

## IMPLEMENTATION OF HY-BON EDUGAME BASED ON GENDER OF STUDENTS' LEARNING INTEREST IN HYDROCARBON

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**Abstract:** This research is geared toward observational data, which aims to determine the increase in the interest in learning of male and female gender students in science material, especially low chemistry. The objectives to be achieved in this research are to determine the implementation of the quasi-experimental method of "Hy-bon" edugame based on gender on interest in learning and to determine the increase in student interest in learning based on gender in the "Hy-bon" edugame. This research was conducted at SMAN 3 Sidoarjo, precisely in grade 12 MIPA 7 with a total of 33 students. The results showed that the student response questionnaire had an overall assessment average of 82%, and the student learning interest questionnaire had an overall assessment average of 77%. From the research results obtained through interviews that female gender students have more interest in learning by using the edugame media "Hy-bon".

**Keywords:** *edugame, hy-bon hydrocarbons, hydrocarbon derivatives, gender, interest in learning, student responses.*

### INTRODUCTION

In learning, there are two aspects that stand out and are important, namely media and methods. Based on research conducted by Hidayatulloh et al (2020) shows that a person's knowledge from hearing experience is 11%, from visual experience 83%, while students are said to have finished learning if they are able to understand at least 65% of all learning objectives. If the teacher still uses the old learning method or uses the lecture method, then it will be difficult. Teachers should use different learning methods and approaches that allow students to be active and learning to be more effective. Observations made by researchers at MTs Raudlatul Ulum Karangploso class VII science subjects, that in the learning process in the classroom the teacher uses the lecture method. This is contrary to the applied curriculum, namely Curriculum 13. Where learning should be student-centered instead of teacher-centered. The lack of use of learning media in the classroom resulted in students not understanding the concept of the material. In addition, students also feel bored because they have to listen to the teacher's explanation during the teaching and learning process (Hidayatulloh et al., 2020).

Science and technology has developments that have an impact in various fields of human life, including the field of education (Muchson et al., 2021; Deni Ainur Rokhim et al., 2020; Zuhriyah, 2016). The development of science and technology requires students to become creators and facilitators in the learning process (Hikmah et al., 2016; Priana, 2017). Therefore, the use of information and communication technology is one of the principles of learning in schools

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(Permendikbud No 22, 2016; Rokhim et al., 2020; Widarti et al., 2021). A teacher also needs to advance the application of information and communication technology in various ways, one of which is learning with educational games. Educational games or edugames are a form of games that have content that is more towards learning activities that are developed in education and training programs (Risnani & Adita, 2018; Siong & Osman, 2018). Edugames can be used by teachers as learning media in the classroom. The implementation of edugame for learning media is very important to support the success of the learning process, and this is related to increasing interest in learning. Interest in learning is a self-interest to be interested in a particular learning object (Risnani & Adita, 2018). A good interest in learning will generate a great effort, be serious and not give up quickly in learning.

One form of games, namely educational games, has content and focuses more on learning activities that are developed in education (Hamari et al., 2016). Educational games have various types, one of which is digital educational games. Digital educational games are one of the game genres that are operated on various digital devices such as computers, consoles, and mobiles (Andreu-Andrés & García-Casas, 2014). Edugames can now be easily obtained by students and teachers through internet services. The results of research using edugame in each subject are widely reported to increase student interest in learning at various levels of education (Dony Novaliendry, 2013).

But few edugames are in accordance with the characteristics of students and the content is in accordance with the learning objectives/school curriculum. The results of observations prove that most high schools have adequate facilities in the form of a computer laboratory that is sufficient for student learning activities in at least one class, including at SMA Negeri 3 Sidoarjo. This opens up opportunities for the implementation of edugame in the school. Therefore, in this study, we will implement edugames to increase interest in learning.

## METHOD

This study used a quasi-experimental method. This research was conducted in November 2021 at SMA Negeri 3 Sidoarjo in the odd semester of the 2021/2022 academic year. The target of this research is 12th grade Mathematics and Natural Sciences 7 students who have previously studied the nomenclature of hydrocarbon derivative compounds.

The procedure of this research begins with giving treatment to students by using the edugame media "Hy-bon" then followed by filling out student response questionnaires, and filling out learning interest questionnaires along with interviews conducted to students. This interview was conducted on 5 students with female gender and 5 students with male gender to determine the effect of gender on the edugame media "Hy-bon".

The instruments used in this study were student response questionnaires and student learning interest questionnaires. The percentage of student response questionnaire data was analyzed based on a Likert scale. Measurement with a Likert scale is done by giving a score of 1, 2, 3, or 4 on each statement. A score of 1 means "Strongly disagree", a score of 2 means "Disagree", a score of 3 means "Agree", and a score of 4 means "Strongly Agree". The results of student responses will then be analyzed using the percentage of Likert Scale data obtained by the formula:

$$P = \frac{F}{N} \times 100\%$$

Information:

P = Percentage of student answers

F = Number of respondents' answers

N = Respondent score

The percentage results obtained are then interpreted in a table as follows:

**Table 1.** Interpretation Criteria for Student Response Scores Source: (Sudjana, 2014)

Percentage (%)	Criteria
0-20	Very less
21-40	Not enough
41-60	Enough
61-80	Good/Valid
81-100	Very good/Very valid

Based on the interpretation of the score, the edugame media "Hy-bon" can be used as a learning medium with an achievement percentage of 61%. Then the percentage of student learning interest questionnaire data was analyzed based on the Likert scale. Measurements with a Likert scale were carried out by giving a score of 1, 2, 3, 4 or 5 on each statement. A score of 1 means "Strongly disagree", a score of 2 means "Disagree", a score of 3 means "neutral", a score of 4 means "Agree" and a score of 5 means "Strongly agree". The results of the student learning interest questionnaire will then be analyzed using the percentage of Likert Scale data obtained by the formula:

$$P = \frac{F}{N} \times 100\%$$

Information:

P = Percentage of student answers

F = Number of respondents' answers

N = Respondent score

The percentage results obtained are then interpreted in a table as follows:

**Table 2.** Interpretation Criteria for Students' Interest in Learning Score Source: (Sudjana, 2014)

Percentage (%)	Criteria
0-20	Very less
21-40	Not enough
41-60	Enough
61-80	Good/Valid
81-100	Very good/Very valid

Based on the interpretation of the score, the "Hy-bon" edugame media can increase students' interest in learning if the achievement percentage is  $\geq 61\%$ .

## RESULTS AND DISCUSSION

Student response questionnaire sheets were used to find out students' opinions about the "Hy-bon" edugame media. The results of the average student response questionnaire recapitulation data are as follows.

**Table 3.** Results of Student Response Questionnaires

No.	Statement	Percentage	Information
1	Is chemistry lesson fun?	72%	Well
2	Are you happy with learning using game media?	88%	Very good
3	By learning using game media, I feel excited to learn chemistry	84%	Very good
4	With the sound and pictures in the game, I can remember the information learned	86%	Very good
5	By learning to use game media, I can understand hydrocarbon material	77%	Well
6	In-game scoring can show the level of mastery of the material	80%	Well
7	Learning with this game media can motivate students to study hard	82%	Very good
8	Learning with this game media can motivate students to be responsive to technological developments	89%	Very good
Average		82%	Very good

From the results of the recapitulation data, the results of the student response questionnaires have an overall assessment average of 82%. This shows that the edugame media "Hy-bon" can be used as a learning medium because the percentage of achievement is 61%. In improving students' abilities, various efforts can be made, one of which is by using games in teaching and learning activities. In a study conducted by Lestari in 2015 stated that the use of games in the learning process can improve students' abilities (Lestari et al., 2015). The game has the integration of entertainment content in the game so as to create fun learning without compromising the material (Pratama et al., 2019). Edugames in learning can attract students' attention so as to make students more interested in learning. Based on research conducted by Fifi Nur Khofidhoh in 2012 showed that the game media received a good response from students with a percentage of 95.83%(Khofidhoh et al., 2012).

Based on interviews conducted with 5 female gender students and 5 male gender students, it was found that female gender students were more interested in learning using the "Hy-bon" edugame media so that female gender students' interest in learning was better than male gender students. The results of Nilza's research in 2020 showed that male gender students were less interested in learning with games. This is due to the type of game being played. Male and female students have differences in preferred games. Male gender students tend to like games that contain elements of violence such as fighting games (Salsabila et al., 2020).

The student learning interest questionnaire sheet was used to determine the effect of the "Hy-bon" edugame media on increasing students' learning interest. Based on research conducted by Sri Priyaningsih and Suyono in 2020, it shows that game media can increase student interest in learning with a percentage of 76.62%(Priyaningsih & Suyono, 2020). The results of the average student learning interest questionnaire recapitulation data are as follows.

**Table 4.** Results of Student Learning Interest Questionnaire

No.	Statement	Percentage	Information
1	Now I'm always present in class before the chemistry class starts than before	78%	Well
2	Now I always take chemistry lessons at school until class ends compared to before	76%	Well
3	Now I feel like it's a loss if I don't take chemistry lessons than before	75%	Well
4	Now during the chemistry learning process the teacher always uses learning media	79%	Well
5	The media in the matter of using the "Hy-bon" edugame that the teacher uses makes me really like chemistry	79%	Well
6	I am more active when learning chemistry is accompanied by media in questions using the "Hy-bon" edugame	76%	Well
7	Now I always take notes on the material presented or explained by the teacher	74%	Well
8	Now I am not satisfied if I have not fully mastered the subject matter of chemistry	77%	Well
9	Now I feel more relaxed when learning chemistry using media in questions using the "Hy-bon" edugame	78%	Well
10	Now I am more active when learning chemistry using media in questions using the "Hy-bon" edugame	75%	Well
11	Now I don't give up easily when I have difficulty in studying chemistry	76%	Well
12	Now I can easily remember chemistry subject matter when learning to use media in questions using the edugame "Hy-bon"	76%	Well
13	Now I can easily remember chemistry subject matter when learning to use Media in questions using the "Hy-bon" edugame	75%	Well
14	Now I always listen to the teacher's explanation from the beginning to the end of the chemistry lesson	75%	Well
15	Now I'm excited to watch the teacher teach chemistry lessons	79%	Well
16	Now I want to have better chemistry skills	86%	Very good
17	Now I have a target in chemistry learning achievement	78%	Well
18	Now if there is an empty lesson then I go back to the previous chemistry lesson	67%	Well

No.	Statement	Percentage	Information
19	Now I still follow chemistry lessons whoever the teacher teaches	79%	Well
20	Now I don't neglect chemistry lessons even though chemistry lessons are difficult to understand	81%	Very good
Average		77%	Well

From the results of the recapitulation data, the results of the student learning interest questionnaire have an overall assessment average of 77%. This shows that "Hy-bon" edugame media can increase students' interest in learning because the percentage of achievement is 61%. By increasing interest in learning, it is expected that students can have higher comprehension skills and be more active in the learning process (Suprpto, 2013). Putri's research results in 2013 showed that interest in learning can affect learning outcomes where the higher the interest in learning, the better learning outcomes will be (Muchtar & Rahmidani, 2018).

## CONCLUSION

Based on the results of the study, it was shown that the "Hy-bon" edugame media could increase students' interest in learning, especially for female students. This can be seen from the results of the student response questionnaire which has an overall average of 82%. "Hy-bon" edugame media can also increase students' interest in learning. This can be seen from the results of student interest in learning which has an overall average of 77%. Based on the overall results of interviews with male and female gender students, that female gender students have more interest in learning by using the edugame media "Hy-bon".

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