

# Lecturers' Perceptions on Interactive Grammar E-Book Used for EFL Learners

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## Abstract

There is no doubt that the fourth industrial revolution (IR 4.0), also known as digital or disruption era, influenced the way people live in the 21<sup>st</sup> century in many aspects including in education (education 4.0). It requires today's learners, especially English learners (since English is the medium of the digital world) to have additional skill such as digital literacy. In order to have this skill, today's educators should make the learners familiar with digital book to be used inside and outside of the teaching and learning classroom. Yet, the digital book that will be used needs to be evaluated. This research is a part of research and development done by Grammar teachers at English Department to see the lecturers' perception on *Advanced Grammar* interactive e-book. This descriptive research was conducted to four aspects of lecturers' perception on the interactive e-book: interface, interactivity, practicality and teaching materials. The sample was grammar lecturers who are teaching grammar class. These samples were asked to experience the interactive grammar e-book use and then they were given questionnaire adapting 63 statements on the perception aspects on the interactive e-book. The collected data were analyzed by using descriptive statistical calculation. It was found that the lecturers have positive perception on the interactive e-book designed to be used in teaching *Advanced Grammar* viewed from those four aspects. Thus, the e-book need to be improved to accommodate pedagogical English grammar.

**Keywords:** *perception, interactive e-book, grammar, EFL*

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## Introduction

The fourth industrial revolution (IR 4.0) changes the way students learn and the way educators teach these days, especially in English language teaching (ELT). English becomes the most preferred language to use in this digital era. Learners of the 21<sup>st</sup> century grow up with the development of technology around. They live using digital devices in hand and being online becomes their lifestyle. Hence, they can easily get information they want quickly. On the other hand, educators of the 21<sup>st</sup> century were challenged to keep looking for new approaches to learning that suit with the students' needs. A new approach called education 4.0 come to exist as a result of the IR 4.0. Hariharasudan and Kot (2018) states that "education 4.0 is technology-implemented upskilling in teaching and learning process". It means that the educators need to integrate technology with teaching and learning process to meet the students' preferences.

This can be done in many ways; one of them is by using technology-supported teaching materials (Padmavathi, 2016). The teaching materials used to be compiled in paper books, but now books evolved along with the development of the ICT to be produced digitally which are called digital books. Digital books are the last cycle of the book evolution (Bozkurt, Okur, and Karadeniz, 2016). They include electronic books (e-books) and interactive e-books. E-books are books designed in a completely digital format. Not only do e-books contain text materials, they are also equipped with other content such as video, images, graphics, audio clips, etc. Meanwhile, interactive e-books are the next generation of digital book. That the label "interactive" is stuck onto e-book changes the definition of e-book. Interactive e-books are the enhanced e-book that makes the users, the e-books themselves and environment (devices) interact with each other digitally at a high level (Bozkurt and Bozkaya, 2015; Bozkurt, Okur, and Karadeniz, 2016). What makes e-books and interactive e-books different is the interactivity level. The interactive e-books provide higher level of interactivity than the e-books do, so that they require users' active participation in handling the interactive e-books and their elements. Therefore, the output of information in the interactive e-books depends on the users' input. It means that digital books combine both technology and human capacities, as what was promoted in education in the fourth industrial revolution (Haron, 2018), namely integrating cyber technology into teaching and learning process.

In the previous research, Fitrawati and Syarif Hermawati (2018) have developed an interactive e-book to be used for EFL learners in a grammar course at a university in Padang, Indonesia, namely *Advanced Grammar Interactive E-book*, since English is the mostly used language in the IR 4.0 or digital age (Hariharasudan and Kot, 2018). This interactive e-book can be accessed both online and offline through desktop and/or mobile devices. Thus, the students are facilitated to learn more about the course anytime and anywhere, because university students are among the most Internet users in Indonesia, based on the survey result conducted by Indonesia Internet Service Provider Association and Polling Indonesia (2018). Moreover, the teaching materials in the interactive e-book are equipped by various interactive contents, such as videos, images, self-assessment exercises, and widgets. The videos and images can be used to help the teachers deliver the key point of a topic to the learners easier in an attractive way. Moreover, the teachers can evaluate the learners' understanding of a topic easily and quickly through self-assessment exercises that are able to give feedback such as scores, correct answers, and answers explanation immediately after the learners submitted their answers. Also, the interactive e-book has several widgets that enable the users to be connected to external sources (certain websites related to teaching materials) online and to communicate with the authors of the interactive e-book. In addition, this interactive e-book makes the users, the e-books themselves and environment (device) interact with each other digitally.

Since it is a developed interactive e-book and contain teaching materials, the lecturers need to evaluate it whether the interactive e-book meets the criteria of interactive e-books, it is appropriate or not for the learners, and it is practical or not. Bozkurt and Bozkaya (2015) defined evaluation criteria for interactive e-books that are classified into four core themes of the interactive e-books: content, interface, interactivity, and technology. First, content is the theme that is pedagogic perspective and highlight the importance of instructional design. In addition, it is important to consider material development principles developed by Tomlinson (2011), since the interactive grammar e-book contain grammar materials. Second, interface is the face of the interactive e-book by which users interact with it. This theme considers aesthetic and visual design properties. Third, interactivity is the theme dealing with interaction between users, interactive e-book and environment (device) that should provide higher interaction level. Technology is the theme which is related to hardware features and their functions.

Related to the evaluation of the interactive e-books as one of instructional tools, there are several previous research. First, a research that was conducted by Perdana (2013) is to develop an interactive e-book through several stages including design validation in three aspects: software, instructional design, and visual communication, by using questionnaire. The result showed that the interactive e-book is feasible but suggested some revision. Second, Najihah and Sanjaya (2014) also conducted a research that aimed to know the feasibility of the interactive e-book as media in chemistry subject in class X-Science of Public Senior High School 17 Agustus 1945 Surabaya in three aspects: content, presentation and language, by using questionnaire and resulted a valid interactive e-book. Third, a research conducted by Nugraha and Wasis (2014) aims to describe the validity, based on the component of illustrations presentation, linguistic, and material accordance with Competence Standard and Basic Competence applicable to high school in the tenth grade on material of heat, and student responses to the developed bilingual interactive e-Book. This research resulted that the interactive e-book fulfilled the criteria of feasibility. Fourth, Mawarni and Muhtadi (2017) conducted a research that aimed to develop an interactive digital book for students of educational technology and to reveal its feasibility in the aspects of media (namely display, programming, and advantages) and teaching materials by using questionnaire. This research resulted a very feasible interactive digital book. Lastly, a research that was conducted by Astuti and Muslim (2018) is about to determine the feasibility of interactive e-book on ASEAN material and e-book's quality for high school students of class XII by giving evaluation sheet to media expert. The result showed that the ASEAN e-learning interactive book deserves to be distributed or published. However, there is previous research neither about evaluating interactive e-book used for teaching grammar nor evaluating it in the aspect of interactivity.

Based on this background, this present research is the continuation of the previous study. The interactive e-book needs to be evaluated by lecturers to get valuable input from the feedback given. Then, the feedback is used to revise the interactive e-book before conducting the try out. The feedback can be obtained by knowing the lecturers' perception on the interactive e-book. Their perceptions will contribute to the development of the interactive e-book, whether the interactive e-book is appropriate or needs revision. Therefore, this paper aims to analyze the lecturers' perception on the four aspects of the interactive e-book. Accordingly, the following research questions are sought for:

1. What is the lecturers' perception on the interface of the interactive e-book?
2. What is the lecturers' perception on the interactivity of the interactive e-book?
3. What is the lecturers' perception on the usability of the interactive e-book?
4. What is the lecturers' perception on the teaching materials contained in the interactive e-book?

## Method

This research involved lecturers at English Department of a state university who teach Grammar course in the academic year 2019/ 2020 and/ or experience in teaching Advanced Grammar. There were 6 of 10 lecturers taken by using convenience sampling technique and participated in giving their perceptions on the interactive e-book.

The only instrument used in this research was an online questionnaire made by using Google Form. The questionnaire was preceded by the description of the survey and respondents' identities (names and e-mail addresses), and then followed by several statements indicating the display, interactivity, and practicality of the interactive e-book, as well as the teaching materials in the interactive e-book. Overall, there are 59 statements followed by four Likert's scales: Strongly Disagree (1 point), Disagree (2 point), Agree (3 point) and Strongly Agree (4 point). 47 statements were adapted and modified based on the requirements in e-book for teaching purposes by Lohr (2014), the review of e-book design criteria by Oyaid and Alshaya (2019), evaluation criteria for interactive e-book by Bozkurt and Bozkaya (2015), quality criteria of media e-book for advanced grammar teaching materials by Fitrawati and Syarif (2018), types of interactivity in multimodal learning environments by Moreno and Mayer (2007), and principles of teaching materials development (Tomlinson, 2011), while in relation to practicality of using e-book, 16 items of questionnaire related to usability were adopted from Elyazgi (2016). Earlier, an expert on educational technology in the state university were asked to review for content validity, clarity, and appropriateness, in relation to validating the statements of the questionnaire.

To collect the data, some procedures were gone through. First, the six lecturers were introduced to the three ways of accessing the interactive e-book: by visiting the website where the interactive e-book was published online, by installing the e-book reader software for desktop, or by installing the e-book reader app for Android. The interactive e-book is equipped with instructions for use once the lecturers open the interactive e-book, therefore, the lecturers were able to experience using the interactive e-book by themselves. Second, the lecturers were sent the link of the online questionnaire via e-mail. By clicking the link given, the respondents got access to give responses to each statements in the questionnaire. Lastly, all responses in Google Form were downloaded and then extracted, so that the collected responses (data) can be opened in Microsoft Excel. Then, the collected data were analyzed by finding the mean score for each sections. The mean scores (MS) were found based on the frequency of respondents who chose strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). Then, the mean scores were converted to the degree of perception (DP): very positive (VP), positive (P), negative (N), and very negative (VN) (Dwipayana, 2013). To decide whether the aspects of the interactive e-book needs revision or not was determined by negative perception.

## Results and Discussion

### 1. Results

The results of this research were presented in four sections. The first section was about lecturers' perception on the interface of the interactive e-book. The second section was about lecturers' perception toward the interactivity of the interactive e-book. Lecturers' perceptions about the teaching materials contained in the interactive e-book was probed in the third section. The final section loaded lecturers' perception toward the practicality of using the interactive e-book. The results were presented in the following table.

Table 1. The lecturers' perception on the interface of the interactive e-book

Sections	Aspects	Mean Scores	Degree of Perception
1	The interface of the interactive e-book	3.62	VP
2	The interactivity of the interactive e-book	3.50	VP
4	The teaching materials in the interactive e-book	3.18	P
3	The practicality of using the interactive e-book	2.96	P
<b>Average</b>		<b>3.46</b>	<b>VP</b>

The mean scores (MS) were found based on the frequency of respondents who chose strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). Then, the mean scores were converted to the degree of perception (DP): very positive (VP), positive (P), negative (N), and very negative (VN) The data description of each sections/ aspects are described below.

a. Interface

There are fourteen statements concerning the interface of the interactive e-book. The lecturers' perceptions toward this aspect can be seen in the table below.

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

No.	Statements	Responses				Mean	DP
		SA	A	D	SD		
1.	The layout design is simple, well-organized and straightforward.	4	2	0	0	3.66	VP
2.	The composition of colors and lettering is appropriate.	3	3	0	0	3.50	VP
3.	The placement of pictures and videos is appropriate.	3	3	0	0	3.50	VP
4.	The font used in interactive e-book is readable.	4	2	0	0	3.66	VP
5.	The font size is customizable.	3	3	0	0	3.50	VP
6.	The interface design is legible without fatiguing eyes.	4	1	1	0	3.50	VP
7.	The use of buttons, icons, and menu items are clear, understandable, and consistent.	3	3	0	0	3.50	VP
8.	The text in interactive e-book can be highlighted in different colors.	5	0	1	0	3.66	VP
9.	The interactive e-book offers note-taking on pages of the book.	6	0	0	0	4.00	VP
10.	The interactive e-book offers bookmarking multiple pages.	6	0	0	0	4.00	VP
11.	Page view is customizable.	3	3	0	0	3.50	VP
12.	The users can search keywords within the whole book or within chapter being opened.	4	2	0	0	3.66	VP
13.	The interactive e-book provides table of contents, which avoids disorientation and accesses relevant pages quickly.	5	1	0	0	3.83	VP
14.	Instructions for use in the interactive e-book are clear and understandable.	3	3	0	0	3.50	VP
15.	The users can select words to be spoken out (text-to-speech), browsed, shared, or copied.	3	2	1	0	3.33	VP
<b>Mean Score</b>						<b>3.62</b>	<b>VP</b>

Table 2 shows that the highest mean scores are for the statements number 9 and 10. They got 4.00 (strongly agree) which proved that all lecturers perceived very positively toward the ability of note-taking on pages of the interactive e-book and the ability of bookmarking multiple pages in the interactive e-book. Meanwhile, the lowest mean score is for statement number 15. It got 3.33 which shows one respondent perceived that the selected words cannot be spoken out. Nonetheless, the lecturers' perception on the statement number 15 was still categorized "very positive". Overall, the lecturers perceived very positively toward the interface of the interactive e-book.

b. Interactivity

There are fourteen statements focused on the interactivity of the interactive e-book. The answer for the second research question "what is the lecturers' perception toward the interactivity of the interactive e-book?" can be seen in the following table.

Table 3. Lecturers' Perception on the Display of the Interactive E-book

No.	Statements	Responses				Mean	DP
		SA	A	D	SD		
15.	The interactive e-book is complemented by interactive elements, such as 3D model, image carousel, video, gif, audio, popup message box, questions/ exercises, animations, links, and widgets.	2	3	1	0	3.16	P

Table 3. Cont

15	The users can interact with embedded objects, such as images, links, buttons, by touching, dragging, or clicking the objects.	2	4	0	0	3.33	VP
16.	The users can interact with the devices by changing orientation, shaking it, or other manipulations.	1	4	1	0	3.00	P
17.	The screen is able to be zoomed.	5	1	0	0	3.83	VP
18.	The users can navigate which chapter and sub-chapter of the interactive e-book to be opened.	5	1	0	0	3.83	VP
19.	The users can respond to questions posed in the interactive e-book.	2	4	0	0	3.33	VP
20.	The users can get feedback related to their scores, answer report, correct answers, and answer explanation after submitting their answers.	4	2	0	0	3.66	VP
21.	The users feel free to play, pause, and stop the videos in the interactive e-book, as well as display them in full screen.	6	0	0	0	4.00	VP
22.	The users can connect to hyperlinks by clicking on highlighted words or images on the screen.	4	1	1	0	3.50	VP
23.	The users can share annotations through their own social networks.	3	3	0	0	3.50	VP
24.	The users can handle page animation to be page-flip, card-flip, slide, or fade.	3	3	0	0	3.50	VP
25.	The user can communicate (i.e. giving comment or feedback) with the authors related to the interactive e-book.	2	3	1	0	3.16	P
26.	The users can be connected to online dictionary and thesaurus or encyclopedia for searching selected words.	4	2	0	0	3.66	VP
27.	The users can be connected to online dictionary and thesaurus or encyclopedia for searching selected words.	4	2	0	0	3.66	VP
<b>Mean Score</b>						<b>3.50</b>	<b>VP</b>

The data in Table 3 revealed that all lecturers strongly agreed with the statement number 22, stating that the users can interact with the videos, such as playing, pausing, stopping, replaying, or displaying them in full screen, by touching or clicking the buttons available. It got the highest score, 4.00, proving that the lecturer perceived very positively. Nonetheless, the statement number 17 got the lowest score that one respondent disagreed with the statement stating that the users can interact with the devices by changing orientation, shaking it, or other manipulations. Even though the mean score of the statement number 17 is 3.00, it is still categorized “agree” and indicated that the lecturers’ perception on such interaction is positive. However, there are some other statements got one negative response “disagree” for each, namely the statement number 15, 23, and 26, which deals with interactive contents; hyperlink connection; and users-authors communication. Still and all, the lecturers’ perception on this aspect is very positive.

#### c. Teaching Materials

There are twenty one statements indicating the teaching materials contained in the interactive e-book. The lecturers’ perception on this aspect can be seen in the following table.

Table 4. Lecturers’ Perception on the Teaching Materials of the Interactive E-book

No.	Statement	Responses				Mean	DP
		SA	A	D	SD		
29.	The materials are convenient with the curriculum and syllabus.	5	1	0	0	3.83	VP
30.	The materials are explicit.	3	2	1	0	3.33	VP

Table 4. Cont

31.	The materials are easy to be understood.	2	3	1	0	3.16	P
32.	The materials are provided systematically.	2	4	0	0	3.33	VP
33.	Examples provided are relevant with the materials.	4	2	0	0	3.66	VP
34.	The interactive e-book contains comprehensive materials.	1	4	1	0	3.00	P
35.	The interactive e-book prepares the materials with a theoretical framework that supports learning objectives.	2	4	0	0	3.33	VP
36.	The materials are appropriate for characteristics of the target audience.	3	3	0	0	3.50	VP
37.	The materials are presented attractively.	2	3	1	0	3.16	P
38.	The video materials used in interactive e-book are relevant to the topics being discuss.	4	2	0	0	3.66	VP
39.	Texts and illustrations related to learners' culture help them to learn.	2	2	2	0	3.00	P
40.	The materials help learners to develop confidence.	1	3	2	0	2.83	P
41.	Topics in interactive e-book are relevant and useful for learners.	2	4	0	0	3.33	VP
42.	The materials facilitate learners to make discoveries for themselves.	1	4	1	0	3.00	P
43.	The materials expose learners to language in authentic use.	1	2	3	0	2.66	P
44.	The learners' attention is drawn to linguistic features of the materials.	1	5	0	0	3.16	P
45.	The materials provide learners with opportunities to use the target language to achieve communicative purposes.	1	2	2	1	2.50	N
46.	The materials are suitable with different learning styles.	1	2	3	0	2.66	P
47.	The materials permit a silent period at the beginning of instruction.	3	2	1	0	3.33	VP
<b>Mean Score</b>						<b>3.18</b>	<b>P</b>

Table 5 shows that the statement no. 29 got the highest mean score that is 3.83. This proves that the majority of lecturers strongly agreed that the materials in the interactive e-book were compiled based on the curriculum and syllabus. Meanwhile, the statement no. 45 got the lowest score (2.50) showing that 50 % of the lecturers perceived negatively on that the materials enable learners to use the target language to achieve communicative purposes. Also, it seems that 65% of all statements got negative responses from the respondents. Nonetheless, the lecturers perceived positively on the teaching materials contained in the interactive e-book, with the mean score 3.18.

#### d. Practicality

There are ten statements indicating the practicality of using the interactive e-book. The lecturers' perception on this aspect can be seen in Table 4 below.

Table 5. Lecturers' Perception on the Interactivity of the Interactive E-book

No.	Statement	Responses				Mean	DP
		SA	A	D	SD		
48.	Interactive e-book has all functions and capabilities that users have expected.	1	4	1	0	3.00	P
49.	The content in interactive e-book technology is effective in helping users complete the tasks.	0	6	0	0	3.00	P

Table 5. Cont

50.	Users are able to complete their work efficiently using the interactive e-book.	1	4	1	0	3.00	P
51.	The information provided with interactive e-book is clear.	2	4	0	0	3.33	VP
52.	The system gives error messages that clearly tell me how to fix problems.	1	4	1	0	3.00	P
53.	Users are able to complete their work quickly using the interactive e-book.	1	4	1	0	3.00	P
54.	The interface of interactive e-book is pleasant.	0	5	1	0	2.83	P
55.	The information provided for the interactive e-book is easy to understand.	2	4	0	0	3.33	VP
56.	Users find it easy learning to operate interactive e-book.	1	4	1	0	3.00	P
57.	Interactive e-book provides attractive learning environment.	0	5	1	0	2.83	P
58.	Users' interaction with interactive e-book is clear and understandable.	0	6	0	0	3.00	P
59.	Users find it easy to become skillful in using interactive e-book.	0	4	2	0	2.66	P
60.	The actual process of using interactive e-book is pleasant.	0	5	1	0	2.83	P
61.	Users have fun using the interactive e-book.	1	3	2	0	2.83	P
62.	Users find it enjoyable in using interactive e-book.	1	2	3	0	2.66	P
63.	Users can effectively complete their work using the interactive e-book technology.	2	3	1	0	3.16	P
<b>Mean Score</b>						<b>2.96</b>	<b>P</b>

Based on the data shown in Table 4 above, the lecturers tend to have positive perception on the usability of the interactive e-book. Of all, two statements got very positive perception since they got the highest mean score 3.33, namely statement no. 51 and 55 stating that the information provided in the interactive e-book is clear and easy to understand. It indicates that the interactive e-book is easy to learn. In contrast, the statement no. 59 and 62 got the lowest mean score, 2.66. 50 % of the lecturers disagreed that using the interactive e-book made the users skillful easily and it is enjoyable. Nevertheless, it still categorized positive perception. Hence, the interactive e-book is usable enough.

## 2. Discussion

Based on the results above, it can be seen that the interactive grammar e-book meets the evaluation criteria of interactive e-book in the aspects of interface and interactivity, since the lecturers perceived very positively on those two aspects. It indicates that the interface of the interactive grammar e-book has been developed by considering the aesthetic and visual design properties. It also facilitates the interactions needed. It is supported by Usability.gov (2019) stating that "user interface (UI) brings together concepts from interaction design, visual design, and information architecture". Besides, it also indicates that the interactive grammar e-book provides two-way communication between users, interactive e-book itself, and devices that makes it interactive.

In the previous research, Fitrawati and Syarif (2018) studied students' need of using interactive grammar e-book. There are top five reasons why the use of e-book is demanded in learning Advanced Grammar. First, e-books are environment friendly. Now that e-books are the digital version of paper book, the use of wood as the main material for producing paper can be minimalized. Second, e-books provide online applications. The interactive grammar e-book is equipped by interactive elements; one of them is widget. Widget is mini application used in interactive e-books such as interactive questions, games, simulations, chatting application, and so forth. Third, e-books facilitate the learners to practice grammar by themselves. The interactive questions in the interactive e-book are self-assessment question. Thus, the learners will get feedback such as score, correct answers, and explanation, as soon as they finish answering the questions. Fourth, e-books are able to integrate audio visual, graphics, images, and animations. Since e-book is digital, those multimedia are possible to be input in the interactive e-book. Fifth, e-books give opportunity to the learners to choose which

grammar materials based on what they want and their level. These needs are covered by the interactive grammar e-book. It suits the students' needs.

Moreover, the results also shows that the interactive grammar e-book is practical, since the lecturers strongly agreed with its practicality. This result is in line with the result of research conducted by Embong et al. (2012) that found that 67% of the lecturers disagreed that e-book is not practical for young learners. This indicates that the interactive grammar e-book is able to provide effective solutions to problems that may appear when using e-book. Of the advantages of the interactive grammar e-book, its portability enables the users to bring it easier than the paper grammar books which are thick. It can be stored in many devices such as smartphones, tabs, notebook and laptops and can be accessed both online and offline. These advantages facilitate the learners to learn grammar anytime and anywhere. According to Indonesia Internet Service Provider Association and Polling Indonesia (2018), today's learners spend more time with digital devices and used Internet for messaging and social media rather than learning, so integrating technology with learning becomes their favorite (Golonka et al., 2014). Therefore, it is expected that the learners will learn grammar better when using interactive grammar e-book. Besides, the interactive e-book is user friendly since its interface has elements that are easy to access, understand, and use to facilitate interaction. Moreover, it enable the users to copy and paste the textual content if they want to share the point of the content to other users. It aggregates annotations, such as highlights, bookmarks, and notes that the users make, in one menu, so that the users can easily find them all together without flipping every single page. Then, the annotations can be exported to be PDF format file and saved in the users' devices. It also provides the ability to see last visited/saved page on the subsequent visits, hence the users will know what to read next whenever they reopen the interactive e-book. Those functions make the interactive grammar e-book practical and the lecturers strongly agreed with it.

That the lecturers have very positive perception on the interface and interactivity of interactive e-books indicates that the lecturers as digital immigrants have adapted themselves with the advancement of technology. This positive perception will lead them to use technology-supported instructional tools in the future. Besides, it suits the learners' preferences in the 21<sup>st</sup> century and education 4.0.

In the aspect of content (teaching materials) and practicality, the lecturers perceived positively as well. This indicates that the teaching materials have been developed based on the principles of material development and quite usable. However, the lecturers perceived that the teaching materials in the interactive e-book do not provide learners with opportunities to use the target language to achieve communicative purposes. While, Zhange (2009) and Tomlinson (2011) agreed that the materials should make the learners have the opportunities to use the language for communication. Since language is the media of communication and the purpose of teaching language is to make the learners be able to communicate with the language, it is very crucial to let the learners to use the language component they are learning, especially grammar which is about how words and sentences are formed to construct meanings. Therefore, it is important to develop grammar materials that promotes communicative purposes.

## **Conclusions**

The instructional tools function as aids in teaching and learning processes. However, the lecturers cannot use any tools. There are some factors to consider when choosing appropriate instructional tools which are in accordance with today's learners' preferences, so that the learning outcomes can be achieved. These days' learners prefer using technology in learning and interactive e-books are technology-supported instructional tools. Overall, the results indicate that the interactive grammar e-book is appropriate to be used as instructional media in teaching and learning Advanced Grammar in the four aspects (interface, interactivity, practicality and teaching materials), because the lecturers have very positive perception on it. However, the interactive grammar e-book needs revision or improvement in in the aspect of teaching materials (content), because the teaching materials have not provided the learners with opportunities for communicative purposes.

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## References

- Astuti, Winda Try and Muslim, Much Aziz (2018). Perencanaan dan Analisis E-Book Interaktif Materi ASEAN Semester Genap Kelas XII SMA. *Jurnal Informatika Sunan Kalijaga (JISKA)*, 2(3), 127–134. DOI: <http://dx.doi.org/10.14421/jiska.2018.23-01>
- Bozkurt, A., & Bozkaya, M. (2015). Evaluation Criteria of Interactive E-books for Open and Distance Learning. *International Review of Research in Open and Distributed Learning*, 16(5), 58-82. Retrieved on April, 1, 2019 from <https://files.eric.ed.gov/fulltext/EJ1077792.pdf&ved=2ahUKEwiEkN3asbvjAhVp8XMBHeyODTAQFjABegQIBhAB&usq=AOvVaw0vVUjxqL06P37V2bvirqk1&cshid=1563347184711>
- Bozkurt, A., Okur, M. R., & Karadeniz, A. (2016). Use of digital books at academic level: Perceptions, attitudes and preferences of post-graduate students. *International Journal of Human Sciences*, 13(1), 633-673. Retrieved on March, 30, 2019 from [https://www.researchgate.net/publication/292678242\\_Use\\_of\\_digital\\_books\\_at\\_academic\\_level\\_Perceptions\\_attitudes\\_and\\_preferences\\_of\\_post-graduate\\_students](https://www.researchgate.net/publication/292678242_Use_of_digital_books_at_academic_level_Perceptions_attitudes_and_preferences_of_post-graduate_students)
- Chen, Yuan (2015). *Perceptions of E-books Among Students and Instructors in Higher Education* (Graduate thesis, Concordia University Montreal, Quebec, Canada). Retrieved from <https://pdfs.semanticscholar.org/f019/4a97249d4d175231002270968eb78c55af66.pdf>
- Dwipayana, A. (2013). *Pengelolaan Sistem Pendidikan dan Pelatihan di Badan Pendidikan dan Pelatihan Daerah Provinsi Jawa Barat* (Doctoral dissertation, Universitas Pendidikan Indonesia). Retrieved from <http://repository.upi.edu/id/eprint3139>
- Elyazgi, M., Nilashi, M., Ibrahim, O., Rayhan, A. & Elyazgi, S (2016). Evaluating the Factors Influencing E-book Technology Acceptance among School Children Using TOPSIS Technique. *Journal of Soft Computing and Decision Support Systems*, 3(2), 11-25.
- Embong, A. M., Noor, A., Ali, R., Bakar, Z., & Amin, A. (2012). 'Teachers' Perceptions on the Use of E-Books as Textbooks in the Classroom'. World Academy of Science, Engineering and Technology, Open Science Index 70, *International Journal of Education and Pedagogical Sciences*, 6(10), 2638-2644. Retrieved on July, 10, 2019 from <https://panel.waset.org/author/razol-mahari-m-ali>
- Fitrawati and Syarif, Hermawati (2018). *Pengembangan Media E-Book Interaktif pada Mata Kuliah Advance Grammar di Jurusan Bahasa Dan Sastra Inggris Universitas Negeri Padang*. (pp. 1-65, Rep.). Universitas Negeri Padang.
- Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L. & Freynik, S. (2014). Technologies for Foreign Language Learning: A Review of Technology Types and Their Electiveness. *Computer Assisted Language Learning*, 2, 70–105. DOI: <https://dx.doi.org/10.1080/09588221.2012.700315>
- Hariharasudan, A. and Kot, Sebastian (2018). A Scoping Review on Digital English and Education 4.0 for Industry 4.0. *Social Sciences*, 7. DOI: <https://doi.org/10.3390/socsci7110227>
- Haron (2018). *Education in the Era 4.0* [Powerpoint slides]. International Conference on Information Management and Technology (ICIMTech 2018). Retrieved from <http://umpir.ump.edu.my/id/eprint/22486/1/Education%2520in>
- Hermaniar, Yulieda (2014). Workbook for English Drama by Incorporating Character Building for College Students. *Jurnal Pendidikan Humaniora*. 2(3), 211-218. Available online on <http://journal.um.ac.id/index.php/jph>
- Indonesia Internet Service Provider Association and Polling Indonesia (2018). *Hasil Survei Penetrasi Dan Perilaku Pengguna Internet Indonesia 2018* [PDF file]. Retrieved from <https://apjii.or.id/survei>
- Lohr, Manfred (2014). Ebooks as PDF Files, in Epub Format or as Interactive Ibooks? Digital Books in Physics Lessons of Secondary Education. 10th International Conference Mobile Learning 2014. Retrieved on May, 24, 2019 from <https://files.eric.ed.gov/fulltext/ED557240.pdf>
- Mawarni, Sella and Muhtadi, Ali (2017). Pengembangan Digital Book Interaktif Mata Kuliah Pengembangan Multimedia Pembelajaran Interaktif Untuk Mahasiswa Teknologi Pendidikan. *Jurnal Inovasi Teknologi Pendidikan*, 4(1), 84-96. DOI: <https://doi.org/10.21831/jitp.v4i1.10114>
- Moreno, Roxana and Mayer, Richard (2007)**. Interactive Multimodal Learning Environments, Special Issue on Interactive Learning Environments: Contemporary Issues and Trends. *Educ Psychol Rev*, 19, 309–326. DOI: <https://doi.org/10.1007/s10648-007-9047-2>
- Najihah, Safinatun and Sanjaya, I Gusti Made (2014). Pengembangan Model E-Book Interaktif Termodifikasi Majalah Pada Materi Struktur Atom. *Unesa Journal of Chemical Education*, 3(3), 100-104. Retrieved from <https://jurnalmahasiswa.unesa.ac.id/index.php/journal-of-chemical-education/article/view/9750>

- Nugraha, Dewanta Arya and Wasis (2014). Pengembangan Media E-Book Interaktif Bilingual Pada Materi Pokok Kalor Untuk SMA Kelas X. *Jurnal Inovasi Pendidikan Fisika (JIPF)*, 3(1), 1-7. Retrieved from <https://www.researchgate.net/publication/307575467>
- Oyaid, Afnan and Alshaya, Hessah (2019). Saudi University Students Views, Perceptions, and Future intensions towards E-books. *MOJET: Malaysian Online Journal of Educational Technology*, 7(1). Retrieved on May, 24, 2019 from <https://files.eric.ed.gov/fulltext/EJ1201631.pdf>
- Perdana, Dian Mahendra Bromantya (2013). *Pengembangan Buku Digital Interaktif (Budin) Berbasis Adobe Creative Suite pada Materi Genetika di SMK* (Under Graduates thesis, Universitas Negeri Semarang). Retrieved from <http://lib.unnes.ac.id/18853/>
- Tomlinson, Brian (2011). *Material Development in Language Teaching* (2<sup>nd</sup> Ed.). Cambridge: University Press.