

Development of Pop-Up Book Learning Media Assisted by QR Code in Increasing Student Learning Motivation On the Science of Plant Parts

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DOI: 10.35719/educare.v4i2.220

Abstract

The use of appropriate learning media and in accordance with the needs of students, will create an active and fun learning atmosphere for students. This research and development produces learning media in the form of Pop up books assisted by Qr codes can be an effort to create an active learning atmosphere and can increase student learning motivation in the classroom. The purpose of this study was to analyze the ADDIE model in the development of Science Learning media With Pop Up Book Media assisted by Qr Code on the material of plant parts. The type of research used is research and development model with ADDIE model implemented until the implementation step. The results of this study show that; 1) the development Model of Pop-up Book Learning Media assisted by Qr Code in increasing student learning motivation, namely the results of Pop-up Book in Qr Code there is a video along with an explanation of the material. Developed products meet the components as teaching materials in learning. 2) P and feasibility test of the results of the development of Pop-up Book Learning Media assisted by Qr Code in increasing student learning motivation is carried out through media experts, material experts.

Penggunaan media pembelajaran yang tepat dan sesuai dengan kebutuhan siswa, akan menciptakan suasana belajar yang aktif dan menyenangkan bagi siswa. Penelitian dan pengembangan ini menghasilkan media pembelajaran berupa Pop Up Book Berbantuan Qr Code dapat menjadi upaya dalam menciptakan suasana belajar yang aktif dan bisa meningkatkan motivasi belajar siswa di kelas. Tujuan penelitian ini untuk menganalisis model ADDIE dalam pengembangan media pembelajaran ipa dengan media Pop Up Book berbantuan Qr Code pada materi bagian-bagian tumbuhan. Jenis penelitian yang digunakan adalah model penelitian dan pengembangan (Research and Development) dengan model ADDIE yang dilaksanakan sampai pada langkah Implementasi. Hasil hasil penelitian ini menunjukkan bahwa; 1) Model Pengembangan Media Pembelajaran Pop-Up Book Berbantuan Qr Code dalam Meningkatkan Motivasi Belajar Siswa, yaitu hasil Pop Up Book yang di dalam Qr Code terdapat video beserta penjelasan materi. Produk yang dikembangkan memenuhi komponen sebagai bahan ajar dalam pembelajaran. 2) P Dan Uji Kelayakan hasil Pengembangan Media Pembelajaran Pop-Up Book Berbantuan Qr Code dalam Meningkatkan Motivasi Belajar Siswa dilakukan melalui ahli media, ahli materi.

Keywords: *Development of Qr Code; Pop Up Book Media; Natural Science; Madrasah Ibtidaiyah.*

Introduction

Law No. 20 of 2003, which discusses the National Education System, explains that education is a conscious and planned effort to create an atmosphere of learning and the learning process so



that students actively develop their potential to have religious, spiritual power, self-control, personality, intelligence, noble character, and the skills necessary for themselves, society, nation, and state. Education is organized by setting an example, building willpower, and developing student creativity in the learning process. (Sisdiknas, 2003) and compulsory for every Muslim to learn about religion and history. Natural Sciences (IPA) is one of the many subjects taught in school. Science itself is a scientific field with a unique character to study factual events that occur in nature, either in the form of reality or affairs and cause-and-effect relationships. (Asih dan Eka, 2015)

Natural Science (IPA) is a learning concept that addresses the events that occur in nature that have a relationship with human life and the object of broad study, as well as the science that is born and developed through the steps of the scientific method. (Husamah et al, 2001) Science education leads to “find out” and “do” activities to help students better understand the surrounding environment. Learning science invites students to formulate concepts based on empirical facts. (Fitria Eka Wulandari, 2016)

Media, as one component in the system, functions as a means of non-verbal communication. As one of the components of the system, it means that the media absolutely must exist or be utilized in every learning. It is said so because if one of the components does not exist, the results will not be maximal. (Supriyono, 2018) the use of teaching media at the teaching orientation stage will significantly help the effectiveness of the learning process and the delivery of messages and lesson contents at that time. Media is one of the means to improve the activities of the learning process. With the diversity of media, each has different characteristics. It is necessary to choose them carefully and precisely to be used appropriately. (Abdul Wahid, 2018)

Based on the results of the needs analysis on the aspects of the process and learning media used by science teachers in MI, Malik Ibrahim shows teachers' learning methods in the form of lectures. Media used in conventional schools, such as textbooks. Teachers argue that the presence of learning media can help students understand the material that is difficult for them to understand.

The results of the interview in MI Malik Ibrahim Jenggawah Jember teachers use methods such as question and answer aimed at stimulating students to think and be able to issue opinions, as well as ideas in the learning process. Teachers also make creative ideas, such as collaborative learning system games, that make learning materials delivered by teachers exciting and fun. However, students still get learning outcomes that are far below the completeness. One of them is in the fabric of plant parts. So, students can only imagine illustrations of plant parts if the material is conveyed correctly. This results in students being more passive because students tend to listen, pay attention, and observe the material presented by the teacher. The learning process will look boring because of the non-living classroom conditions.

Based on the above problems, researchers offer learning media as a video containing a pop-up book. In the Pop Book itself, the material presented is in the form of exciting images because there are parts that, when opened, can move, change, or create a compelling impression. (Febri Ukhtinasari dkk, 2017) This medium is suitable for the material of plant parts with conceptual and factual theories. Researchers here developed a Pop-up Book media and added QR codes. QR Code is one type of barcode that has the advantage of being able to display text, open URLs, video, and others. The Pop Up Book media, assisted by QR Code, aims to make it easier for students to access videos and other materials.

Research Methods

The type of research that will be carried out is research and development (Research and Development). Research is “a data collection and analysis process carried out systematically and logically to achieve specific goals. (Sukmadinata dan Nana Syaodih, 2011) The research started from

the desire of curiosity and problems, followed by the assessment of the theoretical foundations in the literature to be interpreted more quickly as a development effort accompanied by its validation.

Development Research (Development Research) finds patterns of growth sequence and change. It especially intends to develop and produce new designs, test the effectiveness of existing products, and develop and create new products. Development Research is not used to test theories, but what is produced is tested in the field and then revised until the results are satisfactory. (Sugiyono, 2013) One of them in research development is research that aims to develop or produce products in learning. (Ricu Sidiq dan Najuah, 2020) The products developed in this study in the form of Learning media pop-up book-assisted QR codes on the material parts of the plant so that the media will be presented and tested on 4th-grade students MI Malik Ibrahim Jenggawah Jember.

Developing learning media requires developing development models to ensure the quality of teaching materials to support learning effectiveness. This study adapts the ADDIE development model through five stages (Analysis, Design, Development, Implementation, Evaluation). (Popi Srikandika. Dkk, 2021) The development flow is shown below:

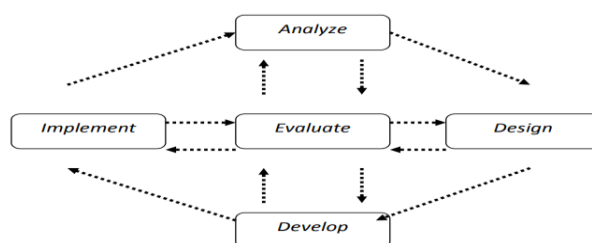


Figure 3. 1 ADDIE's approach to product development (I Made Tegeh, 2014)

This study uses the ADDIE development procedure. Researchers wait until the implementation stage because there is limited time and adjusting to the purpose of the study, so researchers only conduct research until the validity test stage and the student's response to the learning media that has been developed namely Pop Book. If done until the evaluation stage, it will bring up new products, so researchers choose the implementation stage.

Research and Development Procedures

Using the ADDIE model, researchers conducted development procedures to develop learning media as a pop-up book on the material of plant parts Class 4 MI. The steps of research and development of the ADDIE model, namely: 1) Analysis, 2) Design, 3) Development, 4) Implementation. Product trials are used to collect data that can be used as a reference in developing and knowing the feasibility of pop-up Book Learning media assisted by QR codes. Aspects that must be done in product trials are: 1) Trial Design, 2) Test Subjects, 3) Data Source, and 4) Data Collection Instruments

Data collection instruments in the research are expert validation questionnaires and response questionnaires of learners. The questionnaire used in this study is a checklist with a score assessment on each aspect using a Likert scale. Rating scale criteria used as follows: (Sugiyono, 2019)

Table 3.2 Rating Scale Criteria

Criteria	Scale
Strongly Agree (SA)	5
Agree (A)	4
Doubtful (D)	3
Not Agree (NA)	2
Strongly Disagree (SD)	1

Data analysis techniques in this study include data analysis results of expert validation, user validation, and analysis of learners' responses. The Data were analyzed using quantitative data analysis techniques to determine the level of validity of the products developed, with the following details:

a. Data Analysis of Validation Results

Data analysis of validation results aims to determine the level of validity of media products developed in the form of Pop-Up Book Science Learning media assisted by QR Code. In determining the value (%) validation criteria using the following formula: (Sa'dun Akbar, 2017)

$$V_{ah} = \frac{T_{se}}{T_{sh}} \times 100 \%$$

Description:

$V_{(ah)}$ = expert validation

T_{se} = total empirical score (expert assessment)

T_{sh} = total expected score

b. Practitioner outcome data analysis

Data analysis results practitioners (test the application of the model in learning) can use the following formula:

$$V_{(pg)} = \frac{T_{se}}{T_{sh}} \times 100 \%$$

Description :

$V_{(pg)}$ = expert validation

T_{se} = total empirical score (expert assessment; teacher)

T_{Sh} = total expected score

The validation criteria of learning media were developed as follows: (Sa'dun Akbar, 2017)

Table 3.3 Criteria Validation

Validation Criteria	Validation Level
85,01%-100,00 %	Very valid, can be used without revision
70,01-85,00 %	Quite valid, usable but needs minor revisions
50,01-70,00 %	Less valid, it is recommended not to be used because it needs to be revised
01,00-50,00 %	Not valid, cannot be used

c. Data analysis of the response of students

This analysis aims to determine the response of learners to learning media that have been developed. In determining the value (%) validity criteria using the following formula:

$$V_{au} = \frac{T_{se}}{T_{sh}} \times 100 \%$$

Keterangan:

$V_{(au)}$ = validasi audience (siswa)

T_{se} = total skor empirik (siswa)

T_{Sh} =total skor yang diharapkan

Response criteria of students to learning media developed as follows: (Sa'dun Akbar, 2017)

Table 3.4 Learner Response Criteria

Validation Criteria	Levels Of Validation
81,00-100,00 %	Very valid, can be used without revision
61,00-80,00 %	Quite valid, usable but needs minor revisions
41,00-60,00 %	Less valid, it is recommended not to be used because it needs to be revised
21,00-40,00 %	Not valid, cannot be used
00,00-20,00 %	Very invalid, should not be used

Results and Discussion Of Findings

This research and development resulted in spesifikasi pop Book Learning media assisted by QR Code on plant parts in MI Malik Ibrahim Jenggawah Jember as follows:

Learning Media Development Model Pop-Up Book assisted by QR Code in improving student motivation

The development of this learning media adapts to the ADDIE model developed by Made Tegeh, with the following stages: analysis (Analysis), design (Design), development (Development), implementation (implementation), and evaluation (evaluation). However, this study has yet to reach the implementation stage due to time constraints. The data research results are as follows:

Analysis

This stage is the first step in research. Analysis activities are carried out by performance analysis, needs analysis, and KI and KD analysis. As for the activities at this stage, they produced the following data:

a. Performance Analysis

The performance analysis included interviews with science teachers and Grade 4 students, MI Malik Ibrahim. The interview activity with the science teacher, held on December 04, 2022, obtained the results of science learning, especially the material of plant parts, which many students found difficult. Many are made demands by students so that they consider the material to be complex because of the limited teaching materials available. Thus, it can make understanding the material parts of plants difficult. The learning Media used in the daily learning process is LKS books, so it can lead to a lack of involvement of learners in learning and make the material presented less fully conveyed.

The results of interviews with ten 4th grade students MI Malik Ibrahim Jember, which were held on December 05, 2022, found that learning science was considered difficult as the material of plant parts needed teaching materials or other supporting media that could involve students in learning so that it was easy to understand the material.

b. Needs Analysis

The needs analysis questionnaire was distributed to 30 4th-grade students, including MI Malik Ibrahim Jember. From the results of the needs analysis that 93% of students need learning support media, 25% of students are not familiar with Pop Book Learning media assisted by QR Code, 93% of students expect learning media such as videos and pictures, 98% of students are interested in learning media related to technology, 98% of students agree with the existence of learning support in the form of Pop up Book Learning media assisted by Qr Code. With the details of these data, students are more interested in learning newer and more exciting press than the previous supporting learning media.

c. KI and KD analysis

This KI and KD analysis aims to compile material in the pop-up book media assisted by a QR code. KI and KD are prepared based on curriculum 2013 Revised Edition 2017 following the curriculum applied by the school.

Design

The second stage of this development aims to develop teaching materials to increase learners' interest so they feel happy with the generated learning media. This stage includes preparing learning materials, media selection, and initial design. The details are as follows:

a. Preparing Learning Materials

Learning materials are presented in the learning media by reviewing KI and KD. The material to be studied is the material parts of plants.

b. Media selection

The media was developed as a media pop book assisted by a QR code on the material of plant parts. The selection of media is tailored to the needs of learners. Pop-up Book Learning Media, assisted by QR code, can be used as teaching materials to support learning activities that can be used individually. Pop-up book Media utilizes paper materials and QR codes. Inside, the QR code displays several plant parts—the whole design part of the media pop-up book assisted with pure code created by researchers.

c. Early planning

In the initial design of the preparation of the product before being tested by preparing the plan of Learning media and instruments, including the following:

1) Media format Design

The initial design of the media is done by arranging the initial order of the Pop-up Book media Design assisted by a QR code on plant parts. The table makes the initial order of QR code-assisted Pop Up Book media on plant parts material.

2) Preparation Of the Instrument

Instruments designed at this stage include the needs analysis questionnaire instrument, media expert validation instrument, material expert validation instrument, user validation instrument, and learner response test instrument. The preparation of instruments adapted from the book Sa'dun Akbar BNSP (National Agency for Professional Certification) standards and other references that are in line with the developed teaching material products.

Development

In this development phase, several things are done, including the following:

a. Material Expert Validation

Assessment of Pop-Up Book material assisted by QR Code to material experts aims to determine the feasibility value of the material. The expert evaluation of the material was carried out by a tarbiyah lecturer at Islam Jember University, namely Mely Agustia, S.Pd., M.Pd., on February 06, 2023. The percentage shows a figure of 87%, with the material's feasibility level being very valid. So, the Pop Book Science Learning media, assisted by the QR Code that has been developed, is feasible to use without any revision. The following equations and calculations obtain the percentage value:

$$V_{ah} = \frac{T_{se}}{T_{sh}} \times 100 \%$$

$$V_{ah} = \frac{79}{90} \times 100 \% = 87\%$$

b. Media Expert Validation

Assessment of Pop Up Book Media assisted by QR Code on expert value aims to determine the validity and accuracy of the material based on media Design, in terms of media

appearance or design, and its application. Media expert assessment was conducted by the Tarbiyah Islamic University of Jember, Prima Cristi Crismono, S.Pd., M.Pd. on 06 February 2023. The final percentage results showed a figure of 87%, with the level of feasibility of learning media presented as very valid. So, the Pop Up Book media, assisted by the QR Code that has been developed, is feasible to use without revision. The following equation and calculation obtain the value:

$$V(ah) = \frac{Tse}{Tsh} \times 100 \%$$

$$V(ah) = \frac{80}{90} \times 100 \% = 88\%$$

c. Practitioner Validation

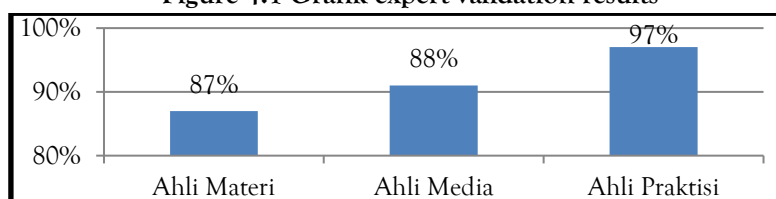
Assessment of QR Code-assisted Pop Up Book media to practitioners aims to determine the value of QR Code-assisted Pop Up Book media in terms of plant material and media design. The practitioner assessment was conducted by Zainullah Amin S, Pd. as a 4th grade science teacher, MI Malik Ibrahim. It was done on February 08, 2023. Practical validation instruments include material suitability, learning aspects, and language aspects. From the final result, the percentage shows 97%, with the criteria for the feasibility of the material and media presented being very valid. So, the Pop Up Book media, assisted by the QR Code that has been developed, is feasible to use without revision. The following equation and calculation obtain the value:

$$V(ah) = \frac{Tse}{Tsh} \times 100 \%$$

$$V(ah) = \frac{88}{90} \times 100 \% = 97 \%$$

The product validation chart from the experts is as follows:

Figure 4.1 Grafik expert validation results



Implementation

The implementation phase is a continuation of the development phase. At this stage, several experts have developed and validated the entire learning media design, including material experts, media experts, and users. After going through the next revision stage, learners test it. The trials were conducted as follows:

a. Small-Scale Product Trials

The first product trial, which is a small-scale trial, aims to determine the validation of learners' responses to QR Code-assisted pop-up Book media. This questionnaire was filled out by 10 students from Class 4 of MI Malik Ibrahim on February 09, 2023. The percentage results show that the overall response of learners is 90%. Judging from the percentage of Pop Up Book Media assisted by QR codes, it can be said to be very valid. So that the Pop Up Book media, assisted by the QR Code that has been developed, can be used for large-scale tests. Percentage results obtained by equations and calculations are as follows:

$$V(au) = \frac{Tse}{Tsh} \times 100 \%$$

$$V(au) = \frac{543}{600} \times 100 \% = 90\%$$

b. Large-scale product trials

The following product trial was carried out: a large-scale test, this trial was carried out aimed at determining the validation of students' responses to Pop Book media assisted by QR

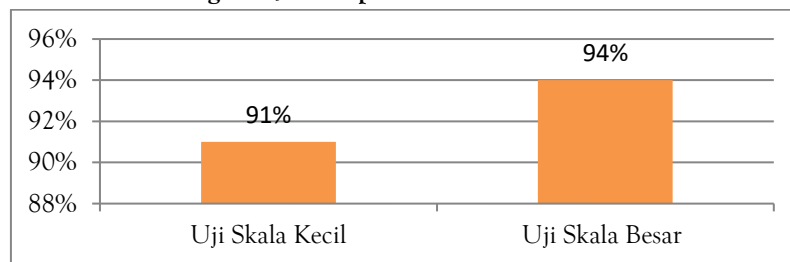
Code filling out this questionnaire was carried out by 30 students from Class 4 MI Malik Ibrahim on February 11, 2023. The percentage results showed that the overall response of learners was 94%. They reviewed the presentation of Pop Up Book Media assisted by QR Code. So, the Pop Up Book media, administered by the QR Code that has been developed, can be used to learn science material on plant parts. Percentage results obtained by equations and calculations are as follows:

$$V(au) = \frac{Tse}{Tsh} \times 100 \%$$

$$V(au) = \frac{1.709}{1.800} \times 100 \% = 94 \%$$

The Grafik Darsi product trial results of students are as follows:

Figure 4.2 Graph of Product Trial Results



Feasibility test of the development of Pop-Up Book Learning Media assisted by QR Code in improving student learning motivation

Feasibility testing of the developed media is done by providing an overview of the data generated by several experts, such as material experts, media experts, practitioners, and response learners. The explanation of some of these experts is as follows:

Analysis of the Results of The Material Expert Trial

The material expert said that the presentation of the material in the material component is included in the perfect category, where the description of the material presented follows the competencies and objectives that must be mastered by students, as well as the completeness of the material with the Pop Up Book assisted by Qr Code is included in the perfect category. Thus, the media presented can encourage students' learning motivation in the learning process so that manageable levels of success in learning can be achieved. This statement is supported by previous research that says teaching materials in the learning process can facilitate learners in improving their understanding of concepts, motivate learners to learn, visualize learning materials to be more natural, and make the classroom atmosphere not monotonous. (Refika Yeisa, 2020)

Material experts say that the presentation of the material on the component of the suitability of the dish with learning centered on students, including the category of very good, the feature covers several things that encourage students to learn in groups and can encourage students to practice reading content (soft skills). In the Learning media presented, a QR code can support students in learning individually or in groups. It can value soft skills that can improve the characteristics of students' attitudes after learning the material presented. This statement is supported by previous researchers who said that evaluating the results of students' learning process, repeating the fabric, and stimulating the interest of students to conduct group discussions. Soft skills are self-development of a positive attitude, communication skills, and good personality skills. The delivery of soft skills in learning can instill a mindset in students to be pleasant people, socialize well, overcome conflicts, and develop an attitude of friendliness and concern for fellow beings. (Mufanti, 2016)

In the aspect of language, material experts say that sentences used benefit communication in the category of good, the language of the use of terms and the preparation of sentence structure following the rules of the Indonesian tongue of good, sentences used following the understanding of learners, effective and does not cause double meaning in the very good. This statement is supported by previous researchers who say the use of grammar in teaching materials must use precise language, straightforward sentences, and short and can be read easily. Thus, the preparation of teaching materials must consider the readability criteria in the teaching materials to be presented. (Yulia dkk, 2021)

Analysis Of the Results of The Media Expert Trial

Media experts said that in the aspect of media form, the display of the attraction of the combination of colors and the production of IPA Pop Up Book media assisted by a simple QR Code, the proportional size of the press, and the arrangement of the media design are very well categorized media presented following the characteristics of learners. Regarding media quality, the Learning media can be used for a long time accompanied by instructions for use, making it easier for users to use the media. In addition, the ease of the Science Learning Media Pop-Up Book assisted by QR Code can increase the interest of students so that students can interact directly with the media presented. (Rahim dkk, 2019) Thus, the media's ease of use will be feasible for learning. This statement is supported by previous researchers who said ease of use in learning media can be used to measure success in making the media. (Posumah, 2021)

In the function of the learning media presented to make learners more active, the press explained the image following the learning materials, which are categorized very well. In the aspect of QR Code Media text harmony, the video presented in the media can increase the sense of pleasure in students who are categorized as very good; this statement is supported by previous researchers who say suitable teaching materials are shown with a sense of fun and enthusiasm from students when using these teaching materials. (Astuti and Prabowo, 2020)

Analysis Of Practitioner Trial Results

In the aspect of suitability of the material, the teacher said that the material presented following the learning objectives in the category is perfect, the material presented following the characteristics of the learners is excellent, the material presented is complete and systematic in the class is very good, and the suitability of the example with the material is excellent. The statement is supported by previous researchers who stated the practicality of learning materials, the suitability of the material with the applicable concepts, the presentation of the material, the relationship of the material with the learning objectives, and the completeness of the fabric following the development of students can make it easier for students to understand the material so that the. (Mahesti dan Koeswanti, 2021)

Regarding language suitability, the teacher said that the use of language in the category is perfect, the selection of sentences can invite students to interact with the media in the class, and the writing presented in the media read in the category is very good. In the QR Code component, the teacher said that the QR Code contains several lessons that are used to access video material on plant parts and explanations of plant parts that are categorized very well. This statement is supported by previous researchers who said that using QR code media can access learning materials linked to websites and links that researchers have compiled.

Analysis of response Data Peserata Didik in large and small scale

Aspects of the attractiveness and practicality of the learning media used are enjoyable and exciting, with the number of items 12 statement score 543 percentage 90% in the category of very valid. On the value of perspex form of media presented as attractive got a score of 88%, Pop up

Book Science Learning media assisted by QR Code on the parts of the plant offered following the material got a score of 88%, the material presented a score of 85%, the material delivered a score of 90% quickly, the material had coherently score of 85%, the accuracy of the delivery of the material score of 90%, coverage into the material clearly score of 93%, the display of Science Learning media assisted by Qr Code simple and enjoyable score of 93%, the size of the proportional Learning media score of 93%, arrangement on the design of Learning media balanced score of 90%, Learning media can be used easily score of 90%. Based on these data, the average learner responds positively to the media used. From the results of the small group trial, learners obtained a percentage of 90%. Based on Table 4.7, the value is in a very valid category, located in the 81.00% -100.00% range. Based on the results of the learners' responses, it can be concluded that the Pop Up Book Science Learning media assisted by QR Code plant parts is "very interesting" to continue research in large group trials.

While the analysis of the test results of large-scale learners, namely aspects of the attractiveness of the learning media used, is entertaining and exciting with the number of items, 12 statements get a score of 1,709 percent 94% in the category of very valid, the value per an aspect of the form of media presented attractive get a score of 88%, Pop up Book Science Learning media assisted by Qr Code on the parts of the plant presented in accordance with the material get a score of 90%, the material presented is the clear score of 85%, the material presented is the easy score of 83%, the material presented is the coherent score of 85%, accuracy of material delivery score 90%, coverage into the material score 93%, display of Science Learning media Pop Up Book assisted Qr Code simple and attractive score 93%, the size of the Learning media proportional score 93%, the arrangement of the design of Learning media balanced score 90%, Learning media can be used easily score 90%. Based on these data, the average learner responds positively to the media used.

The learners' response percentage was 94% from the extensive group trial results. Based on the conversion table, the value is included in the very valid category, located in the 81.00% - 100.00%. Based on the learners' responses, it can be concluded that the pop-up Book Science Learning media assisted by QR Code on plant parts at the MI/SD level is "very interesting" to be applied as a learning media.

Product Revision Review

Based on the above analysis, the Pop Up Book media assisted by QR CODE in the media category is feasible or false to be developed. Still, researchers make minor revisions as a form of advice from the validity of media experts. Suggestions from the validity of media experts aim to improve the display of media in pop books assisted by QR codes to be more efficient and attractive to learning media, while the findings of this study, among others;

1. Development of Science Learning Media

The development of pop-up books and Science Learning media assisted by QR codes makes learning more interesting because it can combine learning media with technology. In media form, the attraction of the combination of colors and the display of IPA Pop Up Book media assisted by a simple QR Code, proportional media size, and arrangement in media design are very well categorized—media presented in accordance with the characteristics of learners. Regarding media quality, the Learning media can be used for a long time accompanied by instructions for use, making it easier for users to use the media.

In the function of the Learning media presented to make learners more active, the press presented explains the image in accordance with the learning materials and is categorized very well.

2. Feasibility Test Of Expansion Results

Pop-up Book Learning Media assisted by QR Code has been through the validity of the media and materials by experts. The material expert said that the presentation of the material in the material component is included in the outstanding category, where the description of the material presented is in accordance with the competencies and objectives that must be mastered by students, as well as the completeness of the material with the Pop Up Book assisted by QR Code is included in the outstanding category, thus the media presented can encourage students' learning motivation in the learning process so that manageable levels of success in learning can be achieved. This statement is supported by previous research that says that teaching materials in the learning process can make it easier for students to improve their understanding of concepts, motivate students to learn, visualize learning materials to be more accurate, and make the classroom atmosphere not monotonous. (Refika Yeisa, 2020)

Media experts said that in the aspect of media form, the display of the attraction of the combination of colors and the production of IPA Pop Up Book media assisted by a simple QR Code, the proportional size of the press, and the arrangement of the media design are very well categorized—media presented in accordance with the characteristics of learners. In the aspect of QR code Media text compatibility, the video shown in the media can increase the sense of pleasure in students who are categorized as very good; the statement is supported by previous researchers who say that suitable teaching materials are shown with a sense of pleasure and enthusiasm from students when using these teaching materials. (Astuti and Prabowo, 2020).

Conclusion and Suggestions

Based on the above exposure, it can be concluded as follows: First, the development of a Science Learning media Pop Up Book assisted by a QR code on the material of plant parts with the results of the QR CODE, there is a video along with an explanation of the material. Developed products meet the components of teaching materials in learning. Second, the development of the Science Learning Media Pop-Up Book was assisted by a QR Code on the plant parts' material. According to media experts, material experts are significant in providing a clear understanding of the material of plant parts.

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