



# Project Based Learning Based E-book Kvisoft Flipbook Maker for Grade V Elementary School

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## ARTICLE INFO

### Article history:

Received January 11, 2023

Accepted March 30, 2023

Available online April 25, 2023

### Kata Kunci:

Bahan ajar, PjBL, Kvisoft Flipbook Maker

### Keywords:

Teaching Materials, PjBL, Kvisoft Flipbook Maker



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## ABSTRAK

Saat ini masih banyak guru yang belum memanfaatkan teknologi dengan optimal. Berdasarkan hal tersebut, tujuan penelitian adalah mengembangkan e-book berbasis PjBL berbantuan flipbook maker Ubisoft di kelas V sekolah dasar. Jenis penelitian ini menggunakan Research and Development (R&D) dengan Model Pengembangan ADDIE. Data yang diperoleh dalam penelitian ini didapatkan dari hasil observasi, wawancara, dan tes. Instrumen yang digunakan dalam mengumpulkan data yaitu kuesioner. Penilaian validitas dilakukan oleh lima orang validator. Uji keefektifan yang melibatkan 35 siswa. Teknik analisis data yaitu analisis deskriptif kualitatif dan kuantitatif. Hasil penelitian yaitu nilai validitas bahasa adalah 79,33 (Valid). Validitas tampilan rata-rata adalah 80,20 (Valid). Validitas grafis adalah 86,00 (sangat valid). Validitas materi yaitu 82,42 (Valid). Hasil respon guru yaitu 83,33 (praktis). Hasil respon siswa yaitu 85,95 (sangat praktis). Hasil uji uji keefektifan menunjukkan hasil yang cukup baik yaitu nilai rata-rata 82,93 (sangat baik). Disimpulkan bahwa e-book berbasis PjBL berbantuan flipbook maker Ubisoft layak dan efektif digunakan dalam pembelajaran siswa sekolah dasar.

## ABSTRACT

Currently, there are still many teachers who still need to utilize technology optimally. Based on this, the research objective was to develop a PjBL-based e-book assisted by the Ubisoft flipbook maker in grade V of elementary school. This type of research uses Research and Development (R&D) with the ADDIE Development Model. The data obtained in this study were obtained from observations, interviews and tests. The instrument used in collecting data is a questionnaire. Five validators carried out a validity assessment. Effectiveness test involving 35 students. The data analysis technique is descriptive qualitative and quantitative analysis. The research results show that the language validity value is 79.33 (Valid). The mean view validity is 80.20 (Valid). Graphical validity is 86.00 (very valid). Material validity is 82.42 (Valid). The result of the teacher's response was 83.33 (practical). The results of student responses were 85.95 (very practical). The effectiveness test showed good results, namely the average value of 82.93 (very good). It was concluded that the PjBL-based book, assisted by the Ubisoft flipbook maker, is feasible and effective for elementary school students learning.

## 1. INTRODUCTION

The revolution in the world of information technology (IT) continues to grow rapidly, and humans already use IT in all activities. Along with the growth and benefits of IT, it raises several demands for implementation at a level that requires users to be able to use it as a management field and producer of the necessary information (N. M. P. I. Pratiwi & Suryanata, 2020; Siripongdee et al., 2020). One of them is the use of various media and facilities in the world of education. Education is a means to lead to the growth and development of the nation (Amran et al., 2020; Darmaji et al., 2019; Thornberg & Oğuz, 2016). Education is also a long-term human resource investment that has strategic value for the continuity of human civilization in the world. This is very reasonable because the history of the growth of IT itself comes from the world of education (Al-Hariri & Al-Hattami, 2017; Astuti et al., 2021; Goldschmidt, 2020). The use of IT in supporting academic administration and education management has brought the world of education to a more advanced and global stage. Instructional media that continues to be up-to-date and IT-based is a clear fact that the world of education cannot be separated from the growth of IT (Danniels et al., 2020; Razali et al., 2020). The need to obtain

information and access it quickly, precisely, easily, and without restrictions is the catalyst for the development of IT applications in education. One form of using IT in the world of education is the Electronic School Book (BSE) or e-book initiated by the Ministry of Education and Culture.

An e-book is a digital version of a book that generally consists of a collection of papers containing text or images, the vision of the e-book itself is as an alternative format for a book that can be downloaded and read easily at anytime and anywhere (Hadaya & Hanif, 2019; Ormancı & Çepni, 2020). E-books are one of the solutions provided by the government through the Ministry of National Education and Culture of the Republic of Indonesia to overcome the high cost of books currently available and to reduce deforestation as raw material for paper (Harjono et al., 2020; Watin & Kustijono, 2017). Based on a preliminary study conducted at SDN 159/III Semumu and SDN 037/III Koto Tuo it was found that these schools still use conventional printed books in their learning process, in which the teacher is only fixated on what is already in the book so that students quickly feel bored and less interesting with the same way of learning every day. In addition, the researchers also conducted interviews with teachers at the school and it was found that the school had sufficient facilities to use electronic-based books or e-books because the school already had projectors, laptops, and internet networks available for teachers to use.

Based on the facts above, it is possible that the two schools above can utilize technology in their learning process. One of the teaching materials that can be utilized is the use of e-books. E-books also have their advantages and disadvantages. The main advantage of e-books is that they can be divided into various types of electronic formats and can be printed independently (Filivani & Agung, 2021; Zarzour et al., 2020). The advantage for users or readers is that they can be downloaded from the internet quickly rather than having to visit a bookstore or library (Ibrahim & Alqahtani, 2018; Liu et al., 2021). In addition, e-books are also easy to find when searching (Raihan et al., 2018; Tambunan et al., 2020). Meanwhile, the drawbacks of e-books are that the current e-book technology is inadequate, including the cost of e-book reading tools which are relatively expensive, and the large readership of e-books. In addition, e-books are also less user-friendly because of their appearance, and are not disabled-friendly, especially for blind people who rely heavily on printed versions of Braille. Copyright is also a problem in e-books. Piracy is unavoidable for digital content that is easy to imitate.

In addition, with the use of a PjBL-based e-book, the learning process will be able to provide complete experience and knowledge to students directly. Application of learning that applies the Project Based Learning model students can design a problem and find a solution to the problem themselves (Chounta et al., 2017; Rahayu & Sukardi, 2021; Yustina et al., 2020). The PjBL learning model has its characteristic advantages, namely helping students design a process to determine an outcome, training students to be responsible for managing information carried out on a project, and finally, students who produce real products from their students and then present them in class (Izati et al., 2018; Marzuki & Basariah, 2015; Safaruddin et al., 2020). One application that can present interesting teaching material for students is the Kvisoft Flipbook Maker application. Kvisoft Flipbook Maker is a program created to convert PDF files into flipbooks or digital publications. In addition, PDF files can be converted into flipbooks, digital magazines, company catalogs, and more using this Kvisoft Flipbook Maker.

Regarding the studies and searches that have been carried out, several studies discuss the validity and development of teaching materials based on book-making applications. Previous research findings also reveal that the E-module used in learning is practical and can increase students' enthusiasm for learning (Asrial et al., 2020; Maulana et al., 2022; Misbah et al., 2021). Other research findings also state that E-books can help students learn because they are efficient and flexible (Hadaya & Hanif, 2019; Ormancı & Çepni, 2020). Other findings also state that E-books can be applied to learning (Filivani & Agung, 2021; Susantini et al., 2021). This research has an update from previous researchers. It can be seen from the researchers' learning model, namely Project Based Learning (PjBL). Therefore, researchers are interested in studying the validity of PjBL-based e-books assisted by Kvisoft Flipbook Maker in class V SD. Based on this, the research objective was to develop a PjBL-based e-book assisted by Ubisoft flipbook maker in grade V of elementary school. Hopefully, this e-book can be applied and used by all parties involved in education, especially elementary schools.

## 2. METHOD

The method used in this research activity uses Research and Development (R&D) with the ADDIE Development Model. According to Januszewski and Molenda (Cahyadi, 2019). The ADDIE model in designing instructional systems uses a systems approach. The essence of the systems approach is to divide the lesson planning process into steps, organize the steps into logical sequences, then use the output of each step as the input for the next. The ADDIE model is an instructional process consisting of five phases, namely analysis, design, development, implementation, and evaluation. The product to be developed by researchers in this study is a PjBL-based e-book featured by Kvisoft Flipbook Maker in Class V of Elementary Schools.

At the analysis stage, the researcher made observations and analyzed the needs of students. Furthermore, at the design stage, the data obtained from observation and analysis is used as a guide for making e-book designs that suit the needs of educators and students. At the development stage, the product that was

designed earlier is then developed again into a unit so that it can be used by educators and students in the learning process. At the implementation stage, the researcher tested the product that had been developed earlier on the students. In the evaluation stage, the researcher evaluates the trial results and improves the product according to the evaluation carried out. This activity is done at SDN 037/III Koto Tuo, SDN 038/III Koto Payang, and SDN 159/III Semumu.

Data collection activities in this study used instrument validity sheets, teacher and student response questionnaire sheets, as well as questions to test the effectiveness of teaching materials. For the Instrimunet validation sheet, five validators will be given with expertise in their respective fields, such as one validator for the language section, one validator for the content section, one validator for educational practitioners, and two validators for product design. As a comparison, teacher response questionnaire sheets will be given to 3 teachers and student response questionnaire sheets will be given to 35 students and will be given questions related to the material being studied in the teaching materials developed. The standard of validity score and category using this criterion in Table 1. The procedures used in determining the level of practicality of products made are showed in Table 2.

**Table 1. Validity Criterion**

No	Percentage	Category
1	25 – 43	Very Invalid
2	44 – 62	Invalid
3	63 – 81	Valid
4	82 – 100	Very Valid

**Table 2. Category determination level practicality**

No	Range (%)	Category
1	0 – 54	Unpractical
2	55 – 59	Less Practical
3	60 – 74	Pretty Practical
4	75 – 84	Practical
5	85 – 100	Very Practical

From the description of the table above it can be stated that teaching materials are said to be practical if they reach an average score of  $\geq 75$  -84. The effectiveness test of the e-book developed by the researcher focuses on cognitive aspects so that in determining the e-book is effective, it can be seen from the achievement of the scores obtained by students. If many students get scores above the minimum learning completeness, then this teaching material is said to be effective. For SDN 037/III Koto Tuo, SDN 038/III Koto Payang and SDN 159/III Semumu have a minimum learning completeness standard of 70. The data analysis technique used is descriptive qualitative and quantitative analysis.

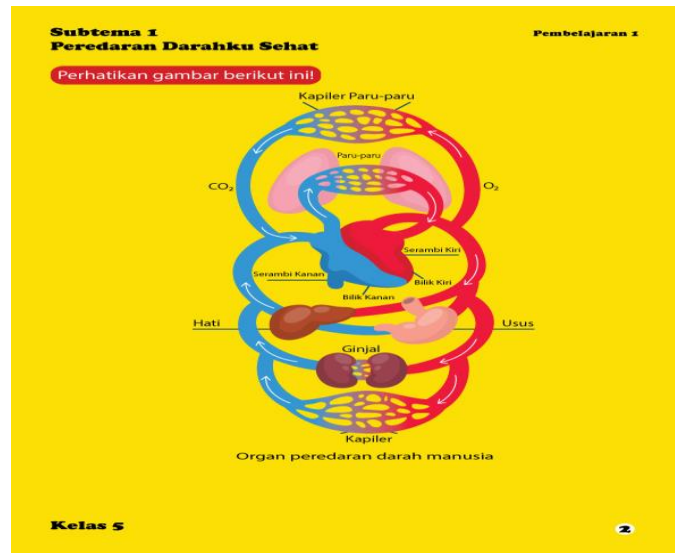
### 3. RESULT AND DISCUSSION

#### Result

Based on the results of the research that has been done, it is obtained that the PjBL-based e-book design is assisted by kvisoft flipbook maker in class V of elementary school which contains material on theme four, healthy is important with sub-theme 1 my blood circulation is healthy. This e-book has gone through the stages of validity so that it can be used by educational actors to be used in the learning process. Aspects that are assessed for validity are language aspects, content aspects, presentation aspects and graphic aspects. The validity assessment was carried out by five validators, consisting of 4 lecturers from the Faculty of Education, Padang State University and one education practitioner who is a teacher with a Master of Education degree. Furthermore, the practicality test used two instruments, namely the teacher response questionnaire with two aspects and nine statement items and the student response questionnaire with ten statement items. Besides that, it also used an effectiveness test involving 35 students with 35 questions with details of 25 multiple choices and ten essays. From the data collected and analyzed in the three tests above, this e-book can be used as an alternative teaching material for teachers in presenting complete experience and knowledge to students in accordance with the educational goals of the 2013 curriculum.

The data is gotten from observation and analysis that have been done at schools in the Depati regency; they are SDN 037/III Koto Tuo, SDN 038/III Koto Payang dan SDN 159/III Semumu. The researcher found out that these schools do not have the e-book yet to be used in the teaching-learning process, otherwise there are some qualified tools to execute technology base learning yet teachers did not do that. Furthermore, it is found that the students in those schools like reading books with a lot of enchanting pictures and fewer sentences. According to that information, the researcher took the next step to designing. The researcher designed an e-book

base on the available information that has been collected by observation and analysis. The researcher designed an e-book based on *Project Based Learning* featured by *Kvisoft Flipbook Maker*. The results of the development of the E-book are presented in [Figure 1](#).



**Figure 1.** The Development of The E-Book

The validity test is done on a PjBL-based e-book featured by *Kvisoft Flipbook Maker* in the fifth grade of elementary students that have done by an expert in their field. There is one person who is got a master's degree and is active in the education world and there are four lecturers from the faculty of education at Universitas Negeri Padang. The validity of e-books is have met such aspects as language validity, content validity, display validity, and graphic validity. The score of the validity test on the use of language could be seen in table two which has six scoring criteria. Language Validity showed in [Table 3](#).

**Table 3.** Language Validity

No	Scoring Criteria	Validity Score	Category
1	The sentence is compact base on <i>kaidah bahasa Indonesia</i>	85.00	Very Valid
2	The use of language is effective and efficient	82.00	Valid
3	The use of <i>bahasa Indonesia</i> spelling	75.00	Valid
4	The use of language is short, concise, and understandable	78.00	Valid
5	The clearness of information	78.00	Valid
6	the written term is compacted with PUEBI	78.00	Valid
<b>Average</b>		<b>79.33</b>	<b>Valid</b>

According to this table about language validity, there are six aspects of scoring criteria. The score of language validity is 79,33, which means the language validity is valid. The score of valid to a very valid category is around 78,00-85,00. Content Validity showed in [Table 4](#).

**Table 4.** Content Validity

No	Scoring Criteria	Validity Score	Category
1	The compatibility of the e-book is made based on Kompetensi Inti (KI) and Kompetensi Dasar (KD)	85.00	Very Valid
2	the e-book is made by providing information about the theme, subtheme, material, KI, KD, indicator, and the purposes of the study	80.00	Valid
3	Having proper information regarding the material that should be taught	80.00	Valid
4	There are tests similar to exercises for the student	85.00	Very Valid
5	There are instructions in material	100.00	Very Valid
6	Compact with the student's needs	80.00	Valid
7	The e-book is relevant to the students' problem with learning	80.00	Valid
8	The compaction of e-books and e-book substances	80.00	Valid

No	Scoring Criteria	Validity Score	Category
9	Could be an effective communication tool between students and teachers	80.00	Valid
10	The compaction between the social and moral value of the e-book	80.00	Valid
11	Suitable and have the steps of PjBL	100.00	Very Valid
12	Having assessment in e-book	80.00	Valid
<b>Average</b>		<b>84.16</b>	<b>Very Valid</b>

According to this table, content validity has twelve aspects in the scoring criteria. The content validity is 84,16, which means the content validity is very valid. The range of valid to a very valid category is around 80 – 100.00. Display Validity showed in [Table 5](#).

**Table 5. Display Validity**

No	Scoring Criteria	Validity Score	Category
1	The clearness of the indicator purposes in the e-book.	85.00	Very Valid
2	E-book systematic	78.00	Valid
3	The ability of e-books in motivating students to study	80.00	
4	The ability of e-books in encouraging students to interact with others in the class	78.00	Valid
5	The E-book has a complete information	80.00	Valid
<b>Average</b>		<b>80.20</b>	<b>Valid</b>

According to this table, the display validity has 5 aspects in scoring criteria. The average display validity is 80,20, which means the validity of the display is valid. The range of valid to a very valid category is around 78 – 85.00. Graphic Validity Criterion showed in [Table 6](#).

**Table 6. Graphic Validity Criterion**

No	Scoring Criteria	Validity Score	Category
1	The display of the e-book is using various fonts and suitable sizes.	85.00	Very Valid
2	The layout of the e-book is organized	85.00	Very Valid
3	The E-book is using various proponents like audio, video, picture, etcetera	85.00	Very Valid
4	The design of the e-book is interesting and not dull.	89.00	Very Valid
<b>Average</b>		<b>86.00</b>	<b>Very Valid</b>

According to this table, graphic validity has four scoring criteria. The validity score is 86,00, which means the graphic of validity is very valid. The valid to very valid category score is around 85.00 – 89.00. After analyzing the aspects of the validity test, then the researcher determined the average score of e-book validity PjBL-based featured by kvisoft flipbook maker in fifth grade if elementary students, started by language, content, display, and graphic. Based on data analysis, the average score for each aspect of material validity is around 79,33 to 86,00. After calculating, the average for all aspects is 82,42. It means the validity of the PjBL-based e-book featured by the kvisoft flipbook maker in the fifth grade of elementary students is valid.

Furthermore, the practicality test was carried out using two instruments, namely the teacher's questionnaire sheet and the student's questionnaire sheet. Teacher questionnaire sheets were given to three teachers to provide feedback on the teaching materials being developed. While the student questionnaire sheet totaled 37 students which aims to find out how they respond to the teaching materials that have been developed. Following are the results of the teacher's response questionnaire which consists of two aspects of assessment, namely the practicality aspect of presentation with eight questions and the time aspect with one question.

Based on data analysis regarding the results of the teacher's response questionnaire consisting of three teachers with 9 question items the average practicality score is 83.33, where this number is included in the Practical category. After testing the teacher's response questionnaire, the next step is to test the student's response questionnaire based on the e-book used in the learning process. The student response questionnaire involved 35 students and four aspects of assessment, namely attractiveness, process of use, ease of use and evaluation, with ten question items.

Based on data analysis regarding the results of the student response questionnaire which consisted of 35 students with 10 question items the average practicality score was 85.95, where this number is included in the Very Practical category. After the practicality test phase was completed, the next step was to test the effectiveness of the e-book which was developed involving 35 students. The mechanism for testing this effectiveness is to provide students with questions that are designed in such a way that takes into account the HOTS question categories regarding the material contained in the teaching materials being developed. The

number of questions is 25 multiple choice questions and ten questions in the form of descriptions. The following are the cumulative results of the 35 students who have worked on the problem. Student Cumulative Grades showed in Table 7. Based on the table above, the e-books used in the three schools through an effectiveness test showed quite good results, namely the average score of the three schools above 70, namely 82.93, was included in the good category so that this e-book could be applied and used.

**Table 7. Student Cumulative Grades**

No	School's Name	The number of students	Total Score	Average	KKM	Information
1	SDN 037/III Koto Tuo	12	962.17	80.18	70	Good
2	SDN 038/III Koto Payang	15	1275.50	85.03	70	Very Good
3	SDN 159/III Semumu	13	835.83	83.58	70	Good
	Total	37	3.073.50			Good
	<b>Average</b>			<b>82.93</b>		

## Discussion

The researcher's observation is done in a school that used e-books and technology. The researcher interviewed the teacher in the fifth grade of elementary school and some students there. From the interview, it is found that the teaching-learning process is still using conventional printed books without awareness of the student's needs and interests also the use of the learning model did not encourage students to be active and creative. This is not suitable for the 2013 curriculum itself. 2013 curriculum makes students do observation, ask, and reason for the material (Maharani, 2015; Suyanto, 2018; Thooyibah et al., 2019). Students are given the subject based on the integrated theme so the students get material about the environment, life, and a strong personal foundation in social life and better creativeness (Astiningtyas, 2018; Wulandari, 2020). Learning by using the 2013 curriculum, the teacher should use the integrative theme, scientific approach, and authentic assessment (Rohita et al., 2018; Tiara & Sari, 2019; Wulandari, 2020). An integrative theme is the combination of some subjects to become one theme. A scientific approach is an approach carried out by asking, trying, and reasoning, while an authentic assessment is an assessment to measure all attitudes, skills, and knowledge according to process and result (Malinda et al., 2021; Syahroni et al., 2016).

From the results of the analysis that has been carried out earlier, then enter the design stage. At this stage, the researcher will design the e-book according to the needs encountered by researchers in the field, namely the development of PjBl-based e-books assisted by kvisoft flipbook makers in grade V elementary schools. This e-book will later present material in a more varied form such as sound, video, and pictures. Functionally, Kvisoft Flipbook Makers can attract students to read and make it easier for them to gain knowledge about concepts quickly and wherever they are" (Oktaviara & Pahlevi, 2019; Suyasa et al., 2021). Kvisoft flipbook maker is an application that supports learning as a medium that will help in the learning process because this application is not fixated on just writing but can include motion animation, video, and audio which can make an interesting interactive learning media so that learning is not monotonous (Andani & Yulian, 2018; Triwahyuningtyas et al., 2020). With this diverse presentation method, all the needs of students for learning materials will be fulfilled. The students themselves consisted of individuals who had different characteristics in learning, some students had the type of audio learning, some had the type of visual learning, some had the type of audio-visual learning, some students had the type of feeling and motor learning (Nurmayani et al., 2017; Yuliastini et al., 2020)

The next step is development. In this step, the researcher concretized the result of design plan. The prepared design one would be developed fitting the students need. The researcher would prepare some audio and video that would be put in the e-book. It is hope the students get immediate experiences, motivate and make learning process more interesting and to increase students creativity, to realize that goals, the researcher used PjBl on the e-book. The project-learning contains complex tasks that give students the opportunity to design product, develop it, and increase their creativity (Hairida & Junanto, 2018; Saad & Zainudin, 2022). Furthermore, PjBl is one of collaborative learning, due to the characteristics on the learning model that emphasizes students actively learning, grouping and sharing information in order to other students with insight (Elisabet et al., 2019; Pratiwi et al., 2018; Sudira et al., 2022).

The next step is implementation. After the validity of e-book verified, the e-book would be implemented in elementary school. For the trial, the researcher used projector to show the e-book in front of class. Then, the researcher gave a test to the students to see their response after using e-book. The last step is evaluation. The researcher used result from the test was held in school to be a data for evaluate the e-book. The researcher did the last revision on e-book based on the data from the evaluation. The validity test that displays the results of this e-book is related to the four aspects of the assessment, namely language, content, presentation, and graphics found to be in the very valid validity category. The designed e-book can be included in the very valid category because the process of designing an e-book goes through many things, one of which is revision or suggestions for

improvement from validators who are experts in their respective fields (Rahim et al., 2020; Suyatna et al., 2018). Based on the results of the validation carried out by the validator, the teaching material product created is an e-book that can be used as a reference or alternative teaching material for education practitioners in elementary schools, especially in grade V elementary schools.

The aspect of assessing the validity of the language lies in the range of valid categories because the indicators assessed are in the aspect of language, one of which is the effective and efficient use of language, the language used is short, concise, and easy for students to understand, the way of writing terms in writing is appropriate according to PUEBI and the use of correct Indonesian spelling. Good teaching materials must be following PUEBI because it will make it easy for other people who read the teaching materials to understand them (Buchori & Rahmawati, 2017; Muzijah et al., 2020). Furthermore, the assessment of the validity of the content aspect lies in the very valid category range, because the indicators assessed are on the content aspect, one of which contains the suitability of the material with KI and KD. The assessment obtained is in line with research which states that appropriate teaching materials are teaching materials whose contents are following core competencies and basic competencies in learning (Sadimin et al., 2017; Syahril et al., 2021). In addition, the teaching materials are also given material exercises for participants so that they will make students understand the lesson well.

Furthermore, the assessment of the validity of the presentation aspect is categorized as a valid category because one of the indicators of the assessment instrument is the clarity of the formulation and indicators, as well as the presentation of the steps from the PjBL model used in the e-book. Then the graphical assessment aspect lies in the very valid category range because all the indicators of the assessment instrument are in the very valid category. This happens because of the preparation of the front view, the size and type of font used, animation, or supporting sources that can attract the attention of students during the learning process (Mabsutsah & Yushardi, 2022; Rahmatunisa et al., 2022). According to the validity test, the PjBL-based e-book featured a kvisoft flipbook maker in fifth-grade students in elementary school is an e-book that is worthy as a source for alternative material in learning to teachers and students. So the material could be various and attract the students and the students will get an experience and knowledge from learning.

#### 4. CONCLUSION

Based on the validity test carried out for Pjbl-based e-books assisted by the kvisoft flipbook maker, the average value of all aspects of validity is classified as very valid. The results of the practicality test assessed from the teacher's response questionnaire and the student's response questionnaire were classified as very practical. It was concluded that the Pjbl-based e-book assisted by Kvisoft Flipbook Maker is classified as very valid and practical so that it can be used for learning in elementary schools, especially fifth-grade elementary schools.

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