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DEVELOPMENT OF SODA API LEARNING MEDIA BY APPLYING JIGMENT LEARNING METHODS FOR CITIZEN STUDENTS LEARNING

Binti Mahmudah [1*]
Ida Putri Rarasati, M.Pd [2]
Iqbal Baihaqi, M.Pd [3]

[1,2,3] PPKN, FKIP, Universitas Islam Balitar, Jalan Majapahit No 2-4 Sananwetan Kota Blitar Jawa Timur – 66137 Indonesia

Abstract

In every learning carried out in an educational institution, the best thing is always done to improve the results of the learning. In this case learning can be assisted by learning media. The learning media can increase students' absorption in receiving each subject matter. For its use, the media used is SODA API media. This SODA API media has characteristics that can improve teamwork. Referring to the application of this learning media, it is applied to SMAN 4 Blitar. It is hoped that the results of its implementation can be; (1) developing the effectiveness and efficiency of learning, (2) developing students' enthusiasm for learning, (3) developing students' interest and motivation in learning, (4) developing students interact directly with reality, (5) overcoming the diverse learning modalities of students, (6) streamline the communication process in learning, (7) improve the quality of learning. This learning media will be optimized for the JIGMEN learning method which will certainly help students absorb the material presented.

Keywords: *Learning media, SODA API, learning methods, JIGMEN*

[1*]Corresponding author, email: **Bintimahmuda@gmail.com**

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1. INTRODUCTION

In today's world of education, many efforts are used to increase student interest in learning. Many factors affect education ranging from educational facilities, quality of teachers, learning media and other factors that support success in education. Learning media is one of the important factors in education, because learning media has a big influence on students' motivation and interest in understanding lessons.

In this case, there are still many schools that attach importance to the cognitive aspect, the lack of use of innovative and creative learning media, teaching methods that are still conventional and do not look at the problem of student interest in learning. Researchers made observations to two schools in the city of Blitar. The schools are MAN 1 Kota Blitar and SMA 4 Blitardi Jl. Melati No.49, Kepanjen Kidul. The learning resources used are textbooks (erlangga, intan pariwara) and the PPKn module.

Based on researcher interviews with teachers and students at 2 schools, researchers conducted interviews with 2 (two) PPKn subject teachers and 20 students in 4 different classes. teaching and learning uses a lot of literacy including a combination of sharing internet resources, student activity sheets, student books and teacher books. The media used such as LCD, the use of wifi that has not been maximized and other props. The media and learning methods that are applied vary according to the condition of the material when the learning takes place. Obstacles or difficulties occur during the teaching activity process in general, there are not many obstacles, only the time is too late and students want an earlier time so that learning is more conducive. The school's facilities and infrastructure are adequate. The results of student information on Civics learning so far are learning that has too much material and is boring because the teacher does not develop learning models or methods and uses little learning media.

The learning style of students only listens and takes notes on the material, asks a few questions and answers questions. This is due to the teaching style of the teacher who only uses the same method. The difficulty in the Civics learning process is that the teacher gives few explanations but gives a lot of assignments. The desire of students for future Civics learning activities is that teachers are expected to have many learning methods applied to the classroom, develop active and innovative learning media so that the learning process becomes interesting and fun so that it can increase interest in learning Civics.

Based on several previous studies such as research from Anita Lie in "Cooperative Learning: Practicing Cooperative Learning in Classrooms" in 2002. Revealed that collaboration in the classroom

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environment can improve students' understanding of the lessons delivered and can improve the character that exists in students . Likewise in research conducted by Rusman in "Learning Models: Developing Teacher Professionalism" in 2010 said that good cooperation between students will run in harmony with cooperation between teachers and students, so that the learning process and understanding of student literacy will run smoothly. good. Based on these several studies, the author finally developed this research.

2. RESEARCH METHODS

1. Research Method

1. Research Approach and Design

The approach to this research uses the type of Research and Development (RnD). The model in this development research is a procedural model, namely a descriptive model and outlines the development steps. Based on the theory from Sugiyono (2012: 409), the steps that must be followed to produce a product include the potential and problem stages, data collection, product design, design validation, product revision, and finished product. In this study, the development steps were only until expert validation until it was valid and became a finished product and was declared feasible by method and language experts.

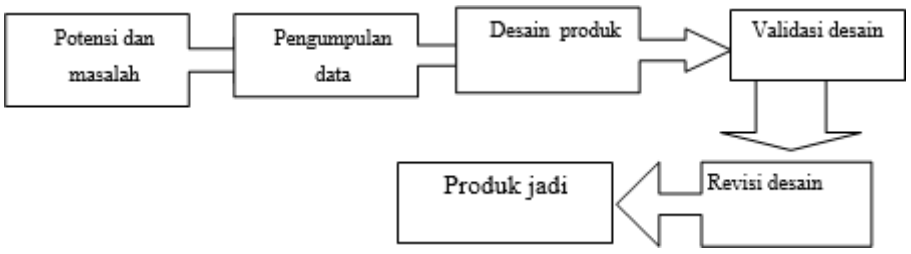

Figure 2.1 Diagram of the steps for developing a game-based jig man learning model (Sugiyono, 2015:408)

In general, the description of the stages in the R & D model is as follows:

1. Potential Problems

   Research can depart from the potential or problem. Potential is anything that when utilized will have added value.

2. Gathering Information

   After the potential and problems can be addressed factually, then it is necessary to collect various information that can be used as material for planning certain products that are expected to overcome these problems. Here a separate research method is needed. What method will be studied depends on the problem and the accuracy of the objectives to be achieved.

3. Product Design

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The products produced by Research and Development vary. In the field of technology, the orientation of technological products that can be utilized for human life is products that are quality, energy efficient, attractive, inexpensive, light weight, economical, and have multiple benefits. The final result of research and development activities is a new product design, complete with specifics. The product design must be manifested in a drawing or chart, so that it can be used as a guide for assessing and making it. In the example of educational products, the final result of this activity is in the form of a learning model design, namely the design of a new learning model. The design of this model is still hypothetical. It is said to be hypothetical because its effectiveness has not been proven, and will be known after conducting tests.

4. Design Validation

   Design validation is an activity process to assess whether the product design, in this case the new teaching method will rationally be more effective than the old one or not. It is said rationally, because the validation here is still an assessment based on rational thinking, not facts on the ground. Product validation can be done by presenting several experts or experienced experts to assess the new product designed.

5. Design Improvements

   After the product design is validated through discussions with experts and other experts, the weaknesses will be identified. These weaknesses are then tried to be reduced by improving the design. The task of improving the design is the researcher who wants to produce the product.

6. Finished product

   After the product has gone through all the processes until it is declared valid by the experts, it becomes a finished product.

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2. Research Frameworkand Procedure

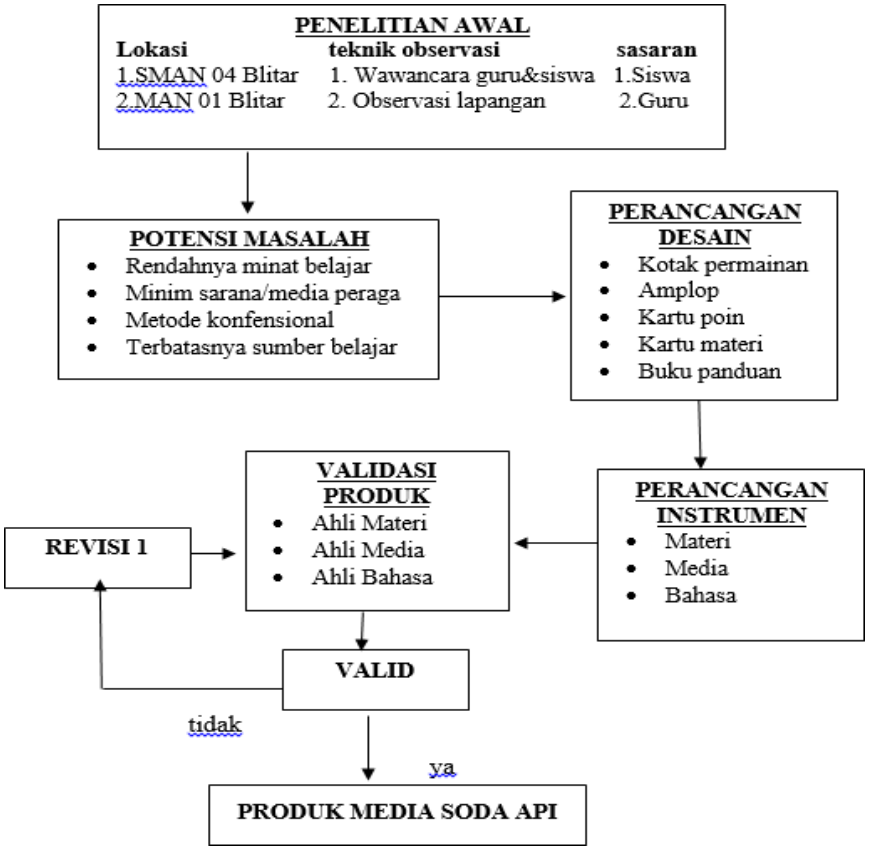

Figure 2.2 Diagram of SODA API media research framework

In general, the description of the stages in the diagram of the SODA API media research framework is as follows:

Starting from research observations in two schools in Blitar, namely SMAN 04 Blitar and MAN 01 Kota Blitar by interviewing 2 PPKn teachers and using a questionnaire technique for students in each school of 2 classes. After getting the results from these observations, the researchers identified problems at the school, namely, the problem of lack of varied learning media, conventional learning and lack of student interest in Civics lessons and lack of interest in reading.

Furthermore, the analysis of indicators that will be achieved by researchers here is the influence of SODA API media on student interest in learning. Followed by making a product design design, the first thing to make is the game design itself, namely designing a game box or box that will be used for the game and designing envelopes, point cards, material cards and game guide books then designing the jigment method that will be applied. by merging SODA API media. Furthermore, expert validation was carried out

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from linguists, material experts and media experts. If it is not valid, the first revision is carried out and validation returns, until it is declared valid then it becomes a SODA API media product.

3. Research Product Design Plan

1. Analysis

Before developing instructional media, the first step is analysis. The analysis is carried out to find out the basic needs related to the product to be presented and to support the implementation of this research. The analysis carried out is:

1. Needs Analysis

Needs analysis was carried out to determine the condition of students in learning both physically and psychologically, so that researchers could choose media according to the conditions and needs of students. Lack of interest in learning and reading makes researchers develop SODA API media by applying the JIGMEN method, students are expected to be more interested in learning and more active in learning activities.

2. Material Analysis

SODA API learning media materials are the rights and obligations of citizens

3. Concept Analysis

Concept analysis aims to determine the content of the material in the learning media that is applied using the developed JIGMEN method. This analysis is aimed at identifying, detailing, and systematically compiling relevant concepts to be taught based on the early-late analysis. The learning process will begin with orientation, division of expert teams, class arrangement, group discussions, group presentations, and end with a game tournament to find winners from groups who answer a lot of questions and understand the material to make it easier for teachers to provide an assessment of SODA learning media steps. APIs as follows:

a. Type II Jigsaw Steps

a. Orientation.

b. Grouping.

c. Formation and development of expert groups

d. Expert group discussion (exposure) in the group

e. Test (assessment)

f. Group confession

b. Tournament Game

Group tournaments use the game Tigama, Tigama is a combination of two words, namely Ti (three) Ma (Main) TIGAMA. Tigama game is a game that involves 3 group roles where one group becomes the

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expert team as well as the key that determines whether an answer is right or wrong and the other two groups as challenger group 1 challenger 2 who fight for answers to get points. In the game tournament, there are 3 groups playing and the other groups will be the audience or spectators. Group 1 will serve as a team of experts who ask questions to the challenger group, group 2 and 3 will serve as challengers who will take the answers given by the expert team. The group that raises their hand the fastest will be given +1 points and the correct answer will get 3 points and if they are wrong they will get -1 points and so on until 3 questions are completed until they get the winner. The rules of the tournament using the Tigama game are as follows:

The expert team will give a choice to the competing groups for the numbered envelope to be read out. Then the expert team opened the envelope and read the questions aloud. The challenger team will raise their hand and the one who raises their hand the fastest will get an additional +1 point and get a chance to answer the question, if the answer is wrong it will get -1 point and if it is correct 3 points the question can be thrown to the opposing group. And so on until the envelopes given run out and each will get points that can be counted, each group that can reach the semi-finals and the final is the group with more points.

1. The process scheme in this game tournament is depicted in the diagram below.

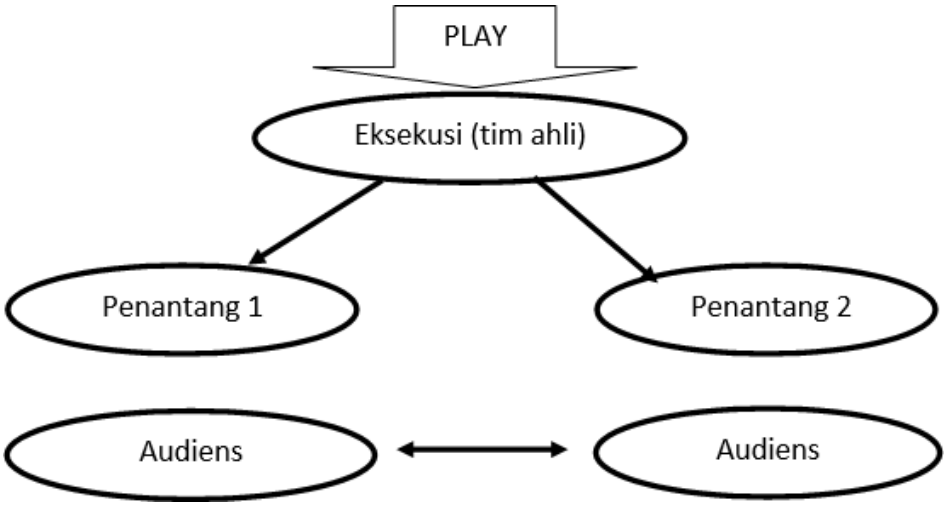

Figure 3.1 Schematic diagram of the tournament process

2. Game tournaments that have been permanently formed are illustrated in the diagram below to determine the order of the groups playing the TIGAMA game from the preliminary, semi-final and final groups to get the winner.

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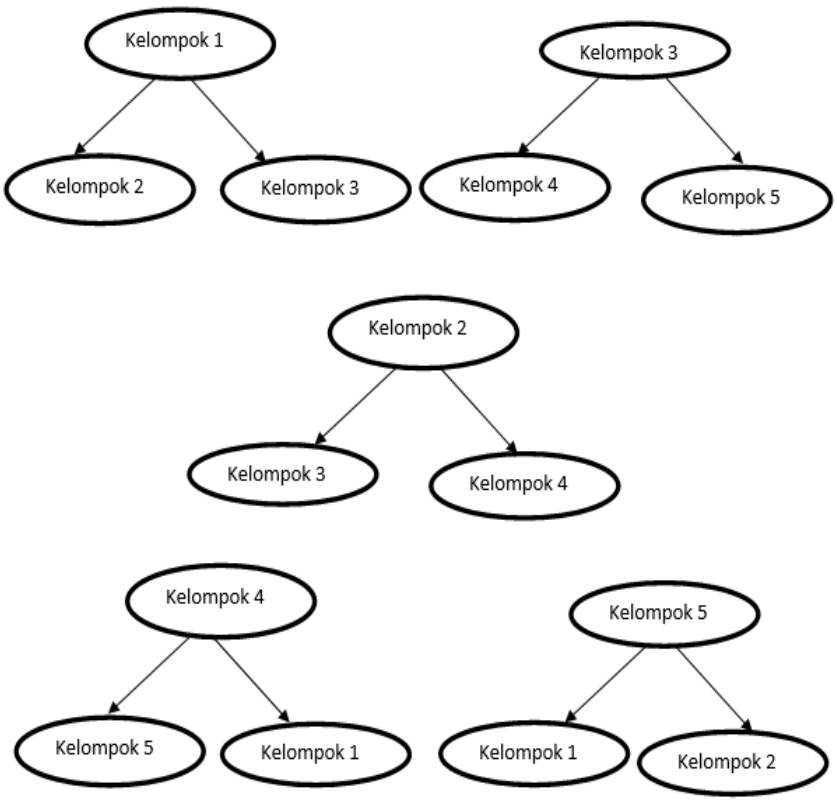

Figure 3.2 Diagram of the elimination round

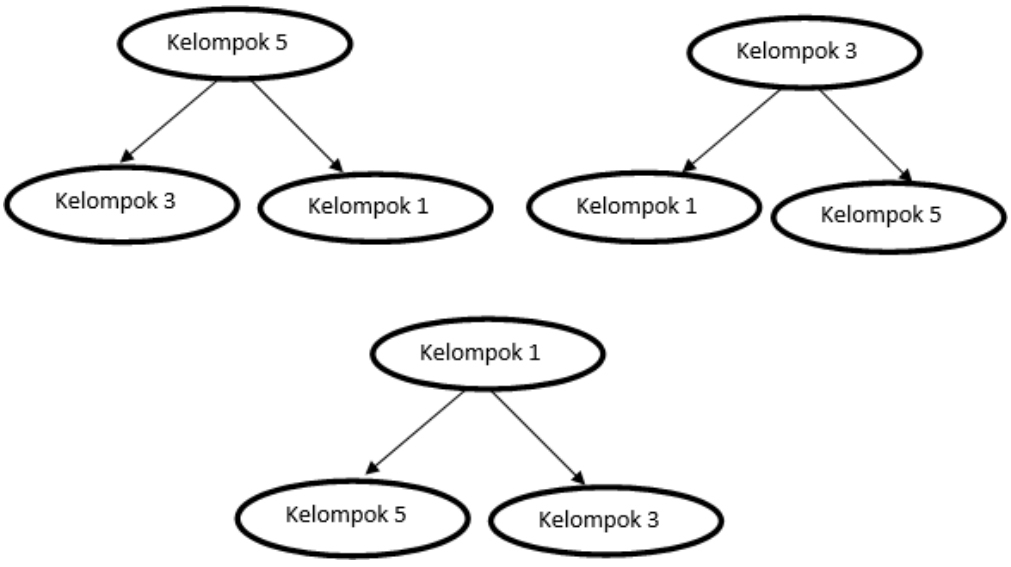

Figure 3.5 Diagram of the Final Round

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3. RESULTS AND DISCUSSION

a. Product Trial

The product trial in this study was the researcher used an instructional simulation which used an interest questionnaire to find out what percentage of students were interested in the game-based JIGMEN learning model, observations and interviews to determine the implementation of game-based JIGMEN syntax for Civics learning.

The trial was carried out using the experimental group and the control group, the trial used the experimental class using 2 series, the first series used two observation and interview techniques, there were 5 stages carried out by the researcher to determine the implementation of the JIGMEN syntax then the second series used a questionnaire technique with using a student response instrument aims to measure students' interest in learning after the implementation of the JIGMEN learning model.

In the first series stage, there are 1-5 stages to measure the implementation of syntax and the 6th stage is used to measure student interest in SMAN 4 Blitar. While the control class trial used a questionnaire technique using a student response instrument aimed at measuring interest in learning before the implementation of the JIGMEN learning model. The trial starts on August 5 - September 11 2019. The first series of experimental class trials uses class XII IPA2, XII IPA1, XII IPS3, XII IPS4 totaling 136 students and the second series using class XII IPA3 and XII IPS6 totaling 52 students and the control class trial used class X IPS2 with a total of 36 students at MA Syekh Subakir Blitar. The following are the results of syntax testing and student questionnaires on the game-based JIGMEN learning model for learning Civics in the material on Citizenship Rights and Obligations.

b. Product Validation

Validation is an activity process to assess whether the product design made is feasible or not to be used. Validation can be done by presenting several experts or experienced experts to assess the newly designed product. Each expert is asked to rate the SODA API learning media, so that its weaknesses and strengths can be identified. The results of the validation are in the form of comments, suggestions, and input that are used as the basis for revising the product stage that is made or developed.

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Table 3.1 expert criteria

NO	Expert field	Expert Criteria
1	Media expert	Lecturers/teachers who are experienced, competent in the field of learning media, lecturers who are in charge of learning strategy courses.
2	Linguists	Lecturers / teachers who are experienced, competent in the field of Indonesian, teachers / lecturers who are in charge of Indonesian language lessons.
3	Material expert	Experienced, competent lecturers/teachers in the field of Civics learning materials.

1. Instrument Validation

This validation instrument is using a questionnaire while the validation question grid is as follows:

Table 3.2 Grid of learning media validation questions

NO	STATEMENT	
1.	**Contents in SODA API media**	**1,2,3,4,**
2.	**Desain media SODA API**	**5,6,7,8,9,10**
3.	**Overall rating**	**11,12,13,14**

Table 3.3 Language validation grid

NO	ASPECT	
1	**SODA API media language compatibility**	**1,2,3,4,5,6,7,8,9,10**
2	**Overall rating**	**11.12,13,14**

1. Validation analysis using a Likert scale. Calculate the percentage of the Likert scale score obtained from the validation instrument. Like the following table:

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Table 3.4 Alternative Sizes of Questionnaire Answers

Score	Score Criteria
1	Very less
2	Not enough
3	Enough
4	Good
5	Very good

The total assessment score obtained is entered into the Likert scale category with the formula: Likert scale formula

$$Pk = \frac{S}{N} : 100$$

Description:

Pk = Eligibility category value

S = Total score obtained

N = Total score ideal

The criteria for the level of product validity and revision are as follows:

Table 3.5 Percentage of Validation Questionnaire

No	Value Achievement Criteria (effectiveness)	Level of Effectiveness/Validity
1	00,00% - 20,00%	Totally invalid
2	21,00% - 40,00%	Invalid
3	41,01% – 60,00%	Not valid
4	61,00% - 80,00%	Quite valid
5	81,00% - 100,00%	Very valid

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1. Research Results

1. Analysis of Potential Problems

In research and development, one of the important stages that must be carried out is to analyze potential problems and solutions. By analyzing potential problems, the reasons or basis for developing the product or model will be known. Analysis of potential problems is the foundation that strengthens the research and development background.

In analyzing potential problems related to learning support such as learning methods, the researchers developed the JIGMEN learning method for Civics learning in high school. The lack of learning methods for Civics learning activities in high school is the reason researchers develop the JIGMEN method and teachers will have new media to support learning to be more leverage. Learning that initially lacks varied methods will have a new method in the form of a game-based JIGMEN method, also because students lack confidence when answering questions from the teacher or other students during presentations. The JIGMEN learning method requires students to be active in answering questions, either opening a book or analyzing a problem with their own thoughts.

The potential problem with the JIGMEN learning method is that currently there are quite a lot of materials and it takes quite a long time to make the method inefficient during the game tournament process. The solution so that the method can be more efficient is to make guidebooks and tutorials in explaining the concept of this method to make it easier for students to understand students in learning when using the JIGMEN learning method. The trial phase was carried out in class XI IPA 2 SMAN 4 Blitar. The trial was carried out by using the learning method in the classroom after the researcher explained the concept of the method. During the use of the method, the researcher made observations on the use of the method. After using this method, the researcher distributed a questionnaire to all students to find out whether it increased students' interest in learning to the game-based JIGMEN learning method for learning or not.

2. Product Development Results

The syntax or steps that have been developed by combining the jigsaw learning model with game tournaments are as follows:

1. Orientation

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Preparing the material, the material that will be presented in game- based JIGMEN cooperative learning is designed in such a way that it is in accordance with the form of learning held in groups. Before starting the game-based JIGMEN cooperative learning, the teacher first conveyed the learning objectives and explained some of the rules in game-based JIGMEN learning.

2. Group formation

Before starting the game-based JIGMEN cooperative learning, small heterogeneous groups were first formed. Whether in terms of intelligence, social background, fun, or something else. There are several things that need to be considered to establish a cooperative group, namely as follows:

a. ranking students based on their academic achievement in class.

b. determine the number of groups, the number of groups consists of 5 - 6 groups.

c. divide students into groups. Make sure that the group members formed consist of heterogeneous students.

3. Class setting

In the seating arrangement here, we choose to use a circular model, so that it can make it easier for students to see and pay attention to presentations so that it is easy for teachers to pay attention to students

4. Group discussion

After the teacher gives the material or problems that must be done in each group, then each group discusses the material in order to understand the material or problems given by the teacher.

5. Group presentation

At this stage, each group must present the results that have been discussed together so that the other groups can understand the material presented because each group has different material.

6. Group tournament

Group tournaments use the game Tigama. Tigama is a combination of two words, namely Ti (three) Ma (Main) TIGAMA. Tigama game is a game that involves 3 group roles where one group becomes the expert team as well as the key that determines whether an answer is right or wrong and the other two groups as challenger group 1 challenger 2 who fight for answers to get points.

7. Group award

Group awards will be given to the group that gets the most points.

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c. **Product Validation**

The model validation stage is carried out so that the game-based JIGMEN learning model can be determined based on model experts and linguists. The validation of the game-based JIGMEN learning model is carried out by model experts who are competent in the field of learning models, and linguists who are competent in the field of language. The validators in this study are as follows:

Table 4.1 validator

No	Validator name	Description	Expert field
1	Drs. Setiawan Adi s,. M.Pd	Lecturer in learning strategy courses	Model expert
2	Ida Putriani, M.Pd	Lecturer in learning strategy courses	Model expert
3	Drs. Teguh Susila	Pkn subject teacher for SMA 04 Blitar city	Model expert
4	Dra. Wahyu Warujiati, M.Pd	Teacher of Indonesian subjects at SMA 04 Blitar city	Linguists
5	Dra. Romelah	Teacher of Indonesian subjects at MA Syekh Subakir Blitar	Linguists

1. Product Validation Results

Before conducting the trial, the game-based JIGMEN learning model will also be validated first by a model expert. Model validation is carried out by lecturers who are in charge of learning strategy courses and high school/MA class teachers who have backgrounds in accordance with the learning model developed. Validation by model experts aims to obtain information, criticism and suggestions so that the game-based JIGMEN learning model becomes a quality product in terms of appearance. The results of the validation can be seen in table 4.2. The maximum score of each statement item in the validation sheet is 4 while the minimum score is 1.

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Table 4.2 Results of Model Expert Validation Questionnaire

NO	VI	V 2	V3
1	4	3	3
2	4	3	3
3	4	3	3
4	4	3	3
5	3	3	3
6	3	3	3
7	3	3	3
8	4	3	3
9	4	3	3
10	4	3	3
11	4	3	3
12	3	2	3
13	3	3	3
	47	3 8	39
	47 ─X 100% 52 = 81,6%	38 ─X100% 52 = 75,4%	39 ─X 100% 52 = 64,2%
	124		
	124 — X 100% = 75,2% 156		

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1. Student Questionnaire Results

Questionnaire after using SODA API learning media using the JIGMEN method

Table 4.3 the results of the questionnaire on students' interest in the use of SODA API learning media using the JIGMEN method.

NO	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
1	1	1	1	1	1	1	1	1	1	1
2	0	0	1	0	0	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	0	0	1	1	1
5	1	1	0	1	0	0	0	1	1	1
6	1	1	1	1	0	1	0	1	1	1
7	1	1	1	1	0	1	0	1	1	1
8	0	1	1	1	1	0	1	0	0	1
9	1	0	0	0	0	0	0	0	0	1
10	1	1	1	1	1	0	1	1	0	1
11	0	1	0	1	0	0	1	1	0	1
12	0	1	0	0	0	0	1	1	0	1
13	1	1	0	1	1	1	0	1	0	1
14	0	1	1	1	1	1	0	1	0	1
15	0	0	0	1	0	0	1	1	1	1
16	1	1	1	1	1	0	1	0	1	1
17	1	1	1	1	1	1	1	0	1	1
18	0	1	0	0	0	0	1	0	1	1
19	1	1	1	1	1	1	1	0	1	1
20	1	1	1	1	1	1	1	0	1	1
21	1	1	1	1	1	1	1	0	1	1
22	1	1	1	1	1	1	1	0	1	1
23	1	1	1	1	1	1	1	0	1	1
24	1	1	1	1	1	1	1	0	1	1
25	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	0	1	1
27	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1	1
31	1	1	1	1	0	1	1	1	1	1
32	1	1	1	1	1	0	0	0	1	1
33	1	1	0	0	0	0	0	0	1	1
34	1	1	0	1	1	1	0	0	1	1
35	1	1	1	1	1	1	0	0	1	1
36	1	1	1	1	1	1	0	0	1	1
37	1	1	1	1	1	1	0	0	1	1
38	1	1	1	1	1	1	0	1	1	1
39	1	1	1	1	1	0	1	1	1	1
40	1	1	1	1	1	1	0	1	1	1
41	1	1	1	1	1	1	0	1	1	1
42	1	1	0	1	0	0	0	1	0	0
43	1	1	0	1	0	0	0	1	0	0
44	0	1	1	0	0	0	1	1	0	0
45	0	0	0	0	0	0	1	1	0	0
46	0	1	0	1	0	1	0	1	1	0
47	1	1	1	1	0	0	0	1	1	0
48	0	1	0	1	0	0	0	1	1	0
49	1	1	1	1	1	1	1	1	1	0
50	1	1	1	1	1	0	1	0	1	1
51	0	1	0	1	0	0	1	1	1	0
52	0	0	1	0	0	0	1	1	1	0
Total	39	47	37	44	32	30	32	33	41	42

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Description:

P1- p10 is a question and NO is the name and number of students which is replaced by a number.

The results of the questionnaire were transferred to the frequency distribution table:

Table 4.4 the percentage of the results of the student interest response questionnaire on the use of SODA API learning media using the JIGMEN method.

Item pertanyaan	(%) jawaban Ya	(%) jawaban Tidak
P1	39	13
P2	47	5
P3	37	15
P4	44	8
P5	32	20
P6	30	22
P7	32	20
P8	33	19
P9	41	11
P10	42	10
Total	377	143
Rata-Rata	37,7	14,3

To find out the percentage of "Yes" answers obtained from the questionnaire, it is calculated first and then displayed in a percentage scalerange as follows:
The value of the answer "yes" : 1 The value of
the answer "no" : 0 Convective in percentage:

The value of the answer "yes" : 1 x 100% = 100%

The value of the answer "no" : 0x 100% = 0% (so no need to count) Calculation of "yes" answers from the questionnaire:

Average "yes" answer:

$$\frac{37,7}{52} \text{ X } 100\% = 75,5\%$$

Discussion

This development research aims to determine the feasibility and interest of students towards SODA API learning media using the JIGMEN method for Civics learning in high school. The developed media was declared suitable for use based on validation by experts, namely learning model experts and linguists.

Media experts assess the combination, presentation, steps and time, before being validated the SODA API learning media using the JIGMEN method combining jigsaw and tournaments, after validating the model experts, the SODA API learning media using the JIGMEN method is changed

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to a combination of media and tournament methods. For linguists, there are many spellings that must be corrected, such as the word "in input" becomes "entered". Another example of improvement in the validation of material experts, model experts and linguists can be seen in the attachment of the SODA API learning media using the improved JIGMEN method to get a validation value of 75.2% with a "valid" category from model experts, as well as the results of expert validation language gives a value of 78.3% with a "valid" category for the language used in SODA API learning media using the JIGMEN method. Based on the results of expert validation, game-based JIGMEN learning media is declared suitable to be used as a learning model for Civics lessons in SMA/MA.

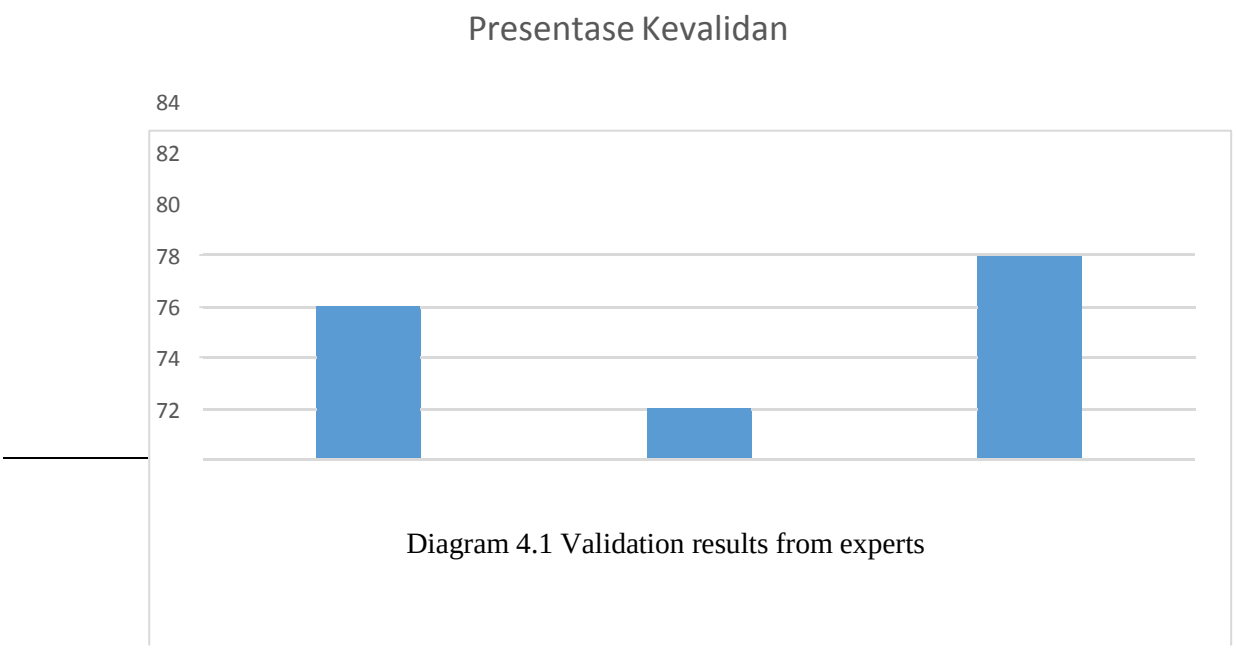

Diagram 4.1 Validation results from experts

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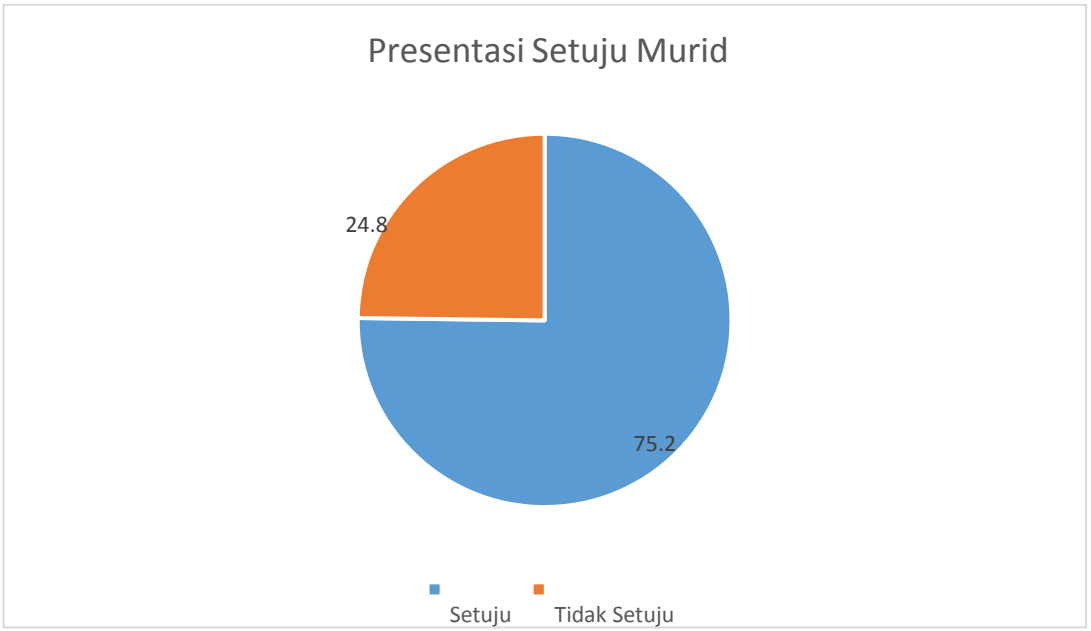

Diagram 4.1 Results of the percentage of students agreeing

d. CONCLUSION

Based on the results of this research and development, it can be concluded that:

1. This development aims to determine the feasibility and interest of students in the SODA API learning media using the JIGMEN method for Civics learning in high school. The developed model was declared suitable for use based on validation by experts, namely learning model experts and linguists. The model expert assesses the combination, presentation, steps and time, before being validated by the SODA API learning media using the JIGMEN method combining jigsaw and tournaments, after validating the model expert. SODA API learning media using the JIGMEN method is converted into a combination of the model and the tournament method. For linguists, there are many spellings that must be corrected, such as the word "in input" becomes "entered". SODA API learning media using the JIGMEN method that has been improved gets a validation value of 75.2% with the "fairly valid" category from the model expert, Likewise with the validation results of linguists giving a value of 75.2% with the "fairly valid" category for language which is used in SODA API learning media using the JIGMEN method. Based on the results of expert validation, the learning model and language of the SODA API learning media using the JIGMEN method was declared feasible to be used as a learning model for Civics lessons in SMA/MA.

2. The researcher tested the SODA API learning media using the JIGMEN method by using the experimental class and control class, in the experimental class the trial was carried out in class XII of SMAN 4 Blitar there were 5 stages carried out by researchers when testing the game-based JIGMEN

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learning model with stages 1-4 is the stage of testing the implementation of syntax by using an observation instrument conducted by researchers and testing stage 5 using student questionnaires to determine the increase in student interest after getting the application of JIGMEN and for the control class carried out in class X IPS2 MA Syekh Subakir using a questionnaire technique in the form of student response instruments aimed at to find out students' interests before applying the SODA API learning media using the JIGMEN method. At first the researchers tried to use the experimental class. After the product was tested on students with material on Citizenship Rights and Obligations, the researchers distributed an interest questionnaire to students, the results of the interest questionnaire that students filled out were 75.2% so that a decision was made that the questionnaire data showed a number close to positive. Furthermore, in the control class before the experiment, the researchers distributed interest questionnaires to students, the results of the interest questionnaires that students filled out were 36.3%, so the decision was taken that the questionnaire data showed a number close to negative. 2% after learning media SODA API using the JIGMEN method.

5. SUGGESTION .

So that game-based JIGMEN learning model development products can be utilized optimally, it is necessary to give some related suggestions, including:

1. Product utilization suggestions

   Suggestions for the use of SODA API learning media development products using the JIGMEN method are as follows:

   a. Students are expected to read the manual/instructions contained in the SODA API learning media using the JIGMEN method carefully so that when they enter the game students are ready.
   b. Students are expected before starting the TIGAMA game to read books or related sources so that the material received and understood is easier to answer questions in the TIGAMA game.
   c. Students are expected to do all the JIGMEN rules in order to gain knowledge and be able to practice creativity in learning.

2. Suggestion for further product development

   a. For all parties who want to develop the product further, it can be done by adding other materials, so that the resulting product is more comprehensive, JGMEN products can be adapted to any material.
   b. If the product that the researcher makes still has difficulties in understanding it can be corrected in the wording to make it easier to understand.

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