation.

Overall, the findings answer the research question by showing how the interactive learning media was developed: the process began with students' and the teacher's identification of reading comprehension needs, continued

with the translation of those needs into reading materials and interactive features, and proceeded through expert validation and revision to produce the final Genially-based media. The resulting *Reading Adventure: Unlock the World* provides a needs-based interactive resource for practicing reading comprehension among Grade X students, while its validated appropriateness provides support for its use as a developed learning resource rather than evidence of learning effectiveness.

CONCLUSION

The development of interactive learning media by using Genially for students' reading comprehension was based on the reading needs and learning preferences of Grade X students. The needs analysis showed that students required support in understanding main ideas, specific information, vocabulary in context, references or relationships between information, and inferences. These needs were translated into an interactive reading resource entitled *Reading Adventure: Unlock the World: An Interactive Reading Journey for Grade X*. The media combines reading texts, comprehension activities, vocabulary support, visual elements, interactive navigation, and feedback within an adventure-based learning structure. The development process followed six stages adapted from Borg and Gall: Gathering Information and Data, Analyzing Data, Designing Material, Validation by Expert, Revising Material, and Final Product. Through this process, the study produced a needs-based Genially learning resource that was considered appropriate through expert validation.

The study contributes a practical example of how learners' identified reading needs can be translated into the content and features of an interactive digital learning resource. Its contribution is limited to the development and expert validation of the product, as the study did not include classroom implementation or effectiveness testing. Therefore, further research is needed to implement the final media with students and examine their responses and learning outcomes. The developed media can consequently serve as a learning resource for reading comprehension while providing a basis for future research on the classroom use and effectiveness of Genially-based interactive reading materials.

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