

DEVELOPMENT OF KUMAL (KUIS ANIMALIA) GAME EVALUATION TOOL FOR SMA/MA CLASS X

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ABSTRACT

Biological evaluation tools are very important. The current reality is that biology evaluation tools are rarely used in learning because of limited tools, materials and time. One of the efforts made is to develop a computer/PC-based KUMAL (Kuis Animalia) game application. The aim is to determine the feasibility of the KUMAL game developed as a learning evaluation tool on animalia material. The research was conducted using Research and Development (R&D) research and development methods. The samples in this study were 3 material experts, 3 media experts and 3 IT experts.

The validation results from this study are 84% with a very feasible category from the material validator, 83% with a very feasible category from the media validator and 83% with a very feasible category from the IT validator. The conclusion of this study is that the KUMAL game is feasible to be used as an evaluation tool for biology learning in animalia material for class X SMA/MA.

Keywords: *alat evaluasi, game KUMAL, animalia*

1. INTRODUCTION

Assessment is an important component in the delivery of education. Efforts to improve the quality of education can be pursued through improving the quality of learning and the quality of its assessment. The quality of learning can be seen from the results of the assessment (Mardapi, 2012). A teacher needs a learning evaluation tool, namely an assessment instrument. In addition to using printed form, evaluation can also be done by utilizing information technology (IT), because conventional evaluation tools using paper in their implementation have weaknesses so that they are less effective (Pratiwi and Susanti, 2016).

The evaluation tool product developed is in the form of an application that can be used as a substitute for conventional evaluation tools. Some of the advantages that the KUMAL game-based evaluation tool (Kuis Animalia) can provide include being more efficient, increasing student interest. For example, research conducted by Cahya Kurnia Dewi in 2018 produced a Kahoot application evaluation tool, Wan Muhammad Gustiawan Iqbal in 2017 produced a wondershare quiz creator-based evaluation tool, and research by Rini Agustin Eka Yanti & Yuyun Susanti in 2017 produced a product in the form of an application. smart cart game uno accounting as an evaluation tool, students' responses to the book showed a good response. This research was conducted to determine the feasibility of the game KUMAL (Kuis Animalia).

2. METHODOLOGY

Development research is guided by the development research design by Borg and Gall in (Sugiyono, 2011). The researcher limits the research development steps from ten steps to five

steps to product revision due to time constraints, limited expertise of researchers to carry out the next stages and the state of the COVID 19 pandemic which is still not finished.

The model used in Brog and Gall's research (Sugiyono, 2011) is that respondents and validation experts are more involved so that the product being tested has higher validity and feasibility. Quantitative data analysis used a validation questionnaire based on the Likert scale with the following formula.

$$P = \frac{\sum x}{\sum xi} \times 100\%$$

Information:

P = percentage

x = total score of data collection results

= total score criteria

(Source adapted from Sugiyono, 2011)

The percentage range used in determining the eligibility category is as follows.

Table 1. Criteria for KUMAL Game Eligibility

Percentage of Respondent Rating	Qualitative Criteria
80% < x ≤ 100%	Very worth it
60% < x ≤ 80%	worthy
40% < x ≤ 60%	Decent enough
20% < x ≤ 40%	Not worth it
0% < x ≤ 20%	Very not worth it

(Source: adapted from Sugiyono, 2011)

Description: x = the percentage result of the feasibility assessment.

3. RESULT AND DISCUSSION

Evaluation is an activity to collect information that is used to determine the right alternative in making a decision (Arikunto & Cepi 2009). Evaluation in learning is carried out to determine the results of students' abilities, especially in learning. Evaluation can be in the form of exams or tests using worksheets or other tools in the form of applications on HP and PC. Game applications are one example that can be used as an evaluation tool. Jenni Novak (2012) states that games can create health and fitness that are used for psychological and rehabilitation therapy. Some games are also created with creative expression or aesthetic appreciation from developers to share their creative ideas.

KUMAL game is a game that contains a biology learning quiz on animalia material. This game can be used in education to grow students' motivation and interest in learning because this game displays images, audio and animation. The quiz questions used in the quiz are in accordance with the KI and KD of animalia learning. The writing of the quiz questions was revised according to the assessment and suggestions of the validator, the words "polyps and obelia" which should be "polyps from obelia" (figure 1). The material expert assessment was obtained with a percentage of 83% so that the KUMAL game was categorized as very suitable to be used as an evaluation tool. The material expert scores are in Table 2.

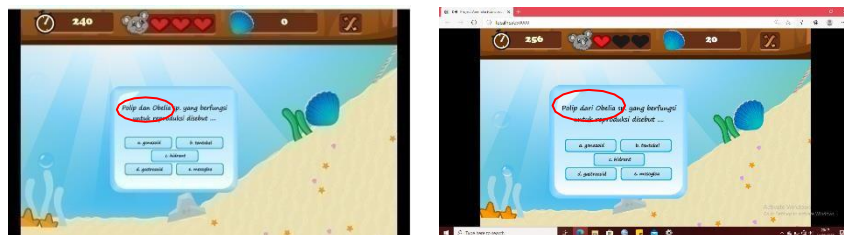


Figure 1 a Question number 14 before revision

Figure 1 b Question number 14 after revision

Table 2. Tabulation of assessments by material expert validators

Statement	Validator 1	Validator 2	Validator 3
1	4	4	5
2	4	5	5
3	4	4	5
4	4	5	4
5	4	4	4
6	4	3	3
7	4	4	4
Total score	28	29	30
Percentage	80%	83%	86%
Maximum score		35	
Average		83%	

Assessment by media expert validators has a percentage of 83%. This value is included in the very feasible category. So tha the KUMAL game in terms of display and presentation components is said to be very feasible. The tabulation of the media expert's assessment is in Table 3. The media validator provides suggestions, including when students find questions in the game, the bullies should stop attacking, so students can concentrate on doing quiz questions. The next suggestion is that when students have answered the questions, give notifications in the form of sound or something else so that students know the answer is wrong or right and the size of the quiz questions is enlarged (Figure 2).



Figure 2 a space before revision



Figure 2 b space for distraction after revision



Gambar 2 c Question Size Before revision



Gambar 2 d Question Size After revision

Table 3. Tabulation of assessments by media expert validators

Statement	Validator 1	Validator 2	Validator 3
1	4	5	5
2	3	4	4

3	5	5	4
4	4	4	4
5	4	4	3
6	4	4	4
7	4	4	4
8	3	4	4
9	4	5	5
10	5	5	4
11	4	4	4
12	4	4	4
Total score	48	52	49
Percentage	80%	87%	81%
Maximum score		60	
Average		83%	

KUMAL games are also rated by IT expert validators. The results of the assessment by an IT expert validator have a percentage of 84%. The scoring criteria are included in the very decent category. So the KUMAL game in terms of IT components is said to be very feasible. The tabulation of the IT expert's assessment is in Table 4. The IT validator also provides suggestions that are used as the basis for improving or developing the KUMAL game media. The advice given by the IT validator is that if possible, the KUMAL game can be run on a smartphone. Because currently the KUMAL Game can only be run on a computer / laptop.

Table 4. Tabulation of assessments by IT expert validators

Statement	Validator 1	Validator 2	Validator 3
1	3	4	4
2	4	4	4
3	4	4	4
4	4	4	4
5	5	4	4
6	5	4	4
7	5	5	5
8	5	4	5
9	4	4	4
10	4	4	4
11	4	4	4
Total score	47	45	46
Percentage	85%	82%	84%
Maximum score		55 %	
Average		84 %	

The use of the KUMAL game evaluation tool is interesting to use in evaluation in terms of appearance, and ease of operation.

4. CONCLUSION

The KUMAL game evaluation tool which contains animalia material quizzes for class X SMA/MA is very feasible to use with an average percentage score of 83% from material expert validators, media experts and IT experts.

Acknowledgements

The authors would like thank: supervisors 1 and 2 for patiently waiting and guiding me, don't forget to also the future wife who is always fierce to remind me to quickly finish all of this.

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