



The Validity of Question Wheel "Karunia" Learning Media in the Archaeobacteria and Eubacteria Students of Class X IPA of SMAN 7 Banjarmasin

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ABSTRACT

Effective learning is when students are actively involved in the learning process, so they can gain an understanding of the learning process carried out and can improve learning outcomes on the concept of learning. Archaeobacteria and Eubacteria are biological concepts that are relatively difficult, abstract, and tend to memorize. Therefore research and development of fun learning media are carried out in the form of a Question Wheel game "KARUNIA". This research and development are to describe the validity of the "KARUNIA" Question Wheel learning media. This type of research is research and development with 4D models. This research is limited to the Develop stage. The results of research and development carried out on the "KARUNIA" Question Wheel learning media on the Archaeobacteria and Eubacteria concepts are classified as very valid with a value of 88%.

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A. Introduction

A good learning process is a link between teachers, students, learning models, learning strategies, concepts, media, and evaluation of learning. Rahmawati, et al (2019) stated that implementation The 2013 curriculum in the process of learning activities expects teachers to strive for a learning environment that is suitable for students with varied learning resources, methods, and media. In line with Riefani (2019), educators must be more creative in utilizing learning resources and using learning media in the school environment to achieve learning goals.

Learning Concept Archaeobacteria and Eubacteria class X IPA have a concept that is relatively difficult to understand given the object of learning must be observed with certain tools. The learning process of Archaeobacteria and Eubacteria requires a lot

of memorization. Pratiwi (2017), states that the concept is relatively difficult because it has a broad scope. One effort that can be done for students to better understand the concept is to provide variation in learning by providing learning media.

Variations in learning can be in the form of learning media. Problems in learning can be overcome by the use of alternative media, namely videos, pictures, and learning media in the form of games and should use media that can provide a more concrete and interesting picture. Lindayanti (2016) said that learning media is very important to use because it has an important role.

One of the media in the form of games that can attract students' learning interest is the Question Wheel game or what is usually called the "turning wheel game". Nisak (2017)

Question Wheel learning media is a media that is packaged to train the activity of answering students and knowing student learning outcomes in the following learning in class. In line with Nasrulloh (2017), the rotary wheel media is a circular tool that can move and can rotate or go around that can be used as a learning medium.

Based on the results of a questionnaire filled out by 90 students of Class XI Science 1, 2, and 3 at SMAN 7 Banjarmasin, 62.7% of respondents stated that they needed fun learning media, 32.8% said they chose the concept of Archaeobacteria and Eubacteria that required the use of media Question Wheel. The questionnaire filled out by the Biology teacher stated that the material Archaeobacteria and Eubacteria requires the development of learning media because the object studied is a microorganism that students need to understand so that learning media is needed for student understanding.

Based on these data, research, and development on the "KARUNIA" question wheel learning media on the concept of Archaeobacteria and Eubacteria to describe the validity of learning media.

B. Materials and Methods

The development of the "KARUNIA" question wheel learning media uses the type of research and development using the 4D Model (Define, Design, Develop, and

Disseminate). This research is only at the develop stage.

The place to do the research is at SMAN 7 Banjarmasin which is located at Jl. Dharma Praja V No. 47. The research is conducted for 1 (one) odd semester.

This research and development procedure refers to the modified 4d model. In summary, it consists of the stages of define, design, develops, and disseminate.

The calculation results of the validation of media experts are seen with criteria based on Akbar (2013) as the following table 1.

Table 1 Criteria of Experts Validation

No.	Score	Category	Description
1.	75,01%- 100%	Very Valid	Can be used without revision
2.	50,01%- 75,00%	Valid	Can be used with minor revision
3.	25,01%- 50,00%	Invalid	It is recommended not to use
4.	00,00%- 25,00%	Not Valid	Not used

C. Results and Discussion

Data validity of learning media products was obtained from a validation questionnaire given to media experts, namely two expert lecturers and one partner teacher at SMAN 7 Banjarmasin. Expert validators provide an assessment of the questionnaire. The results of the Question Wheel "KARUNIA" media validation data can be seen in the following table 2.

Table 2 The Validation Results of the Question Wheel "KARUNIA" Media

No.	Aspect	V1	V2	V3	Average (%)
1.	Relevancy	85	93	88	88
2.	Accuracy	75	94	81	83
3.	Completeness of presentation	75	94	100	90
4.	Systematic offerings	75	88	75	79
5.	The appropriateness of the presentation with the demands of student-centered learning	100	90	85	92
6.	Serving method	83	100	92	92
7.	The suitability of the language with the rules of Indonesian language is good and right	75	100	75	83
8.	Readability and communication	75	100	75	83
Average (%)		80	95	84	86
Conclusion		Very Valid			

Based on the data in the table above the validity by validators 1, 2, and 3, the Question Wheel "KARUNIA" media developed is very valid with an average of 86%.

The "KARUNIA" Question Wheel that was developed is an evaluation media in the

form of a game. This learning media is used during the learning process to facilitate conveying material about the concept of Archaeobacteria and Eubacteria and to increase students' interest in learning. The question card and answer key provided in the question

envelope are presented to make it easier to learn the sub-concepts of Archaeobacteria and Eubacteria. Following is the framework of the "KARUNIA" Question Wheel learning media product below (Figure 1; 2; 3; and 4).

DB = Definition of Bacteria
 CB = Characteristic of Bacteria
 JB = Species of Bacteria
 PB = Role of Bacteria



Figure 1
 Front of the Question Wheel "KARUNIA"



Figure 2
 Back of the Question Wheel "KARUNIA"

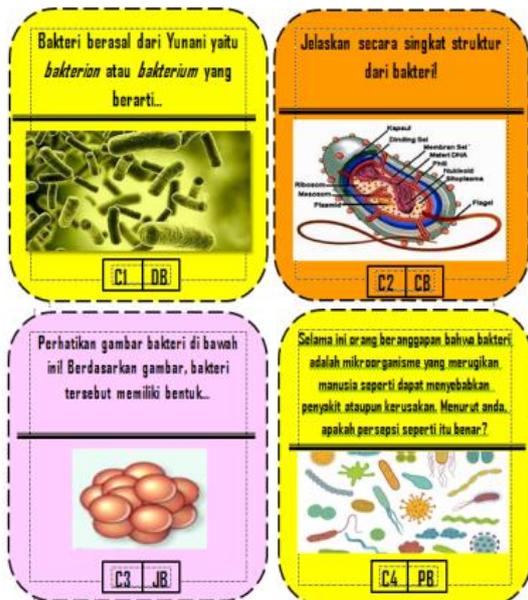


Figure 3 Question Card

Information of figure 3:
 C1, C2, C3, and C4 = Cognitive level

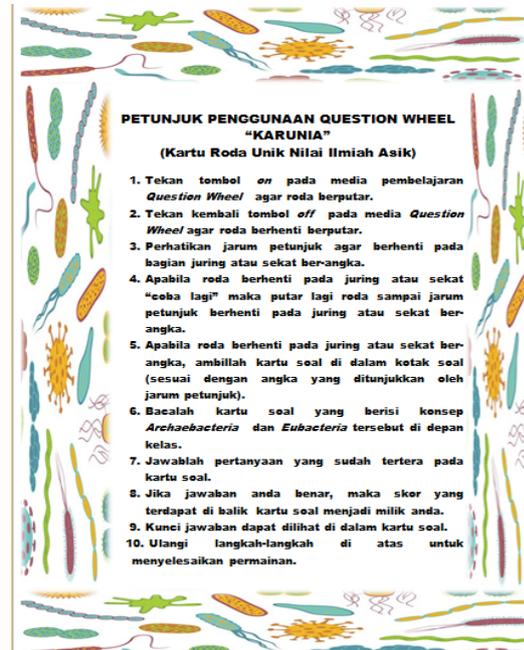


Figure 4
 Instructions for Use of Students and Teacher

Validation of learning media developed is important because the validation of instructional media aims to get value and feasibility from media experts. Sugiyono (2013); Hestari (2016) state validation is a process of activities to assess a product design rationally so that it will be more effective than the old. The stages of design validation are needed by several media experts to assess the feasibility of a product that is produced so as to obtain a validity score and get suggestions and comments from the validators.

At this stage, there are a number of suggestions given by the validator as a reference for further media improvements. The assessment of the validity of the learning media that was developed includes 8 aspects of assessment, namely aspects of relevance, accuracy, completeness of the presentation, systematic presentation, the suitability of the presentation with the demands of learning that are centered on students, how to present, the suitability of the Indonesian language that is good and right, as well as readability and communicability. Based on the results of the average evaluation by the validator of the Question Wheel learning media on the Concept of Archaeobacteria and Eubacteria, it



scores 88%, which means it is very valid and can be used without revision. Some suggestions and improvements need to be given by the validator to provide perfection in the development of learning media that are made.

In accordance with the results of the validation, to improve the quality of learning media products still need to be improved based on the advice of the validator. Revisions or improvements are made to improve product quality and improve learning media products that have been produced so that it becomes a good learning media (Prayoga, 2016). The specialty of the developed learning media is the Question Wheel "KARUNIA" learning media, which stands for "Unique Scientific Value Wheel Wheels.". This learning media can be hung on the wall, and there are several question card boxes.

On the question card, there are codes according to the cognitive level and the concepts learned by the cognitive level so that it can be easy when you want to tidy up or put the question card in the question box. The learning media used must-have criteria that are easy to use and interesting. Mandasari (2016) states that learning media is good if media that are packaged and used are simple, can present ideas to achieve the main objectives of a learning process, are colored, have clear images and writing, as well as varied motifs and designs so as to attract the attention of participants students. The several improvements made in accordance with expert input are the first aspects of relevance such as making questions that are more varied and adding competency offerings that are expected by students in learning media to have an average validity of 88%. Utama, et al. (2014), states that the relevance of learning media is inseparable from learning to students in schools that must have relevance in accordance with the real world that should be the object of the target of science. This is because of the relevance or the relationship between the concept of learning and learning media if appropriate will facilitate students in understanding the concepts being studied. In addition, learning can be applied directly to daily life feels more meaningful for students (Irwandi & Fajeriadi, 2020).

If it is not relevant between the media and the concept of the lesson then the desired target will not be achieved. This is as

explained by Rastya (2016) that in choosing learning media must pay attention to the relevant capabilities of the media in their use, accuracy with the learning objectives. In addition, it must be adapted to the nature of the lesson and the media used should be known by students.

The second aspect of the accuracy of the questions presented in accordance with scientific truth gets an average validity of 83%. As for some improvements following expert input, namely the addition of more sophisticated questions following daily life. Variations of questions can improve student understanding and instill student knowledge. Utama, et al. (2014) learning media are inseparable from the concept of learning in students in schools that must be in accordance with the real world that should be the object or target of knowledge. This is explained also by Mandasari (2016) stating that learning media is good if the media presented and used are simple, can present one idea to be able to achieve the main objectives of a learning process, color, have clear pictures and writing, as well as varied motifs and designs so that it can draw attention to students.

The third aspect of the completeness of the presentation that discusses the presentation of competencies that must be mastered by students, the benefits of the importance of competency mastery for students, pictures that are in accordance with the concept, and colorful appearance get an average of 90% validity. The completeness of the presentation on the Question Wheel learning media is appropriate, namely presenting questions that have been adapted to the Basic Competence of Archaeobacteria and Eubacteria Concepts, the pictures on the question card have been adjusted to the questions made so as to facilitate students in understanding the questions. Basic competencies are included in the media because the learning process can reach the target. The media has been given a striking color so that it looks more attractive and clear.

This was explained by Pangestika & Suyanto (2013) that a learning process will run well if there is compatibility with basic competencies, completeness of the material, there are examples of the application of concepts, there are evaluation questions, and good feedbacks with a suitable learning model. Besides that, the demand that learning



media must be presented attractively is also supported by Nurseto (2011) that learning media must be packaged attractively so that the media presented to students can be more lively, be able to attract learning interest, and allow mastery and achievement of learning objectives.

Learning media that displays real and colorful images can increase students' interest in learning. Hilmi (2016) states in the process of learning to use colored pictures or photos that can attract students' interest and attention in learning so they can concentrate fully when learning. This is in line with Riefani (2019) who explains that learning resources if presented using original colors and images can train students in the process of thinking ability.

The fourth aspect of the systematic presentation of learning media gets an average of 79% validity. The developed learning media gets advice from the validator that it is better to write on the question card according to the concept, the selection of materials in making instructional media should use stronger materials such as those made of iron and given a Light Emitting Diode (LED) lamp to make it more interesting. In the process of finding scientific concepts, there are techniques in presenting good learning media so that they can be more creative, innovative, and emphasize in providing hands-on experience (Krisnawati, 2014).

Nurseto (2011) to develop learning media requires the visuals principle which is described as an abbreviation of the words: Visible (easy to see), Interesting (interesting), Simple (simple), Useful (the contents are useful or useful), Accurate (true or can be accountable), Legitimate and Structured (well-structured or structured). A good presentation of learning media will certainly be able to support the learning process. Susilo (2014), states that learning media can occupy one component in the learning method so that as an effort to be able to enhance the interaction of teachers with students and their learning environment.

The fifth aspect of the suitability of the presentation with the demands of learning that is centered on students who discuss the relationship by encouraging students' curiosity, the media can encourage interaction between students, encourage students to build their own knowledge based on the type of

level of questions created, and encourage students to practice the content of questions in everyday life get an average of 92% validity. According to Nisak (2017) to streamline the learning process students must be actively involved so that they can gain understanding and improve learning outcomes. Fadhilah (2016) states in the selection of instructional media must be adjusted to the learning objectives, pay attention to facilities, student characteristics, student learning styles, and adapted to learning theory.

Learning media that are presented are inseparable from the material in learning and must be adapted to real daily events so that they can be objects or targets in understanding the knowledge (Utami, et al. 2015). The learning process requires interaction between subjects and learning objects. As Riyana (2008) explained in the learning process, there is information that must be delivered. Such information can be channeled from teacher to student through a medium using certain procedures.

The sixth aspect of the way of presentation that discusses the relationship by supporting students to be devoted to God Almighty, supporting honest behavior, supporting awareness for social interaction, increasing interest in learning, and supporting students' logical thinking ways get an average of 92% validity. The technique of presenting learning media that is good is creative innovation and emphasizes the provision of direct experience-oriented to the process of finding scientific concepts (Krisnawati, 2014). The presentation of good learning media will be able to support the learning process. Nurseto (2011) that presenting learning media must be interesting so that the media presented are more lively, attracting attention from students, allowing mastery and achievement of teaching objectives. Based on the results of research Susilo (2014) states that the position of the learning media contained in the components of the learning method as an effort to enhance the process of teacher interaction with students and student interaction with the learning environment.

The seventh aspect of the suitability of language with good and correct Indonesian rules that address the accuracy of the use of spelling, terms, and structuring sentences in the matter of getting an average of 83% validity. There was an improvement from the



media experts, namely the use of language on the question card was repaired again in accordance with the writing of the General Guidelines for Indonesian Spelling (PUEBI) good and right. Based on research conducted by Suwarni (2015), the language used in teaching materials must be simple, straightforward, and communicative in nature.

In addition, the language used must be in accordance with the General Guidelines for Indonesian Spelling (PUEBI) that are correct and use terms that are in accordance with the concept of discussion. This revision is very important to do to improve better product yields (Sugiyono, 2010). This is also explained in the Ministry of National Education (2008) revision is a process of product improvement after obtaining input from the validation results. The revision aims to finalize or make comprehensive improvements to the product so that the product matches the input from the validation activity.

The eighth aspect of readability and communicativeness in discussing the length of sentences in accordance with the level of understanding of students obtains an average of 83% validity. In this sub-aspect explains that the length of the question sentence, on the question card in accordance with the understanding of students starting from the initial cognitive abilities to the stage of students' ability to analyze the problem. There are sub-aspects of making questions in accordance with the understanding of students, namely in making the questions adjusted to the characteristics of students. This was explained by Nurseto (2011) that a media plan must be based on needs, as an indicator of the need for among others the abilities, skills, and attitudes of students that we want to be mastered by students.

Sub aspect of the language used is a formal language, which means that in writing questions or answer keys to the media using language that is easily understood and does not use language that is relaxed or every day. Based on Nugrahani's research (2007) the results of research on linking visual readability with learning outcomes can show that visualization of messages at both abstract and concrete poles has a relatively similar effect on student learning outcomes.

D. Conclusion

The validity of the "KARUNIA" Question Wheel learning media developed is included in the highly valid category with a value of 88%. Based on the results of validation by 3 (three) experts, it is known that the Learning Wheel "KARUNIA" teaching media that are developed still need a stage of improvement for product perfection.

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