Digital Literacy: Students' Perception toward Advanced Grammar Interactive E-Books in the English Department of Universitas Negeri Padang

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Abstract

The use of multimedia as a part of digital literacy also becomes the demand of this 21st-century education. The material has to be more technological and supports student-oriented learning methods. The use of this kind of technology also can be applied in English lessons like grammar. In the English Department of Universitas Negeri Padang, multimedia has been used in grammar classes, specifically in advanced grammar classes for students in the academic year 2018, called interactive e-books. This study analyzed students' perceptions of using this interactive e-book in advanced grammar classes. The design of this study was descriptive research. The population of this study was the students in the English Department in the academic year 2018. Then the sampling used purposive sampling where the sample was the class with 32 students used interactive e-books for their advanced grammar course. The instrument for this study was the questionnaire, divided into three sections: interface, interactivity, and material. The data were collected by descriptive statistical calculation. The result of this study was that students had a positive perception of using interactive e-books in advanced grammar classes. Hence, the students' perceptions can be used to improve better interactive e-books used in the teaching and learning process in grammar class.

Keywords: *Digital Literacy, Students' Perception, Advanced Grammar, Interactive E-book*

Introduction

Literacy has been a widely discussed topic recently. Along with the rapid development of technology, it encourages changes in the concept of literacy itself. Initially, literacy only referred to the ability to read and write texts as well as the ability to interpret. Still, literacy continues to develop into a means of identification, understanding, interpretation, creation, and communication today (UNESCO, 2022). Given the many uses of literacy today, this shows how important it is to be acquired and mastered. What's more, literacy is the 6th target in the field of education, which is contained in the global action plan adopted by world leaders or known as the Sustainable Development Goals (SDGs) for a better world in 2030 (United Nations, 2022).

Literacy is divided into several types, one of which is digital literacy. Many studies on digital literacy have been carried out by international experts such as America, Europe, Australia, Asia, and Africa (Mathar, 2014). The development of literacy has also been relatively rapid from year to year. Mathar (2014) stated that there are 843 articles on digital literacy studies in total that have been published, and around 661 are in English. The writing is also done by a single author and is carried out by collaborations of several authors. This application shows that the field of digital literacy is interesting enough to encourage experts to work together in developing digital literacy studies. Based on this phenomenon, experts worldwide have widely used research topics on digital literacy to determine how

literate a particular group of people is concerning their interactions with digital media that are currently developing.

The concept of digital literacy has emerged since 1990. One of the well-known figures, namely Gilster (1997), defines digital literacy as an ability to understand and use information from various digital sources. Hence, it covers not only reading skills but also critical thinking skills needed to access information. This realization is because digital sources have an interface that contains additional features that enable readers to interact actively with existing information digitally. For this reason, information users must understand how to find relevant information and mastermind it. In addition, critical thinking is also needed in digital literacy to evaluate information found through digital media because not all information contained in digital media is based on facts. As such, information from various digital sources continues to grow along with the development of information and communication technology due to media convergence.

Sugihartati and Harisanty (2014) explained media convergence as combining various mass media and information technology into one device that makes it easier for owners to access different information and impressions. To deal with this phenomenon, digital literacy skills need to be learned and trained. The world of education is also inseparable from the spread of digital literacy. One way is to provide learning resources in digital form. The UNP English Department has developed and implemented interactive electronic books (hereafter referred to as interactive e-books) in learning Advanced Grammar courses. According to Fitrawati and Syarif (2018), the "aim of using this interactive e-book in advanced grammar is to make it suitable for students in this technology era and to simplify the complicated grammar to be easier to be understood by students."

By using interactive e-books, it is hoped that students who incidentally are digital natives will find it easier to understand grammatical concepts through interactive features in the interactive e-book itself. Yet, before students are required to understand and use information from e-books as a digital learning resource, the e-books used must meet the criteria of interactive e-books and learning resources. The way to determine whether the digital learning resources that have been developed and used meet the requirements is through evaluation, one of which is based on the perceptions of its users, including the students themselves. Therefore, this research examines students' perceptions of using interactive e-books in the Advanced Grammar course.

According to Paul Gilster in their book *Digital Literacy* (1997), digital literacy is the ability to understand and use information in various forms from various sources accessed via computer devices. Bawden (2001) offered a new understanding of digital literacy rooted in computer and information literacy. Computer literacy developed in the 1980s, when microcomputers were increasingly being used in the business environment and society. However, information literacy only spread widely in the 1990s when information became easier to compile, access, and disseminate through networked information technology. Thus, referring to Bawden, digital literacy is more associated with the technical skills of accessing, assembling, understanding, and sharing information.

According to UNESCO (2022), the concept of digital literacy overshadows and becomes an essential basis for the ability to understand technology, information, and communication devices, for example, ICT Literacy, which refers to technical capabilities that enable the active involvement of the community components in line with cultural developments and digital-based public services. Therefore, ICT literacy is explained from two perspectives. First, technological literacy, known as computer literacy, refers to an understanding of digital technology, including users and technical capabilities. Second, it is a use of Information Literacy. This literacy focuses on one aspect of knowledge: the ability to map, identify, process and use digital information optimally. The concept of digital literacy, in line with the terminology developed by UNESCO, refers to and cannot be separated from literacy activities, such as reading and writing, as well as mathematics related to education. Therefore, digital literacy is a skill (life skill) that does not only involve the ability to use technology, information, and communication devices but also social skills, learning abilities and having attitudes, critical, creative, and inspiring thinking as digital competencies.

Etymologically, the word "media" comes from the Latin word "medium," which means "in-between" or "something in the middle." Media is the plural medium used to convey something from one person to another. The media is a tool for communicating and sharing information from the sender to the recipient. Then, when it comes to education, according to Susilana and Riyana (2009), media is a tool for information that conveys material for learning whose purpose is to achieve learning goals. Media

use in teaching and learning is usually called teaching, learning, instructional, or educational media. Instructors use instructional media to implement teaching and facilitate student achievement of educational goals. Therefore, based on the definitions above, learning media are media used in teaching and learning to convey information or messages that facilitate achieving learning goals.

Media use in the classroom benefits the teaching and learning process. According to Susilana and Riyana (2009), media can make information clearer, create more space, time, and energy for learning, motivate students and increase their desire to participate in class, let students learn individually based on their abilities, and provide the same amount of stimulation to create the same learning experience and create the same perception. In addition, the creative use of teaching media will make students learn more because they can get more information from the text and video, audio, images, graphics, animation, etc. Those are usually-used media in the teaching and learning process to understand the material better and to improve their ability to fit the learning objectives. Susilana and Rihanna (2009) also mentioned the function of learning media in the teaching and learning process, namely:

 a. Learning media is not an additional part of the teaching and learning process, but its function is to support learning to be more effective.
 b. Learning media is not an independent part of the teaching and learning process but is integrated with the process.
 c. Learning media is not only to entertain students but also to increase student motivation and attract student attention.
 d. Using teaching media makes teaching and learning more efficient in spending time.
 e. Students will remember the material in depth by using teaching media. Learning media prevent students from verbalism.

Therefore, it can be said that using teaching media makes teaching and learning more effective and efficient for teachers and students. Based on technology, media is divided into two: print media (such as textbooks, magazines, newspapers, etc.) and electronic media (such as TV broadcasts, radio, CDs, DVDs, films, videos, etc.). As technology develops rapidly, Lister et al. (2008) divided media into conventional and new media types. Conventional media refers to print and press media, photography, advertising, cinema, broadcasting (radio and television), publishing, books, films, cassettes, and discs. Meanwhile, new media is digital, interactive, hypertextual, virtual, networked, and simulation. Many media are commonly used in teaching and learning: textbooks, videos, audio, pictures, films, slides, charts, graphs, the Internet, DVDs, CD rooms, and video conferencing.

Media in the teaching and learning process used by teachers can be combined with other media, which can be called multimedia. Multimedia combines several media to make teaching and learning more interactive, effective, efficient, and engaging. In education, multimedia is needed to improve the quality of education. It becomes a tool for teachers and students to access images and sound to support learning. Teachers can convert textbooks and whiteboards into other media or multimedia, initiate e-learning programs, and use electronic materials. One of the innovations that are currently popular is the e-book.

There are several definitions of the term e-book. Anuradha and Usha (2006) defined e-books as a technology that provides printed book content in electronic mode. They define e-books as electronic texts for the same purpose as standard printed books. Lestari et al. (2018) described e-books as interactive books using electronic tools that include information to create text or images. Similarly, Armstrong et al. (2002) defined an e-book as "any piece of electronic text regardless of size or composition (digital object), but excluding journal publications, available electronically (or optically) for any device (handheld or desk-bound) that includes a display." Therefore, from the above definitions, it can be concluded that an e-book is an electronic version of a pirated book that can be displayed on a computer or any electronic device that includes a screen. However, another definition also shows that e-books are not only digital versions of printed books but also have unique features that distinguish e-books from printed versions.

According to Nelson (2008), e-books are electronic books that can be read digitally on a computer screen, certain e-book readers, personal digital assistants, or even cell phones. However, e-books have unique distinctions that distinguish them from other scanned printed books. Distinction refers to adding

animation, simulation, video, audio, and instances. Then, according to Jeong (2012), the word e-book is used to describe text analogous to books displayed digitally on computer screens, personal digital assistants, or specially designed readers; it may include text, graphics, video, animation, and/or sound. E-books are a new medium for accessing digital information, focusing on the benefits of electronic reading and offering many advantages over paper books. Jeong (2012) included search capabilities and the availability of special features in e-books. Therefore, it can be concluded that e-books are electronic books that provide text and images and unique features such as text, graphics, video, animation, sound, and simulation.

The term interactive e-book is used because the interactive multimedia provided allows users or students to interact or exchange information with the interactive e-book. In other words, it will enable learners to interact with books. Bozkurt and Bozkaya (2015) defined interactive e-books basically as a digital e-book format in which the user, digital reader, and environment can interact reciprocally at a high level; elements of digital books can communicate and interact among themselves and the environment and users, and many communication channels are used at one time. It can be seen that interactive e-books are not only e-books that are complimented by interactive multimedia but also integrate and interact with users.

According to Lestari et al. (2018), there are several benefits to using e-books in teaching and learning. First, students become active in class so that learning becomes more exciting and has deep meaning. Second, students can collect new creative ideas from their previous knowledge to understand abstract thoughts they did not understand before. Third, it makes them work in groups. Then, it motivates students to achieve their goals actively and enthusiastically. After that, it creates meaningful learning. Then, it makes students realize what they have learned. Hence, interactive e-books guide students' attention and motivate them in their learning.

The function of interactive e-books in the classroom is not far from increasing student productivity in learning and being a tool to ensure that the time they spend studying is quite effective and efficient. The use of interactive e-books facilitates students and teachers in conveying information, creating individual learning types, and providing large amounts of information to support students. In addition, the interactive e-book aims to make the learning process more exciting and simplify students' learning experiences. Getting students involved in the learning process is crucial as making them enjoy it. According to Wang and Huang (2015), Lim et al. (2012), and Yeh (2010), e-book design criteria is divided into four domains: user interface, content, total output and display, and interactivity. Output and total domain consist of providing a reading experience like reading in a paper book, providing front and back covers, accessible using different devices on different platforms, the possibility of turning pages like a converted printed book, similar in length and size to printed books, line output that is uniform in terms of size, color, and presentation. The criteria of a good e-book design can be elaborated as follow:

1. User Interface

Simple design on screen, easy to register and exit to book, possibility to change font type and size, mark hyperlinks in different colors, option to highlight important parts, option to annotate pages, a pointer to user location in the book, clean and understandable icons, searching for a specific word via the search box, navigate to a particular page via entering a number into the search box are things that fall under the domain of interfaces. Meanwhile, the findings of Bazkurt and Bozkaya (2015) stated that the criteria for an interactive e-book interface also have the same idea as Wang and Huang (2015), where all requirements are divided into seven parts, namely: (1) convenience interface usage, (2) customization and autonomy, (3) interface design, (4) aesthetics and consistency, (5) universal design for accessibility, (6) support services; and (7) layout frame design.

2. Interactivity

The domain of interactivity is multimedia hyperlinks, which involve highlighted sections via social networks, directing students to specific chapters using hyperlinks, providing video clips, and offering interactive electronic content, such as asking questions to readers and providing immediate feedback. Bozkurt and Bozkaya (2015) indicated that interactive e-books are essentially a digital book format that makes users, the e-book itself, and the environment (devices) interact with each other digitally because it contains hypermedia and interactive elements put together at the same time. Thus, readers are promised that e-reading experience that includes cognitive, sensory, and physical interactions. (Bozkurt

& Bozkaya, 2015). Interactive e-books are a new generation of digital books (after e-books) that utilize more creative and innovative features; therefore, an interactive e-book is an enhanced e-book that contains hypermedia and interactive elements, which requires user interaction and active participation in directing the flow of the interactive e-book.

What makes e-books and interactive e-books different is that the interactivity of interactive e-books provides a higher level of interaction than e-books. The information output of an interactive e-book depends on the user's input. Interactive e-books require the active participation of users in handling interactive e-books and their elements. For example, Bartoszewicki (2013) stated that interactivity is an animation that provides some movement to e-book content objects, interactive maps and graphics, 3D rendering, sliding, hot spots, short videos, and audio clips. These elements further explain complex topics and engage students with different learning styles.

3. Content Materials

The content domain includes a sufficient amount of text on the screen, integrating text and images on the same page, providing high-resolution photos and pictures, the possibility of enlarging photographs and illustrations, using bullets, and cutting text into comfortable portions.

According to Bazkurt and Bozkaya (2015), the content criteria in interactive e-books are divided into several sections:

a. Presentation
- Use clear and fluent language.
- Effective narrative features.
- Provide content based on a theoretical framework that supports learning objectives.

b. Riches
- The capacity of multimedia elements.
- Balance amount information.

c. Motivation and attraction
- Interesting content
- The content is designed precisely according to the characteristics of the target students.

d. Assessment and evaluation (explained more in the next section)
- Prepare instruments where students can assess their learning process.

e. Integrity, coherence, and connectivity
- Media-content coherence
- The integrity of the hierarchical structure of the content
- Content coherence with learning objectives
- Language and content coherence
- Coherence of learning activities with learning objectives
- The connectivity of the content itself

Zmazek et al. (2012) also mentioned some fundamental axioms to explain the didactic content requirements of e-textbooks, which can also be added to create good-quality e-book content. a) curriculum coverage, b) interactivity, c) multimedia, d) inductive approach, e) "fille rouge," f) deepening, g) unique outlook, and h) methodic didactic and language suitability. The e-book should keep students motivated from start to finish by explaining the topic in the introductory section of the chapter, removing main areas, and providing a summary with definitions of basic terms, hyperlinks, and links to later chapters. It includes a variety of forms, types, and levels of difficulty of questions and exercises, f) in-depth, or sections of content that require understanding should be greater than sections with lower taxonomy level exercises, g) unique views including design titles, summaries, definitions, objectives essential, audio and video elements, additional content, etc., and h) methodological and language suitability. Thus, the criteria for interactive e-book material are similar to material in traditional textbooks, especially in coherence with the curriculum used, objectives, competencies, knowledge, and skills. However, interactive e-books focus more on the interactivity of the material provided. The use of

video, sound, images, hyperlinks, and unique views are criteria that differentiate the material in interactive e-books and traditional textbooks.

4. Assessment and Evaluation

An assessment must be carried out to ensure that readers or students understand the material or content they have learned. In printed books, exercises or tests are included throughout a chapter or after completing a sub-heading to measure student understanding. At the end of the chapter, they provide quizzes to measure overall knowledge of the material that has been studied. Tests and quizzes provided in textbooks must be consistent with research objectives, use consistent language in stating or writing questions, and design tests and quizzes that allow students to demonstrate what they have learned (University of Washington, 2019). As with the same concept as printed books, interactive e-books also provide tests and quizzes to assess students' abilities after studying the material. Tests are given throughout the chapters, and examinations are provided at the end. However, the tests and quizzes in interactive e-books are designed interactively. Feedback is shown as soon as students complete their work. It also provides other tests or quizzes on the study website by providing a hyperlink. Then, related videos, audio, and images can be added to make tests and quizzes more fun and enjoyable for students. Also, the exercises are provided in various types, such as yes or no questions, multiple choice, and essay questions, and make sure that students can do all the tests and quizzes by themselves (Kotobee, 2017).

5. Practicality

Interactive e-books cannot be separated from practicality. Practicality, or it can also be called usability, is ensuring that interactive products are easy to operate, use effectively, and are fun from the point of view of the user or student. Wang and Huang (2015) found that interactive products have many practical or usability components, traditionally associated with five attributes. First, learning ability: easy to learn and quick to use. Second, efficiency: the user has studied the system and can produce a high output. Third, recall ability: users can access the system even without logging in for some time. Fourth, errors: possible errors may occur when using the system. Lastly, satisfaction: users are happy while using the system.

Rogers et al. (2015) stated three main quality criteria for measuring the usability or practicality of interactive products. The first is the product's effectiveness used by users to meet goals. The second is efficiency, which relates to how quickly users can perform tasks. Then lastly is satisfaction, which measures subjectively how users enjoy using the system. Yeh (2010) also stated almost the same criteria for measuring practicality. They noted three criteria: 1) Effective: able to help users complete tasks successfully and achieve goals. 2) Easy: it can help users reduce four specific elements: memory work, physical work, visual work, and unnecessary work. 3) Fun can benefit the user's enjoyment level - physical, social, psycho, and ideas. Thus, the criteria for the practicality of interactive e-books are the effectiveness of interactive e-books in completing tasks, ease of learning and use, and fun for users. Therefore, with the characteristics of interactive e-books discussed above, interactive e-books encourage users to understand the technology and use it to capture and utilize the digital information contained therein.

Relevant Studies

Similar research on students' perceptions of interactive e-books used in advanced grammar has yet to be found. However, several studies have been conducted regarding using e-books in teaching and learning. Huang (2012) aimed to analyze students' thinking about e-book reading programs at a national university in northern Taiwan, with 67 first-year students taking two courses in English as a Foreign Language (EFL) intermediate level. During the experiment, students were asked to read at least one e-book online weekly from a re-read list conducted by the researcher. The results of this study were that students gave positive responses to the program's strategy tools and their learning effects, which they explained in the questionnaires and ad interviews. They also mention that the benefits of e-books are to sharpen reading habits and increase motivation, as well as being more widely available, portable, and environmentally friendly than printing text. Nevertheless, there were difficulties noted by students that e-books were associated with eyestrain and dealing with long texts.

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Other research on e-books in teaching and learning is also associated with reading (Chen et al., 2019). This research is about the effect of extensive e-book reading on tertiary-level students' EFL reading attitude, reading comprehension, and vocabulary. The total number of participants was 89, divided into experimental and control groups; each group contained 46 and 43 students. This study used several instruments, including Stokman's Reading Attitude Scale, for the TOEFL reading test and a vocabulary test developed by Schmitt et al. All instruments were placed in a pretest before and after the intervention. The results showed that the experimental group performed better in reading attitude, reading comprehension, and vocabulary, which concluded that integrating an extensive e-book reading program into an EFL teaching program improved tertiary-level EFL students' reading levels, reading comprehension, reading comprehension, and vocabulary.

Ebied and Rahman (2015) aimed to examine the effect of interactive e-books on student achievement at Najran University in computers in educational courses. This study had 60 students as a sample from the fifth level at Najran University in Saudi Arabia who were enrolled in a computer in education course. The students were divided into two groups – the experimental group and the control group; the experimental group used the e-book, and the control group used the printed book. The result of this study is that there is a significant difference between the study group supporting academic achievement and the experimental group that studies e-books. Fitrawati and Syarif (2018) also researched developing e-books for the Advanced Grammar course at the English Department of Universitas Negeri Padang. The research procedure was to explain the conditions of the teaching and learning process and the media used in learning Advanced Grammar at t the English Department of Universitas Negeri Padang, exploring the needs of students and teachers about e-books, and designing interactive e-books for advanced grammar at the English Department of Universitas Negeri Padang. The instruments used were questionnaires, observations, and interviews. The results show that the media used in teaching and learning Advanced Grammar is still conventional-explaining material and is not supported by any media.

There are some differences between this study and the previous ones mentioned above. Firstly, the difference is that this study analyzes students' perceptions of interactive e-books used in Advanced Grammar classes at the English Department of Universitas Negeri Padang. In contrast, previous studies focused on students' perceptions of e-books used in EFL reading programs. The second previous study also concentrated on e-book use in the effect of extensive e-book reading on students' EFL level reading levels, reading comprehension, and vocabulary. This focus is also in line with the third previous study, which focused on the use of e-books in examining its effect on student achievement. Then, the latest research, namely on the development of interactive e-books in Advanced Grammar classes at the English Department of Universitas Negeri Padang, is also different from the research conducted by the author. Previously, the focus was on developing e-books by looking at classroom conditions, the needs of students and teachers, and designing e-books. At the same time, this research was being carried out only focusing on students' perceptions of the e-books they have to use in class.

Methods

This analysis is descriptive research that describes the problem under study. Kumar (2011) stated that descriptive research describes situations, problems, phenomena, services, or programs, provides information about the current condition of society, or describes thoughts or perceptions of the problem. Survey research was used to collect data related to social issues (Pandey & Pandey, 2015). Therefore, the information conveyed is the student's perception of using interactive e-books. This research was conducted at the English Department of Universitas Negeri Padang. In addition, this study included a questionnaire to collect data. Then, the data will be analyzed to answer research questions.

A. Population and Sample

The population of this study was English Department students of Universitas Negeri Padang. The participants in this study were those who enrolled in the 2018 academic year. There were five classes for educational programs and three for non-educational programs, consisting of 256 people in total.

The research sample was taken using purposive sampling. Pandey and Pandey (2015) indicated that purposive sampling is a technique that takes samples based on specific criteria considered necessary for

research. One of the criteria for this sampling is equality. For this research sample, the equivalence used is the population using the same product; in other words, an interactive e-book in an Advanced Grammar class. Based on the researcher's observation, one class used interactive e-books for the Advanced Grammar course. Thus, there were 32 students as samples for this study.

B. Instrument

The instrument used in this research was a questionnaire. The questionnaire is related to research objectives, adapted from Vassiliou and Rowley (2008), Bozkurt and Bozkaya (2015), and Alshaya and Oyaid (2019). An expert from the Department of Educational Technology and a grammar expert from the English Department validated the questionnaire. The questionnaire included five aspects that students must give their perceptions of display design, interactivity, practicality, materials, and interactive e-book exercises, in which the total statements are 80. The questionnaire was delivered to the sample students. It was created in Google Forms, and the link is shared via email or social media. Also, the questionnaire was on a Likert scale consisting of four responses: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD).

C. Data Collection Technique

Students who studied using interactive e-books in the Advanced Grammar class were given a questionnaire. They were provided with a link to access the questionnaire in Google Forms. Students were asked to complete a questionnaire by reading the statements and responding to each of them. The student's identities were not included when analyzing the data.

D. Data Analysis Technique

The collected data from the questionnaire were analyzed by scoring each response. The most positive response or perception scored 4, the highest score. Conversely, the most negative response or perception scored 1, the lowest score, and the other two responses or perceptions scored 2 for negative and 3 for positive. The scores of each item were summed to get the average score. After getting the average per item, the mean scores were described as follows.

Table 1. Perception Level

No.	Mean Score	Category	Perception Level
1	3.26–4.00	Strongly Agree	Very Good
2	2.51–3.25	Agree	Good
3	1.76–2.50	Disagree	Bad
4	1.00–1.75	Strongly Disagree	Very Bad

Result and Discussion

The results were divided into five categories: user interface, interactivity, content materials, exercises, and practicality. Students' responses were described as follows.

1. User Interface

There were 18 items responded to by the students. A detailed explanation and discussion about the students' perception on the user interface on using the interactive e-book is presented in Table 2.

Table 2. Students' Perception of the Interface of the Interactive E-book

Item	Statement	Response				MS	PL
		SD	D	A	SA		
1	The interactive e-book has an attractive cover.	0	2	27	3	3.03	Good

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No	Statement					Mean	Category
2	The layout design on the interactive e-book is simple, well organized and easy to understand.	0	7	18	7	3.00	Good
3	The color composition and text are matching.	0	2	22	8	3.19	Good
4	The image and video placement are appropriate.	0	2	18	12	3.31	Very Good
5	The videos are displayed in HD quality.	0	1	18	13	3.38	Very Good
6	The images are clear and relevant.	0	3	17	12	3.28	Very Good
7	The screen can be zoomed.	2	7	14	9	2.94	Good
8	The font used is legible.	0	6	16	10	3.13	Good
9	The font size in interactive e-book can be adjusted by the users for certain layouts.	0	5	20	7	3.06	Good
10	The interface of the interactive e-book can be read without straining the eyes.	0	7	17	8	3.03	Good
11	The use of buttons, icons, and menu items is clear, understandable, and consistent.	0	5	18	9	3.13	Good
12	The user manual in the interactive e-book is clear and understandable.	0	7	18	7	3.00	Good
13	The interface and animation can be customized by the user.	0	2	24	6	3.13	Good
14	Text in the interactive e-book can be highlighted with several color choices.	1	3	20	8	3.09	Good
15	The interactive e-book offers note taking on multiple book pages.	0	4	19	9	3.16	Good
16	The interactive e-book comes with a table of contents.	0	4	18	10	3.19	Good
17	The interactive e-book can bookmark multiple pages in a book.	0	1	24	7	3.19	Good
18	Annotations, such as notes, page markers, and text highlights, are integrated in a single menu item.	0	3	17	12	3.28	Very Good
	Mean Score					**3.14**	**Good**

Based on the table above, it can be seen that the highest average score was obtained from statement No. 5, indicating the HD quality of the videos shown, with an average score of 3.38. This finding suggests that students who use interactive e-books strongly agreed that the videos included supporting their understanding of each topic of discussion are of good quality and worth watching. Media such as high-quality videos can help students understand the material presented. Meanwhile, the lowest average score was obtained by statement No. 7, indicating screen zoomability, with an average score of 2.94. This finding shows that interactive e-book features are less than optimal in increasing the size of the book's contents. Related to this, there was a comment from Student A about the difficulties experienced when zooming in on an interactive e-book screen while filling out several exercises. Then, Student B

stated that they could not scroll the page while doing the exercise. Apart from this, students' perception of the interactive e-book interface as an Advanced Grammar teaching media was good.

2. Interactivity

In general, all students perceived that the interactivity aspect of the e-book is in good category (3.22). Of the 13 statements, seven of them (statements No. 1, 2, 4, 5, 6, 7 and 8) obtained the highest number of positive responses in which no participant (0%) thought that those statements were less important or not important. This positive pattern, hence, indicates a strong link among these seven most desirable statements. A detailed explanation and discussion about the interactivity are presented in Table 3.

Table 3. Students' Perception of the Interactivity of the Interactive E-book

Item	Statement	Response				MS	PL
		SD	D	A	SA		
1	The interactive e-book is equipped with interactive elements, such as 3D models, rotating images, videos, gifs, audio, pop-up message boxes, practice questions, animations, links, and widgets.	0	1	20	11	3.31	Very Good
2	The users can interact with embedded objects by touching, dragging, or clicking on these objects.	0	3	21	9	3.28	Very Good
3	The users can interact with the devices, by changing their orientation, shaking them, or other gestures.	0	6	19	7	3.03	Good
4	The users can provide responses to practice questions posed in an interactive e-book.	0	1	21	10	3.28	Very Good
5	The users can receive feedback, relating to their scores, answer reports, answer keys, and explanations regarding the answers to each question, after submitting their answers.	0	3	13	16	3.41	Very Good
6	The users can freely play, pause and stop the videos in the interactive e-book, as well as display them in full screen size.	0	1	13	18	3.53	Very Good
7	The users can connect with hyperlinks, by clicking on the highlighted words or pictures on the screen.	0	1	21	10	3.28	Very Good
8	The users can navigate which chapter or sub-chapter to open in the interactive e-book.	0	2	13	17	3.47	Very Good

9	The users can search for keywords in the entire book and in one particular chapter.	0	6	15	11	3.16	Good
10	The users can share annotations through their social networks.	0	6	20	6	3.00	Good
11	The users can set the page animation to be page-flip, card-flip, slide, or fade.	0	4	22	6	3.06	Good
12	The users can choose the words they want to hear (text-to-speech), browse, share, or copy.	1	4	23	4	2.94	Good
13	The users can communicate (by providing feedback or comments) with authors regarding matters related to the interactive e-book.	0	3	24	5	3.06	Good
	Mean Score					**3.22**	**Good**

Based on the table above, the highest average score was obtained from the statement, "Users can freely play, pause, and stop the videos contained in the interactive e-book, and display them in full-screen size," with an average score of 3.53. This finding shows that students strongly agreed that they could interact with the contents of books, especially videos. They had complete control over the interactive e-books they used. They were free to control all media or multimedia and various other features in interactive e-books according to their ability to understand the material better. Apart from that, they also agreed with the navigation feature, which makes it easier for them to browse through the book's contents, and the direct feedback given every time they solve questions, as evidenced by the average scores of 3.47 and 3.41. While the lowest score was found in the statement, "Users can choose the words they want to hear (text-to-speech), browse, share, or copy," with a score of 2.94. In this case, there was no further comment from students. However, it is assumed that this is because interactive e-books are loaded with a fixed layout, so words are challenging to highlight with the mouse or the user's finger. Nonetheless, overall, students' perception was good towards the interactivity of interactive e-books as Advanced Grammar teaching materials.

3. Content Materials

There were 22 items responded to by the students. Overall, the students perceived good perception about the content materials in the interactive e-book (3.17). A detailed explanation and discussion about the students' perception on the content materials in the interactive e-book is presented in Table 4.

Table 4. Students' Perception of the Content Materials of the Interactive E-book

Item	Statement	Response				MS	PL
		SD	D	A	SA		
1	The materials contained in the interactive e-book are accordingly with the curriculum and syllabus.	1	3	12	16	3.34	Very Good
2	The materials contained in the interactive e-book are clear.	0	2	23	7	3.16	Good
3	The materials contained in the interactive e-book are easy to be understood.	0	4	19	9	3.16	Good

4	The materials contained in the interactive e-book are presented systematically.	0	0	20	12	3.38	Very Good
5	The materials contained in the interactive e-book are delivered in simple language.	0	5	18	9	3.13	Good
6	Examples given are relevant with the materials learned.	0	3	19	10	3.22	Good
7	The materials contained in the interactive e-book are comprehensive.	0	3	19	10	3.22	Good
8	The materials contained in the interactive e-book are supported by theoretical frameworks that facilitate the accomplishment of learning objectives.	0	1	23	7	3.09	Good
9	The materials contained in the interactive e-book are integrated with other services or sources.	0	4	22	6	3.06	Good
10	The materials contained in the interactive e-book meet the characteristics of targeted students.	0	4	23	5	3.03	Good
11	The materials contained in the interactive e-book are presented in interesting ways.	0	5	15	12	3.22	Good
12	The video materials contained in the interactive e-book are accordingly with the topics discussed.	0	1	19	12	3.34	Very Good
13	The materials contained in the interactive e-book has many white spaces (incompact).	0	7	18	7	3.00	Good
14	Texts and illustrations related to the students' culture help them to learn.	0	5	24	3	2.94	Good
15	The materials contained in the interactive e-book facilitate them to develop self-confidence.	0	2	18	12	3.31	Very Good
16	Topics discussed in the interactive e-book are relevant and useful for the students.	0	4	21	7	3.09	Good
17	The materials contained in the interactive e-book require and facilitate the students to reach findings for themselves.	0	4	21	7	3.09	Good
18	The materials contained in the interactive e-book expose the students to English for authentic use.	0	2	24	6	3.13	Good
19	The students' attention is directed to linguistic features of the content materials.	0	3	19	10	3.22	Good

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		SD	D	A	SA	MS	PL
20	The materials contained in the interactive e-book give the students opportunity to use the targeted language, English, for communicative purposes.	0	5	21	6	3.03	Good
21	The materials contained in the interactive e-book welcome the students with different learning styles.	0	4	19	9	3.16	Good
22	The materials contained in the interactive e-book enable the silent period at the beginning of instructions (watching or observing).	0	10	21	6	3.34	Very Good
	Mean Score					**3.17**	**Good**

Based on the table above, the highest average score was obtained from the statement, "Teaching materials in interactive e-books are provided systematically," with a score of 3.38. This finding shows that students need the material arranged systematically. Materials that have been arranged systematically will make it easier for students to learn the material; this can also affect their level of understanding. Apart from that, they also strongly agreed with statements Nos. 1, 12, and 22, which state that the contents of interactive e-books, including videos, were arranged according to the curriculum and syllabus and allowed them to carry out the observation process. Meanwhile, the lowest score is found in the statement, "Texts and illustrations related to student culture help them learn," with a score of 2.94. In this case, it is likely because the illustrations in the interactive e-book do not explicitly contain student culture. Regarding these indicators, there was no additional comment from students. Overall, the student's perception of the materials in the interactive e-books for learning Advanced Grammar was good.

4. Exercises

There were eight items responded to by the students. Overall, the students perceived good perception about the exercises in the interactive e-book (3.25). A detailed explanation and discussion about the students' perception on the exercises in the interactive e-book is presented in Table 5.

Table 5. Students' Perception of the Exercises of the Interactive E-book

Item	Statement	Response				MS	PL
		SD	D	A	SA		
1	The interactive e-book has enough exercises.	0	1	14	15	3.25	Good
2	The type of questions in the interactive e-book is various.	0	4	14	14	3.31	Very Good
3	The interactive e-book is provided with directions in every exercise given.	0	1	21	10	3.28	Very Good
4	The directions are easy to be understood.	0	8	15	9	3.03	Good
5	The exercises challenge the students to think.	0	1	18	13	3.38	Very Good

6	The interactive e-book provides immediate feedbacks of the students' answers.	0	1	20	11	3.31	Very Good
7	The exercises cover all materials learned.	0	2	21	9	3.22	Good
8	The exercises help me to obtain learning goals.	0	2	20	10	3.25	Good
	Mean Score					**3.25**	**Good**

Based on the table above, the highest score was found in the statement "Practice questions challenge students to think," with a score of 3.38. This finding shows that students agreed that the exercises included in the interactive e-book should be able to sharpen their thinking power. With questions of the high-order thinking skills (HOTS) type, students can test the extent of their understanding of the material they have studied. In addition, these questions were also provided for various kinds and were equipped with feedback in the form of correct and incorrect answers, scores obtained, and explanations regarding correct answers. The lowest score was found in the statement item "Easy to understand instructions," with a score of 3.03. This finding shows that in good practice, question instructions are crucial for students because, through teachings, they can understand the intent of the questions and fill them in correctly. There was no additional comment regarding the exercise subsections contained in this interactive e-book. Overall, the student's perception of the exercises in the Advanced Grammar interactive e-book was good.

5. Practicality

There were 14 items responded to by the students. Overall, the students perceived good perception about the practicality of the interactive e-book (3.03). A detailed explanation and discussion about the students' perception on the practicality of the interactive e-book is presented in Table 6.

Table 6. Students' Perception of the Practicality of the Interactive E-book

Item	Statement	Response				MS	PL
		SD	D	A	SA		
1	The interactive e-book is portable.	0	3	11	18	3.47	Very Good
2	The interactive e-book can be used in various platforms, such as Windows, Android, and iOS and in various digital devices, such as PCs, tabs, and smartphones.	1	4	13	14	3.25	Good
3	The interactive e-book is shareable.	0	4	22	6	3.06	Good
4	The interactive e-book is easy to be read.	0	2	21	10	3.34	Very Good
5	The interactive e-book is easy to be used.	2	1	16	13	3.25	Good
6	The interactive e-book is easy to be stored.	0	4	21	7	3.09	Good
7	The contents of the interactive e-book can be copied and pasted.	0	7	19	6	2.97	Good
8	The contents of the interactive e-book can be copied and pasted.	0	8	16	8	3.00	Good
9	Annotations made in the interactive e-book can be exported into PDF file format.	2	8	17	5	2.78	Good

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10	The interactive e-book can be linked to external sources.	0	3	26	3	3.00	Good
11	The interactive e-book is easily accessible online and offline.	7	5	15	5	2.56	Good
12	The interactive e-book provides the table of contents that avoids disorientations and guides to the targeted page quickly.	0	8	19	5	2.91	Very Good
13	Its users can connect to online dictionary and encyclopedia to find certain words.	2	5	21	4	2.84	Good
14	The interactive e-book enables the students to look at the recent page they read.	2	7	16	7	2.88	Good
	Mean Score					**3.03**	**Good**

Based on the table above, the highest score was found in the statement "Portable interactive e-book," with a score of 3.47. This finding shows that the interactive e-books used by students can be taken anywhere and accessed whenever they want. Because the interactive e-book is in software form, students can access it on the web and in specific applications. Meanwhile, the lowest score was found in the statement, "Interactive e-books can be easily accessed online or offline," with a score of 2.56. In this case, students may have difficulty accessing some features because an internet connection is required. For this statement, several students expressed some negative comments, such as Student A, who argued that the application used to access interactive e-books would not open. Student C also expressed this sentiment, stating that the book's file size was too large, hampered access to interactive e-books. Student D also said that they could not access interactive e-books. Then, Student E noted the same thing as Student C: accessing the interactive e-book from the carrier application took a long time. Nonetheless, overall, students perceived that this interactive e-book is practical to be used as a learning medium that carries digital literacy for Advanced Grammar courses.

As presented above, students responded well to all aspects of the interactive e-book quality criteria. Among all elements, the training and interactivity aspects offered in it received the highest scores, with 3.25 and 3.22, respectively. Meanwhile, the lowest aspect is the practicality of interactive e-books, with an average score of 3.03. Although the score for suitability was the lowest among the other elements, it was still at the "Good" perception level, which ranged from 2.51 to 3.25. However, the average score for all aspects, namely 3.16, can be interpreted that students considered the interactive e-books to be used as learning media that carry digital literacy for Advanced Grammar courses. The results of Morris and Lambe (2017) showed that students perceived positively interactive multimedia e-books. Also, de Oliveira (2012) indicated that students had positive attitudes toward interactive e-books. However, some improvements are still needed in all aspects to produce interactive e-books that student users can very well receive.

From the findings above, the average score for the interactive e-book interface used in the Advanced Grammar class was high, 3.14. The average score indicates that students agreed with the interface presented in the interactive e-book by assessing that the e-book is interesting to them and sufficiently demonstrates feature functions. Students also had a good perception of it. However, some students had negative perceptions of some statements in this aspect, such as the ability to zoom (Item 13) and customize font size (Item 11). The statement that has the most negative perspective by students is that e-books allow student users to zoom in on the contents of the e-book. As well, 26% of students voted to disagree with this statement. One of the students also commented that due to the inability to magnify the screen, he could not see the screen correctly. This information shows that interface aspects can influence the usability of interactive e-books and impact product effectiveness, ease of learning, and enjoyment. Concerning the material contained in int-books, students can only read the material in detail

when this feature works correctly. Good and Bederson (2003) stated that an interface that can be changed by zooming in is a technique of visualizing information so that users can access more detailed information on one screen. Therefore, it is recommended that this interactive e-book be improved to provide features that change the display scale to a larger size. It can be accessed via several devices students often use, such as laptops and smartphones.

Then for the interactivity aspect, the number of students who chose to disagree decreased. The average score in this aspect was 3.22, which shows that students agreed with the interactivity of interactive e-books and had a good perception of the interactive e-books. Students did not provide further comments about this section. The highest average score for this aspect was for statement number 6 regarding user's interactions with multimedia which is part of the contents of the e-book (3.53). Furthermore, from the findings above, the navigation system that directs the search for the contents of the e-book and feedback that students can immediately get after doing the exercises was another critical feature that makes this e-book more interactive and well received by student users. These findings support Cheng (2014), who found that content control, speed and consistency of responses they receive, and personalized feedback on their actions are among the factors that influence the perception of interactions experienced by users. According to Moreno and Mayer (2007), there are five types of interactivities in a multimodal learning environment: dialoguing, controlling, manipulating, seeking, and navigating. When students can control the multimedia in an interactive e-book, such as by using the pause or play button or even deciding to continue the animation, it can be said that the interactive e-book is moderately interactive. Users of this interactive e-book can experience these five types of interactivities. In their research on how interactivity influences learner use of interactive functions in course management systems (CMS) and their online learning performance, Wei et al. (2015) found that combining multiple interactivities can improve learning outcomes. Thus, this interactive e-book is also expected to increase student learning outcomes in Advanced Grammar material because of the interactive element that can be experienced when using it.

In addition, the teaching materials provided in interactive e-books can support students in learning and practicing grammar at an advanced level. With the suitability of the material provided with the curriculum and syllabus (3.34), this interactive e-book has the exact requirements of a printed book. Learning materials must meet the research objectives stated in the curriculum and syllabus (Venegas, 2006). Materials must be adequate to achieve research objectives. Also, the material should be according to students' student's and be able to attract students to learn, be user-friendly, and have an attractive way of presenting material and exercises. Besides that, this systematic arrangement of material also supports the first stage in a scientific approach where students are invited to observe before getting new material cognitively. According to Nugraha and Suherdi (2017), the observing stage determines the level of interest of students in participating in learning because their curiosity is provoked at this stage. This study aims to increase the readiness of students to receive advanced/new knowledge. The loaded exercises also require a high level of thinking.

Finally, seen from the ease of use of this interactive e-book, the portable nature of the interactive e-book can support Advanced Grammar learning anywhere and anytime and improve student digital literacy.

Conclusion

Using digital literacy technology in the classroom is like fresh air for teaching and learning. In this era surrounded by technology, interactive e-books are an opportunity to support the teaching and learning process. From the studies that have been done, many improvements have to be made for interactive e-books used in advanced grammar. The three criteria sections - interface, interactivity, and content- had positive student perceptions. As has been said before that seeing students' perceptions of interactive e-books is vital for developers to make better interactive e-books and to see which parts have been provided students need to support them in using interactive e-books, and features must be improved. The student's point of view is essential because they are the users in the process.

Nevertheless, the findings of this analysis may not only add information to the previous and existing similar studies but may contribute to those interested in designing and integrating digital literacy media. Although this study was conducted on English students participated in Advanced Grammar program, the results may also be beneficial and applicable for other subject courses. Future researchers who may

also be interested in this topic can investigate the perception on digital literacy implementation in English language teaching and learning.

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