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Implementation of the Disaster-Based "Make A Match" Learning Model on Interest and Learning Independence of Islamic Private High School Students

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ABSTRACT

This study aims to determine the application of the Disaster based Make a Match learning model regarding student interest and learning independence. The type of this study is quasi-experimental by designing a non-equivalent, post-test only control group. The research subjects were class XI IPS Islamic private high school students in Jember Regency. The analysis of the data used is descriptive statistics and the Mann-Whitney test. As a result, the average learning interest score of the control class was 19.95, and the experimental class was 26.20. Hence, the average learning interest score of the experimental class was higher than that of the control class. Similarly, the average score of learning independence in the experimental class is more critical than in the control class. The control score is 17.35, and the experimental score is 34.20. The hypothesis test results showed a significant difference between the two groups using the Disaster based Make A Match learning model and the traditional learning model. The research concludes that students' interest and independence in learning using the disaster-based make a match learning model is more significant than in the conventional learning model.

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1. INTRODUCTION

Learning is an interaction between educators and learners, in which the goal is to achieve behaviour change. Learning objectives will be achieved if accompanied by an interest in learning by students (Y. D. Puspitarini & Hanif, 2019). High interest in learning will lead to high enthusiasm and attention in learning. Interest is part of the psychological conditions that affect the learning process and its achievement, which occurs when the process of interaction between people and objects of interest (Renninger & Hidi, 2010; Ruf, Zahn, Agotai, Iten, & Opwis, 2022).

Interest is a condition that shows an individual's interest in something. Someone interested will have more attention to the object of interest. Interest is an extraordinary inclination and excitement or

a great desire for something (Baharuddin & Wahyuni, 2015). Interest refers to a style of exercise that encourages individuals to face or engage in people, objects, activities, and experiences that are self-stimulated and demonstrated through participation, enthusiasm, and activity learning (Syahputra, 2020). Interest is indicated by the nature that tends to pay attention and remember a process of activity (Slameto, 2013).

Students must have a great interest so that learning objectives can be achieved. Students who have an interest will not experience compulsion in learning. Learning is a process of absorbing information whose output is an understanding implied by action so that changes in behaviour are created. Learning is a business process performed by humans to achieve behavioural changes that derive from their own experience of interacting with the environment (Slameto, 2013). Learning is a process to gain competencies, skills and attitudes through training or experience so that it has an impact on changes in individual behaviour (Baharuddin & Wahyuni, 2015). Based on the explanation above, the indicators of interest are feelings of pleasure, great desire, activity and attention.

Interest has an essential role in the learning process; as Simbolon (2014) stated, interest is used as the basis for doing learning and interest in determining learning outcomes. Interest is an essential component in intrinsic motivation and will influence learning more (Ruf et al., 2022). Interest affects the response process carried out by students in learning. Therefore, the stimulus provided must be appropriate and attract students' interest in learning to achieve learning objectives.

Student interest in learning plays an essential role in the student's learning process. Students' interest in learning largely determines their performance and educational decisions (Oppermann & Lazarides, 2021). Theoretically, developing interest is with support from external parties in the form of challenges, input and encouragement (Oppermann & Lazarides, 2021). Interest has a significant impact on the affective and cognitive of learners (Bagheri, Alinezhad, & Sajadi, 2020). Interest is not only used as an essential process in learning but must also be used as output after learning (Fryer, Shum, Lee, & Lau, 2021).

In addition to interest in learning, learning independence also has an essential role in learning activities (Agustina & Fajar, 2019). The nature of independence possessed by students will create an ability to solve problems independently without the help of others in learning activities. Every learning activity that places independent learning as an essential element will encourage the development of students to become lifelong learners (Agustina & Fajar, 2019). The independent nature possessed by students will create an ability to practice independently in different ways (Agustina & Fajar, 2019). Independence can also be interpreted as the nature of the responsibility possessed in learning activities.

Independent learning is self-awareness, driven by oneself, the ability to learn to achieve its goals. Independence is behaviour that shows the ability to take the initiative, overcome obstacles or problems, have self-confidence, do things without the help of others, and the desire to do things for oneself (Aftiani, Khairinal, & Suratno, 2021). Those who have independence have responsibility, initiative, courage, and are ready to accept risks and can become learners for themselves (Yamin, 2013).

Learning independence possessed by students will affect the expected learning objectives. The vital role of learning independence in the learning process is under research conducted by Ningsih & Nurrahmah (2016) that learning independence positively affects student learning outcomes. Students must be formed into independent learners to be responsible for learning activities and are confident in their abilities in participating in learning activities.

Interest and independence in learning must be owned by students so that the learning process can run effectively to achieve learning objectives. Both interest and learning independence have an essential role in learning activities. Academic units such as schools must prepare educators who can encourage students' interest and independence in learning. The teacher's role is crucial in creating interest and independence in learning. It is hoped that the learning process can be interactive, and there will be two-way communication between students and teachers so that interest and learning independence will be high.

Based on the initial observations, there is a low interest and independence in student learning. The low interest of students is evidenced by the lack of active learning, less attention to teacher explanations and is rarely involvement in learning activities. There are other obstacles to learning, such as students are rarely active in learning, rarely respond and sometimes do not attend for no apparent reason. Low independence is shown when students rely on teachers as learning resources. Students were not independent when they have to complete assignments or learning activities. Therefore, a cooperative learning model is needed to increase interest and independence in learning. One of the cooperative learning models is the Make A Match learning model. In this study, the Make A Match learning model applied will be linked to the concept of studysaster. The concept of studysaster learning is taken from the word study, which means learning, and saster, which comes from disaster, which means disaster.

The previous study explains that disaster learning is also expected to shift from knowledge to action because it is proven that students can be proactive with acquiring knowledge, apply with participation and ultimately take the initiative independently in terms of awareness of disaster risk (Nakano, Suwa, Gautama, & Yamori, 2020). It can be concluded that the studysaster learning concept is a vital learning concept applied to students in terms of education about disasters. Previous research (Amalia, Purnamasari, & Darsimah, 2021; Ellya Novera, Daharnis, Yeni Erita, 2021; Fauhah & Rosy, 2021; Fitriani, Wahjoedi, & Towaf, 2017; Gosachi & Japa, 2020; Paneo, 2020; Rosidha, 2020) has revealed a lot about the impact of the make a match learning model on learning activities and outcomes. Meanwhile, this research will focus on interest and independence learning and make the concept of a studysaster a novelty. The studysaster concept is integrated into essential competencies and then realized with the questions given.

This research is essential to answer research problems related to student interest and independence in learning. The disaster based make a match learning model is expected to increase students' interest and independence. Studysaster is also important because it can provide education to students from an early age on the values of Disaster. Disaster research on learning activities is a novelty in this study because, based on previous research, it lacks implemented disaster education in the classroom.

This study aims to determine the application of the Make A Match learning model based on disasters in increasing the interest and learning independence. Disaster education is one of the most effective processes in disaster management (Tsai, Chang, Shiau, & Wang, 2020). Disaster education will teach students about disaster risks, especially disasters that have never happened before, such as the COVID-19 pandemic. Disaster studies are considered an ideal context for learning, plus higher education courses that address issues related to disasters from multiple disciplinary perspectives (Cooper, Forino, Kanjanabootra, & von Meding, 2020).

2. METHODS

This study is quasi-experimental with a non-equivalent post-test only control group design. The total population was used as a study sample. The research subjects were 40 students of class XI IPS Islamic private high school in Jember Regency. Class XI IPS 1 has up to 20 students like a control class using a traditional learning model, while class XI IPS 2 has 20 students using a disaster based Make A Match learning model.

The subject in this study is economics, a basic skill for economic growth and development. The data acquisition method used observations, interest distributions, and questionnaires about students' independence. The scales used are the Likert scales of 1-4 scales: 4 = very agree, score 3 = agree, score 2 = disagree, score 1 = very disagree. The questionnaire was tested to get an idea of the feasibility of the test. The experiment was conducted on 40 class XI IPS students outside the research school.

After testing the questionnaire, it was analyzed to test the validity of using the product-moment correlation technique, while reliability testing used the Alpha Cronbach technique. Data analysis used descriptive statistics and a non-parametric test using Mann Whitney to determine the difference between the two groups. The independent variable in this study is the make a match learning model,

while the dependent variable is interest and learning independence. The following research design is used:

Tabel 1. Research Design

E	-	X	O^1
K	-	X	O^2

Source: Nugraheni & Dina (2017)

E= experimental class
K= Control Class
O^1 = Interest and independence of students after treatment
O^2 = Interest and independence of students after treatment

Tabel 2. Research Planning

Class	Beginning	Treatment	Ending
Experimental class	-	Using of the Make a Match learning model based on studysaster	questionnaire
Control Class	-	Using of conventional models	questionnaire

Source: processed by researchers and Nugraheni & Dina (2017)

The hypothesis in this study is as follows:
Ho = there is no significant difference between the experimental group and the control group
Ha = there is a significant difference between the experimental group and the control group

3. FINDINGS AND DISCUSSION

3.1 Instrument Validity Test Results

It is testing the validity of this study using product-moment correlation. The basis for taking the Pearson validity test is said to be valid if r count > r table, while it is invalid if r count < r table. The value of the r table with a significance level of 5% and the number of respondents N = 40 is 0.312. The validity test results show that r count > r table, and it can be concluded that the interest variable questionnaire, which consists of 8 question items and a total of 10 question items, is declared valid. The interest and learning independence questionnaire was declared valid based on the validity test.

3.2 Instrument Reliability Test Result

Reliability testing using Cronbach's Alpha value with the basis of questionnaire decision making is declared reliable if Cronbach's alpha value is > 0.6. The results of the comprehensive reliability test of 8 questions on the variable interest in learning are 0.764, so Cronbach's alpha value is > 0.6. Then a total of 10 questions on the learning independence variable are 0.757, so Cronbach's alpha value is > 0.6. The interest and learning independence questionnaire was declared reliable based on the reliability test.

3.3 Results of the Normality Test of Interest and Independent Learning

Tabel 3. Result of the Normality Test of Learning Interest

Tests of Normality

	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
MMinatBelajar	Kelas Kontrol	.286	20	.000	.829	20	.002
	Kelas Eksperimen	.141	20	.200*	.872	20	.013

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Source: processed by researchers

Tabel 4. Result of the Normality Test of Learning Independent

Tests of Normality							
		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Kemandirian Belajar	Kelas Kontrol	.239	20	.004	.655	20	.000
	Kelas Eksperimen	.285	20	.000	.584	20	.000
a. Lilliefors Significance Correction							

Source: processed by researchers

The basis for decision making for the normality test is if sig > 0.05, then the data is normally distributed otherwhise if the sig value < 0.05, then the data is not normally distributed. Based on the test of normality data above, the learning interest variable is not normally distributed because the value of Sig < 0.05 and the learning independence variable are not normally distributed because of the value of Sig < 0.05. Therefore, it can be concluded that the data of interest and learning independence have met the requirements of the Mann Whitney test.

Tabel 5. Mann Whitney Learning Interest Test Result

Test Statistics[a]	
	Minat Belajar
Mann-Whitney U	49.500
Wilcoxon W	259.500
Z	-4.109
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000[b]
a. Grouping Variable: Kelas	
b. Not corrected for ties.	

Source: processed by researchers

After conducting a normality test on the variables of interest and learning independence, the next step is to analyze the data using the Mann Whitney test because the data are not normally distributed. The Mann Whitney test determined the difference between the experimental and control groups. The basis for making decisions on the Mann Whitney Test is if the value of Sig < 0.05, then there is a significant difference, whereas if the value of Sig> 0.05, then there is no significant difference. Based on the Mann Whitney test, interest in learning is above the value of Sig < 0.05, so it can be concluded that there is a significant difference in learning interest between groups using conventional learning models and the Make A Match learning model based on disaster.

Tabel 6. Mann Whitney Learning Independent Test Result

Test Statistics[a]	
	Kemandirian Belajar
Mann-Whitney U	37.500
Wilcoxon W	247.500
Z	-4.425
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000[b]
a. Grouping Variable: Kelas	
b. Not corrected for ties.	

Source: processed by researchers

Using the Mann-Whitney Independent Learning Test Table above, we can conclude that there is a difference in learning interests between groups that use traditional learning models and Make A Match learning models based on disaster. Therefore, Ha is accepted, and Ho is rejected. In other words, using the Make A Match learning model to learn interest and independence is effective.

Tabel 7. Descriptive Statistical Result

Variabel	Minat Belajar		Kemandirian Belajar	
	Kelas Kontrol	Kelas Eksperimen	Kelas Kontrol	Kelas Eksperimen
N	20	20	20	20
Mean	19.95	26.20	17.35	34.20
Standar Devisiasi	4.979	1.936	5.994	5.376
Sum	399	524	347	684

Source: processed by researchers

Based on the descriptive statistical analysis test above, we can see a difference in learning interests between the control class and the experimental class. Since the average learning interest score of the control class is 19.95 and the experimental course is 26.20, the average learning interest score of the experimental class is higher than the average learning interest score of the control class. Similarly, since the mean students' independence in the control class is 17.35 and the experimental class is 34.20, we can conclude that the mean students' independence in the experimental class is higher than in the control class.

Discussion

The Make A Match learning model to learn interest and independence is effective. The research hypothesis shows differences in the interests and learning independence of students in classes that used conventional learning models with disaster based Make A Match learning models. Students' interest and learning independence in the experimental class are higher than in the control class, so this answers the research problem presented in the introduction. The disaster based Make A Match learning model can be used to learn. That is following research conducted by (Sulistio, 2021; Sutrisni & Piliang, 2021) which found that students' interest in learning increased when using the Make A Match learning model. When using the Make A Match learning model, interest in learning can be categorized as Good (Maghfiroh, Syarif, & Rahmat, 2020).

The results of this study are supported by previous studies that found significant differences in learning independence among students using traditional and make a match learning models (Susanty, Nurkamto, & Suhano, 2014). Learning independence increased in the second cycle using a matching learning model (Aminah, Yefterson, Sejarah, & Sosial, 2021). The Make A Match learning model can be independent learning because it encourages students to take the initiative rather than relying on the teacher to match questions and answers. Interest and learning independence of students will be stimulated by the learning model used by the teacher. Therefore it is essential to apply a cooperative learning model during learning.

The make a match learning model is one of the exciting learning models. This model is expected to increase students' interest and independence in learning. The steps for the Make A Match learning model are (1) the teacher explains the material and gives assignments to students to study at home (2) The students are divided into four groups, namely groups A, B, C and D (3) the teacher gives cards questions and answers to each group (4) The teacher gives instructions to each group to match the question with the correct answer (5) The teacher limits 30 minutes to find the answer. (6) The student with the best score will get a reward (8) The teacher reviews and gives a conclusion.

The Make A Match learning model that is applied will be linked to the concept of disaster. The studysaster learning concept is a learning concept that aims to educate students about disasters (B. I. Puspitarini, 2021). The concept of studysaster learning has been widely used in overseas education to

provide education and the participation of students in dealing with disasters. The perception of children's risk of disasters is crucial because this can impact awareness of disaster risk, transfer risk knowledge to families and other communities, and improve skills (Zhong, Cheng, Zhang, Huang, & Wang, 2021).

The concept of disaster learning will encourage students to learn independently and have higher knowledge about disaster risk (Shoji, Takafuji, & Harada, 2020). Disaster risk can be minimized by transferring to relevant agencies such as education units by providing practical knowledge to the general public about the disaster's nature, causes, and effects (Righi, Lauriola, Ghinoi, Giovannetti, & Soldati, 2021). Future research is expected to review the application of disaster learning in the classroom, for example, by conducting a qualitative study.

4. CONCLUSION

Hypothesis testing shows that there is a significant difference between interest and independent learning between controls using traditional learning models and experimental groups using disaster based Make A Match learning models. The suggestion to teachers is to start paying attention to the appropriate learning model to use for learning. The disaster based Make A Match learning model can optionally be used as a learning model designed to increase student interest and learning independence. This study has limitations on the basic competencies used. Further research could develop it so that students can learn more about disasters.

Conflicts of Interest: This statement is on behalf of all Authors that there is no conflict of interest. The authors have seen and approved the submitted manuscript. The article is the author's original work and has not been visited or considered elsewhere. The authors will take full responsibility for the article.

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