

DEVELOPING A POP-UP BOOK AS MEDIA FOR TEACHING ENGLISH NUMBERS TO KINDERGARTEN STUDENTS

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ABSTRAK

Procurement of teaching media to teach language is one of the teaching strategies to improve student's language skills, especially vocabulary knowledge. Students will be more engaged in learning if the media is adjusted to their needs. This research is development research. The purpose of this research was to develop a pop-up book of English numbers as teaching media for kindergarten students in Zonakata Kindergarten School. The writer used three phases of the ADDIE concept which are Analyze, Design, and Develop phases to develop the product in this research. The Analysis phase was done by interviewing with the teachers of Zonakata Kindergarten School to discover the teachers' and students' needs for developing

the product and analyzed by using thematic analysis. The design phase was done by designing the content of the pop-up book based on the results of the analysis phase. The book consists of numbers from 1 to 10 with attractive pictures and pop-up techniques on it. The development phase was done by using the Canva application to design the content of the books and checked it towards the assessment rubric to create a better product. Based on the result of validation, the product has met the criteria to be used as teaching media by the teacher. By using this research product, the students attract to learn and easier to acquire English numbers.

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INTRODUCTION

The fundamental ability of vocabulary knowledge is what kindergarten-aged need to acquire in order to improve their English abilities. Vocabulary is an increasingly important area in building English language skills. Without mastering vocabulary, improving English language skills such as speaking, writing, listening, and reading will be difficult. Susanto (2017) stated that acquiring vocabulary is essential to learning a language and if a student who lacks sufficient vocabulary will struggle to master all

aspects of language. The vocabulary is the tool that language users use to convey their thoughts, feelings, and opinions—an expression of the human mind which from a linguistic standpoint, the vocabulary appears to be more essential and helpful than the grammatical function (Dakhi & Fitria, 2019). This proves that vocabulary is essential both in spoken and written language skills especially English. While vocabulary is an important component in learning a language, in the EFL context, vocabulary is still a problem to learn by kindergarten students. This reason raises students' disinterest in learning English vocabulary. Therefore, teachers need interesting media to help them in teaching vocabulary.

As a good teacher, especially those who teach kindergarten students, it is necessary to provide appropriate teaching media to support the teaching process in the classroom. Pop-up book is one of the media that can be used by teachers in the teaching process. Pratiwi et al. (2020) developed a pop-up book to improve kindergarten students' language, especially in retelling abilities. Sari & Suryana (2019) also investigated the utility of pop-up book in teaching English. They developed Thematic Pop-up Book products as learning media for early childhood languages. They found that pop-up book media products get a positive response from children and teachers. The researcher chooses Zonakata Kindergarten School. Zonakata Kindergarten School is an inclusive language school that begins an early literacy program for kids ages 2 to 8 established in 2014 that located on Jl. Pulau We 178 in Pontianak, Indonesia (Darsini, 2017). It is one of the bilingual-inclusive schools in Pontianak which is using the bilingual system in the teaching and learning process in the school. In this research, the researcher designed a Pop-up book as a media for teaching by using the development research. This research aims to help the teachers in teaching numbers by using Pop-up book for Zonakata kindergarten students. By using this research product, the students will not get bored and will be easier to acquire vocabulary since the researcher developed a product with a 3D visual that will encourage them to learn.

Teaching vocabulary knowledge is not enough for early childhood to grasp the meaning of words; they also should comprehend how and when to use the words. To communicate effectively in a language they do not natively speak, like English, someone must first be knowledgeable with the language's vocabulary (Sari & Aminatun, 2021). In English vocabulary, numbers are the fundamental vocabulary. There are shreds of evidence that there is a correlation between numbers and language development in children's life. Sarnecka (2014) argued that as English is a singular/plural language, it distinguishes between sets of one and sets of two or more. This argument can be defined

that there is a singular and plural use in English, for example, by using the suffix -s/-es to differentiate the number of objects meant. This method can demonstrate that children who learn a language with a singular/plural system will grasp the meaning of a number more quickly.

Teaching media can be an alternative learning tool in conveying learning material. To attain learning objectives, teachers might employ instructional resources that are pertinent to the subjects that their students are studying. A teacher of English can communicate with their students more effectively and aid them in achieving their language learning objectives by using the proper teaching media (Hanif, 2015).

Young children are hard to maintain their focus in the teaching and learning process, moreover for the disabled students. Nazaruddin & Efendi (2018) explained mentally disabled children's behaviors are typically identified in a variety of ways, including (1) neglecting others, (2) making an appearance hurtful to others' needs, feelings, and thoughts, (3) refusing to discuss or express facial expressions when speaking, (4) avoiding touch (going to refuse to hug or hold), (5) being unable to cooperate, share, or wait their turn, and (6) favoring to play alone, and (7) There is less enthusiasm for games that require creativity. As a result of the statement, it can be inferred that teachers must discover solutions to issues and provide relevant teaching materials that are engaging for students in order to gain their attention and focus.

A pop-up book can be an option for teaching media that can support the student's understanding. A pop-up book is a three-dimensional movable book that consists of attractive words and pictures that pop-ups on a piece of paper, which can come up if the book is open and back to flat when it is close, to attract the readers and easier to understand the materials (Hiebert, 2014; Pratiwi, Sugito, & Subandowo, 2020; Ruiz, Le, Yu, & Low, 2014). At the end of the day, pop-up book is a tool for entertainment as well as helpful learning material in the sphere of education. Indeed, many types of pop-up books are created using different approaches or processes to make them more engaging and distinctive. Pop-up books apply a variety of processes, including page turning, holes, pull-and-twist, three-dimensional display, and texture, to highlight the interaction between readers and the book and its functionality, thus encourages readers' creative thinking, cognitive ability, and visual experiences, which heightens reading interest and accomplishes interactive learning (Ma & Wei, 2016). Every technique provided an attractive visual effect. In this research, the researcher used v-fold, floating layers, and pull-strip to present content or images in the book in 3 dimensions.

RESEARCH METHOD

The researcher developed a teaching media by following the methodological steps in the development study. It is a process used to design, develop, and evaluate an educational product that can increase knowledge and as the solution for the complex problem in the process of teaching and learning (Van den Akker et al., 2013). The product that is being created can be such as books, instructional audio, instructional videos, websites, applications, etc. In this study, the researcher created a pop-up book that contains numbers with pictures decorations, and 3D visuals by using Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model to create the product. Due to the time limitation of conducting this research, the researcher tends to focus on doing three phases only, which are analyze, design, and develop (ADD). The participants were the two teachers of ZonaKata Kindergarten School who teach kindergarten students. The students that the teacher taught are disabled and non-disabled students.

Instrument

The researcher conducted a semi-structured interview and assessment rubric as an instrument to collect the data. The interview contains 8 questions regarding the learning process, existing teaching media, characteristic of the students, and so on. Through these questions, the researcher was expected to get the information and could identify the product gap from the two teachers of Zonakata Kindergarten School. The interview questions are provided in Table 1.

Table 1. Interview Questions

No.	Interview Questions
1.	Could you describe the character of your students? Do they have a problem in learn their problem?
2.	Could you describe how the learning process in the class is?
3.	Could you tell me what your students' needs in learning numbers are?
4.	Could you tell me what media do you usually use to introduce numbers?
5.	Could you describe the obstacles while introducing numbers to your students?
6.	Have you ever used a book to introduce numbers to your students? If yes, what kind of the book did you use?
7.	Have you ever used a pop-up book to introduce numbers to your students?
8.	Do you have any suggestion for the design of the pop-up book?

The assessment rubric served to validate the product. It was adapted and modified from (Henry, 2006) to meet the criteria to be used as teaching media by the teacher to

teach English Number. This rubric was filled by Mrs. Z, a psycholinguist which expert in numeracy and literacy skill of children to serve as a validator. The rubric is provided in Table 2.

Table 2. Assessment Rubric

Criteria	High		Medium		Low	
	25 points	20 points	15 points	10 points	5 points	0 points
Cover	Includes a title, author name, neat and creative.	The cover is not very neat and creative but included all items.	The cover is so-so and there is one item missing.	The cover is messy and there are two items missing.	The cover is messy and there are three items missing.	Missing all of the items.
Grammar and Spelling	There are 1-2 spelling or grammar mistakes.	There are 3-4 spelling or grammar mistakes.	There are 5-6 spelling or grammar mistakes.	There are 7-8 spelling or grammar mistakes.	There are 9-10 spelling or grammar mistakes.	There are more than 10 spelling and grammar mistakes.
Content	The content is complete (10 numbers are delivered) and every page has page number.	The content is complete, but page number missing.	One content is missing and page number missing.	There are 2-3 content missing and page number missing.	There are 4-5 content missing and page number missing.	Missing all of the items.
Illustration/Pictures	Every page has at least one illustration or picture and pop-up. It is neat, colorful, and creative.	Every page has at least one illustration or picture and pop-up, but not very neat, colorful, and creative.	One page does not contain an effective illustration or picture and pop-up.	Two pages do not contain an effective illustration or picture and pop-up.	Three pages do not contain an effective illustration or picture and pop-up.	More than four pages do not contain an effective illustration or picture and pop-up.
APA Bibliography	All sources are correct.	One source is error.	Two sources are errors.	Three sources are errors.	Four sources are errors.	More than five are sources errors.

Data Analysis

The data has been collected was analyzed by using the thematic analysis technique. It is a kind of qualitative analysis method that can assist a researcher to analyze the data and use across a range of epistemologies and research questions (Nowell et al., 2017). In conducting this research, the researcher did three steps. The first step was familiarization; the researcher reread the transcribed audio that was conducted during the interview and organized the data of the assessment rubric to develop a thorough grasp of the collected data. The second step was coding the data; the researcher was highlighting the important phrases or sentences that were relevant to the research and came up with the codes which obtained a brief overview of the main points relevant to the research that appeared throughout the data. The last step was to find out the theme; the created theme assisted the researcher in classifying the codes that were found previously and deciding which code was very relevant and appropriate for the data for the research purpose. The researcher used initials for the research participants, for example, Mrs. X for the first teacher and Mrs. Y for the second teacher. After finishing the all of procedures, the researcher listed the essential points of the product design. The result of the data analysis used to develop the product. In addition, the research conducted a validation of the product to make the product better. The result of the validation was done by a validator who given the initial Mrs. Z.

FINDINGS AND DISCUSSION

FINDINGS

a. Analysing Phase

The analyzing phase in this research was done through a semi-structured interview with the two teachers to get the information about the teaching and learning numbers activities of the Zonakata kindergarten students and to identify what kind of pop-up number book that is suitable for students. The following statements are the key points of the previous data that were already polished by the researcher based on the teachers' viewpoint:

- 1) Students are more engaged in learning media that may be utilized to teach counting concepts as well as recognizing number symbols.
- 2) Students need books with colorful and appealing illustrations to keep their interest while studying numbers.
- 3) Students with special needs, such as speech delay, who cannot speak well, require learning media such as story books to help them understand and

recognize numbers.

It can be concluded that the pop-up book should be made attractive with colorful and appealing illustrations which can be utilized to teach counting concepts and recognizing the symbol of numbers and make easier for the students to grasp the material.

b. Designing Phase

The researcher conducted this phase by designed a pop-up book to teach numbers based on the needs of the students as well as teacher suggestions based on the results of analysing steps. The beginning step is determining the content of the book which is focusing on numbers. The content not only showed the symbol and the word of numbers, but also had attractive pictures and colorful to get the attention of the students. To determine the picture in the book, the researcher decided to select several themes based on the themes listed in kindergarten syllabus of curriculum 2013 used by the teachers. In the syllabus, the researcher found various themes used as teaching materials. Most of the material is familiar with surrounding objects, such as plants, fruits, celestial bodies, transportation, and others. The researcher provided an example phrase or sentence for each number based on the theme adapted from the syllabus to show the explanation of the images on each page such as one apple on a plate, three flowers grow in the field, four butterflies fly near to the flowers, etc.

The next step is determining the pop-up technique, software to design the content, choosing the image, font, and color. For this research, the researcher adapted several pop-up technique ideas that were displayed in books from several sources. The researcher used some techniques to combine with illustrations that showed in the book. They were v-fold, spiral, floating layers, and pull-strip. The software being used by the researcher is Canva Pro. For the images displayed in the book, the researcher used several images from several image platforms such as VectorStock, Pngwing, and Pngtree. The researcher used several pictures there and combined the pictures into one to be displayed in the book. To avoid plagiarism, the researcher included the reference to the pictures on the last page of the book. The researchers also used images that were already available on Canva itself and combined them. The fonts used are easy to read and pleasing to the eye, such as *Candy Beans*, *Norwester*, *Collective*, and *Comic Sans MS* fonts. Fonts used in book titles, numeric symbols, texts, page numbers, and references were of different font sizes.

After the pop-up book design was completed, and the design was downloaded in PNG format for printing. Researchers used art carton paper (thick, smooth, and glossy cardboard) for the cover and ICT paper (thick paper with a smooth surface such as HVS) for the contents of the book. The paper size used is F4 and the size of the finished book is half the size of F4. The researcher prepared some equipment such as scissors, a ruler, glue, cardboard as a cover, a pencil, and other stationery. After everything was available, the researcher began to make technical pop-up patterns and design printed images to produce a three-dimensional appearance on the book.

c. Developing Phase

This is the further step after analyzing step and designing step. After creating the draft, the researcher asked the validator to check it to the assessment rubric to create a better product. The researcher conducted a validation to ensure the product is suitable for the teacher to use. In this validation, the researcher asked Mrs. Z, to serve as a validator and to do an impartial assessment of the product using the researcher's assessment rubric.

Table 3. The First Result of Validation

No.	Criteria	Assessment Rubric					
		High		Medium		Low	
		25 points	20 points	15 points	10 points	5 points	0 points
1.	Cover		√				
2.	Grammar and Spelling				√		
3.	Content	√					
4.	Illustration/Pictures	√					
5.	MLA Bibliography	√					

The researcher discovered a problem based on the initial result of the rubric. The book contains certain phrases and sentences that have grammatical and spelling errors. The researcher corrected the grammatical and spelling problems as a result. The validator gave a comment that the phrases or sentences were too complicated and inappropriate for kindergarten students. Thus, the researcher simplifies the sentence by adding "there is/there are" before defining the noun. As an example, on page 8, the sentence "three flowers grow in the field" was changed to "there are three flowers in the field." There were some changes such as the change of pop-up technique for some pages and the size of the cover.

After doing some changes, the researcher asked the validator to re-evaluate the second draft book. The following elaboration is the result.

Table 4. The Second Result of Validation

No.	Criteria	Assessment Rubric					
		High		Medium		Low	
		25 points	20 points	15 points	10 points	5 points	0 points
1.	Cover		√				
2.	Grammar and Spelling	√					
3.	Content	√					
4.	Illustration/Pictures	√					
5.	MLA Bibliography	√					

The issue that was identified in the first result of the rubric was resolved based on the second result. It showed that the second to fifth criteria each reached 25 points, indicating a good result. However, the cover received 20 points for the first criteria. Although the cover is rated 20 points, the score is still in the high range, indicating that the product is fairly nice. From these second results, it seems that this product has met the criteria to be used as teaching media by the teacher to teach English Number.

The final result of this research product is a pop-up book entitled "Let's Learn Numbers: A Pop-up Numbers Book" which can be used as a teaching media to teach English Numbers. The book consisted of attractive pictures with three-dimensional pop-up techniques. The material was numbers from 1 to 10. Every page consisted of a number decorated with some pictures. There were number symbols and their phonics complete with a sentence to represent the number. The picture for each page was based on random themes that the researcher decided and took from some sources and modified by the researcher. The position of the numbers was different and pop-up techniques appeared on the picture. The techniques that the researcher used are v-fold, spiral, floating layers, pull-strip, and cylinder. The total number of pages of the pop-up book is 14 pages. To encourage students' interest in studying numbers in English, the book was written with their needs in mind. The following are the overview of the product.

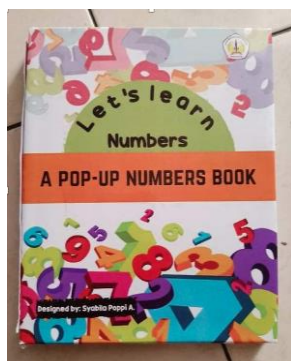


Figure 1. Cover

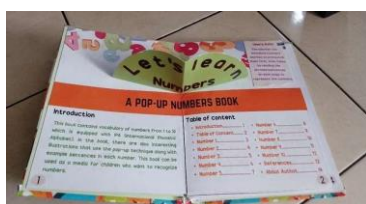


Figure 2. Page 1-2 (Introduction and Table of Content)



Figure 3. Page 3-4



Figure 4. Page 5-6



Figure 5. Page 7-8



Figure 6. Page 9-10



Figure 7. Page 11-12

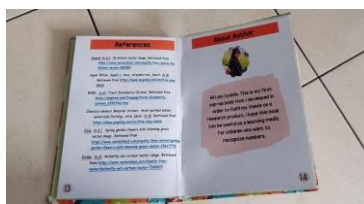


Figure 8. Page 13-14 (References and About Author)

DISCUSSION

Attracting the attention of kindergarten students is an important thing to make them focus on learning. Focus on learning is needed so the students may comprehend the material being delivered. In the results of interviews that carried out in this research, it was found that one of the obstacles in teaching Zonakata Kindergarten students was getting their attention in learning is difficult. According to Agassy, Harmanto, Indriastuti (2020), their research showed that children's vocabulary improved when they begin using the learning media developed by the researchers that is pop-up slide book. It can be a preference the pop-up book that the researcher developed, it might improve the students' vocabulary.

The result of the interview showed that kindergarten students particularly disabled students are more engaged in learning media that may be utilized to teach counting concepts as well as recognizing number symbols and they need a colorful and attractive book and display illustrations to keep their interest and focus in learning numbers. The teachers also suggested that the material of the book should be thick and quite large. The researcher designed the content based on the results of the analysis phase. The book content should be simple and the design of the book must be colorful. The subjects being provided are still fundamental, like simple vocabularies through their surroundings (Kusumoriny & Anwar, 2013). By designing the book content based on the theme of the interview, applying colorful and attractive designs, and employing appropriate software, it seems this pop-up book will be useful as teaching media for the teacher in teaching English numbers to the students.

To make sure the product is applied as teaching media for learning English numbers, the researcher did a validation. From the result, it complied with all the criteria which can be assumed that the book can be used as teaching media. This book can motivate the students to learn numbers because this book is available with pictures and pop-up effects that can attract their attention to study.

CONCLUSIONS AND SUGGESTIONS

CONCLUSIONS

The goal of this research is to develop a pop-up book as teaching media to teach English numbers to Kindergarten Students. This is development research that was done by following the phase of Analyze, Design, and Develop of ADDIE concept. The pop-up book entitled "Let's Learn Numbers: A Pop-up Numbers Book" consists of an introduction, table of content, and English numbers material from 1 to 10 which is displayed with attractive pictures and interesting pop-up techniques and is equipped with IPA of the numbers and explanatory phrase or sentences, references, and author profile with the total of page number is 14 pages. This book is presented with several relevant themes studied in a class by students based on the kindergarten syllabus of curriculum 2013, there are fruits, plants, animals, transportation, celestial bodies, marine animal, and sweet stuff. The researcher used Canva software in developing this research product. The final product was also in accordance with the results of the validation, so it fulfilled the standard of the book's appropriateness for students to study. The teacher can use this book as a supporting media when teaching English numbers to the students. This book has also been designed to meet the needs of students in learning numbers, particularly for children with special needs who require media to help them comprehend the material, so that it may be used for both regular and non-regular students to recognize numbers.

SUGGESTIONS

From this conducted research, the researcher would like to address some suggestions to the teacher to use teaching media when teaching students, one of which is using books accompanied by pictures. The teacher can use the product from this research as a teaching media, especially in teaching English numbers to make it easier for them to understand the material.

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