Nurul Infitah-Implementation of the Disaster-Based "Make A Match" Learning Model on Students' Interests and Learning Independence

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Submission date: 31-Mar-2022 11:19PM (UTC+0900)
Submission ID: 1797871989
File name: Nurul_Infitah-Al_Ishlah.docx (100.22K)
Word count: 4944
Character count: 29108

Contents list avaliable at Directory of Open Access Journals (DOAJ)
Al-Ishlah: Jurnal Pendidikan
ISSN: 2087-9490 (Printed); 2597-940X (Online)
Journal Homepage: http://www.journal.staihubbulwathan.id/index.php/alishlah

Implementation of the Disaster-Based "Make A Match" Learning Model on Students' Interests and Learning Independence

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DOI:

Article Info

Keywords:
Make a match
Studysaster
Interest and Learning Independence

Abstract

This study aims to determine the application of the Studyaster-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 analysis of the data used is descriptive statistics and the Mann-Whitney test. As a result, the average learning interest score of the experimental class was 19.95, and the experimental course was 26.20, so the average learning interest score of the experimental class was higher than that of the control class. Similarly, the average value of learning independence in the experimental class is more critical than in the control class. The control grade is 17.35, and the experimental grade is 34.20. The hypothesis test results showed a significant difference between the two groups using the study-based matching learning model and the traditional learning model.

Kata kunci:
Mencocokkan
Studi kebencanaan
Minat dan Kemandirian Belajar

Abstrak

Tujuan penelitian ini adalah untuk mengetahui penerapan model pembelajaran Make-a-Match berbasis Studyaster ditinjau dari minat dan kemandirian belajar siswa. Jenis penelitian ini adalah jenis eksperimen semu dengan menggunakan non-equivalent post-test-only control group design. Analisis data yang digunakan adalah statistik deskriptif dan uji Mann-Whitney. Hasilnya, rata-rata skor minat belajar kelas kontrol adalah 19,95 dan rata-rata skor minat belajar mata kuliah eksperimen adalah 26,20, sehingga rata-rata skor minat belajar kelas eksperimen lebih tinggi daripada rata-rata skor minat belajar kelas kontrol. . Demikian pula rata-rata kemandirian belajar kelas eksperimen lebih besar dari kelas kontrol, 17,35, dan kelas eksperimen 34,20. Hasil uji hipotesis menunjukkan bahwa terdapat perbedaan yang signifikan antara kedua kelompok yang menggunakan model pembelajaran matching learning dan model pembelajaran tradisional.

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

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Volume;issue;month;year
Received date month year; Received in revised form date month year; Accepted date month year; Available online date month year

achievement, which occurs when the process of interaction between people and objects of interest (Andreas, 2002; Renninger et al., 1992; Renninger & Hidi, 2010; Ruf et al., 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 (Marsh et al., 2012; Oppermann & Lazarides, 2021; Simpkins et al., 2006). 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 et al., 2020; Hidi & Ann Renninger, 2006; Hidi & Harackiewicz, 2000; Lerkkanen et al., 2012). Interest is not only used as an essential process in learning but must also be used as output after learning (Fryer et al., 2021).

In addition to interest in learning, learning independence also has an essential role in learning activities (Agustina & Fajar, 2019; Benson, Phil., & Voller, 1997). 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; Egel, 2009). The independent nature possessed by students will create an ability to practice independently in different ways (Agustina & Fajar, 2019; Benson, Phil., & Voller, 1997). 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 et al., 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 results of initial observations of students in class XI or grade two of Madrasah Aliyah (MA) Nurul Ulum that there is low interest and learning independence of students, low student interest is evidenced by being less active in learning, paying less attention to teacher explanations and rarely being involved in activities learning. The number of students who ask questions and are active in learning activities is only 2-3 people out of 40 students. There are other obstacles in learning, such as students are rarely active in learning, rarely respond and sometimes do not attend for no apparent reason. A total of 40 students in each school sometimes in a week there are 3-4 students who attend without explanation.

Another problem is that students rely on teachers as a source of learning. Students are not independent when it comes to completing assignments or taking classes. Therefore, we need an easy to follow, interactive, and engaging learning model to encourage students to learn independently. A learning model is a learning strategy that enhances learning interest and independence. A learning model is a form or implementation strategy for providing learning materials to students. The educator's learning model fits the goals to be achieved. Learning models are an essential strategy for achieving learning goals. One of the co-learning models is the Make-A-Match model. The Make-a-Match learning model is a learning model in which the teacher prepares a question or problem card, prepares an answer card, and then the student searches for a pair of cards (Aliputri, 2018).

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 concept of studysaster learning is taken from the word study, which means learning, and saster, which comes from disaster, which means 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 et al., 2021).

Disaster education is one of the most effective processes in disaster management (Tsai et al., 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 et al., 2020).

Another 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 et al., 2020). Based on the explanation in the research above, 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 et al., 2021; Fauhah & Rosy, 2021; 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. The following is a lattice on disaster matters:

Tabel 1. Lattice About Disaster

Basic competencies	Question Indicator
Analyzing the concepts of economic growth and economic development and problems and how to overcome them. Presenting the findings growth problem economy and development economics and how to deal with it.	There is an illustration of Indonesia's economic growth, which impact the Asian financial crisis of the 1990s. Students can explain the meaning of economic growth.
	There is data on natural disasters that can be one of the factors disrupting the economy. Students mention earthquake disaster mitigation.
	An illustration of the threat of a demographic bonus can potentially create a disaster for the environment in the process, such as exploiting nature, adding to waste, and air pollution. Students mention how to deal with environmental and air disasters.
	An explanation is presented that the Covid-19 pandemic harms economic growth. Students mention ways to minimize the spread of the COVID-19 virus.
	An explanation was provided that the Covid-19 disaster harmed economic development goals in the education sector. Students mention the impact of the COVID-19 pandemic on development goals in education.
	Indonesia's poverty rate data is presented. One of the causes of poverty is the high unemployment rate. Students look for ways to tackle unemployment.
	The role of the government in carrying out various policies to improve Human Resources (HR) to overcome economic problems such as poverty and unemployment is presented. Students mention how to increase HR.
	BPS data is presented for the working-age population affected by the Covid-19 disaster. With this data, the government is making efforts to tackle poverty. Based on the illustration of the government's efforts to overcome poverty. Students analyze the notion of economic development.
	A description of natural disasters such as floods and landslides on economic activities such as production and distribution is provided. Students mention how to deal with floods and landslides.
	Give illustrations about the Covid-19 disaster, which affected the disruption of economic activities, causing a shortage of masks, tissues, hand sanitiser and medical equipment. Students initiate steps to educate the public not to do punic baying.

This study aims to determine the application of the Make A Match learning model based on disasters in increasing the interest and learning independence of students in class XI IPS Madrasah Aliyah (MA) Nurul Ulum. The concept of disaster learning will encourage students to learn independently and have

higher knowledge about disaster risk (Shoji et al., 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 et al., 2021). The first part of this study discusses the background of the research, theoretical studies regarding interest and independence in learning, and the disaster-based make a match learning model—the third part of the research methodology, the fourth part of the results and discussion. The last part is the conclusion and recommendations for further research.

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 subjects of this study consisted of 40 students in class XI IPS MA Nurul Ulum who had an address in the Mayang district of 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' self-study. 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 2. Research Design

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

E= experimental class
K= Control Class
O^1 = Interest and independence of students after treatment
O^2 = Interest and independence of students after treatment (Nugraheni & Dina, 2017)

Tabel 3. Research Planning

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

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

FINDINGS AND DISCUSSION

In this section, we will discuss the research results and discuss them by comparing them with previous research.

A. 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 arithmetic < 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.

B. Instrumen 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.

C. Results of the Normality Test of Interest and Independent Learning

Tabel 4. 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

Tabel 5. 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

The basis for decision making for the normality test is if sig > 0.05, then the data is normally distributed and vice versa 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 6. 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.	

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 difference in learning interest between groups using conventional learning models and the Make A Match learning model based on studysaster.

The make a match learning model is one of the cooperative learning models. This learning model significantly influences interest in learning (Narti, 2016). This analysis also follows research conducted by Faishol & Hidayah (2021), which explains that the Make A Match learning model is a learning model that encourages fun and can increase students' interest in learning. The make a match learning model affects students' learning interests and increases students' learning interests (Faishol & Hidayah, 2021; Nugroho, 2019).

Tabel 7. 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.	

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 studysaster. 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. The results of this study are supported by previous studies that found significant differences in learning independence among students using traditional and matching learning models (Susanty et al., 2014).

Learning independence increased in the second cycle using a matching learning model (Aminah et al., 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.

Tabel 8. 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

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 learner autonomy in the control class is 17.35 and the experimental class is 34.20, we can conclude that the mean learner autonomy in the experimental class is higher than in the control class.

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 research-based matching learning models. The suggestion to teachers is to start paying attention to the appropriate learning model to use for learning. The studysaster-based Make-a-Match learning model can optionally be used as a learning model designed to increase student interest and learning independence. This survey is limited in terms of research, as the main questions are rarely used. Further research can be advanced and related to essential abilities so that students can learn more about disasters.

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