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by Maimun Tp

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Analysis of Student's Critical Thinking Ability from Gender and Learning Style using Edmodo E-Learning

Maimun Maimun
Universitas Islam Negeri Mataram
West Nusa Tenggara, Indonesia
https://orcid.org/0000-0002-4018-8437

Bahtiar Bahtiar
Universitas Islam Negeri Mataram
West Nusa Tenggara, Indonesia
https://orcid.org/0000-0000-1234-5678

Abstract. The Industrial Revolution 4.0 is marked by the Internet of Things development; its presence is so fast. Many things that were not thought of before suddenly appear and become innovations, including in the world of education. This study aims to analyze students' critical thinking skills in terms of gender and student learning styles using E-learning-based Edmodo. This type of research is descriptive quantitative research. This research is a quasi-experimental study with a group post-test only design. This research was conducted on 75 junior high school students in Mataram. Collecting data on student's critical thinking skills using a description of five numbers. Identification was made by giving the sampled students a questionnaire to find their learning styles. Data analysis used descriptive statistics assisted by the Rash model. The results showed that the critical thinking skills of male and female students were not much different. In addition, the study's results also showed that students with kinesthetic learning styles had better critical thinking skills than those with visual and auditory learning styles.

Keywords: critical thinking ability, Edmodo, gender, learning style, VAK

1. Introduction

Islamic Religious Education is education understood and developed from the teachings and fundamental values of the Qur'an and Sunnah (Tsoraya et al., 2022 & Khaidir & Suud, 2020). Islamic education is also a process of developing

human potential toward forming an actual human being with an Islamic personality under Islamic values (Abbas et al., 2021 & Rahmawati & Asbari, 2022). Islamic religious education in schools is expected to be able to form personal piety (individual) and social piety so that religious education is not likely to foster fanaticism, foster intolerance among students and the Indonesian people and weaken religious harmony and weaken national unity and integrity (Amiruddin et al., 2019).

Learning Islamic Religious Education is one of the lessons that students must follow at all levels, including students at the junior high school level. There are three primary materials in learning Islamic Religious Education: faith, morals, and worship (Zarkasyi et al., 2020). The purpose of learning Islamic Religious Education in junior high schools, as stated in the 2013 curriculum, is to develop faith through giving, developing knowledge, fertilizing, understanding, and experiencing students' experiences of the Islamic religion so that they become human beings who continue to build their faith and piety. Acting Director of Islamic Religious Education, Directorate General of Islamic Education (Ditjen), Ministry of Religion of the Republic of Indonesia, Dr. Rohmat Mulyana Sapdi, M. Pd said that Islamic religious education in schools should be a way to open students' critical thinking skills. In the context of independent learning, students' necessary thinking skills are needed, and students can be directed or guided to ask questions about things considered standard ((Paul & Elder, 2019).

The learning objectives of Islamic Religious education have not been fully achieved (Wahyuni & Bhattacharya, 2021). The results of interviews by researchers with teachers of Islamic religious subjects in one of the junior high schools in Mataram City show that learning Islamic Religious Education is often considered easy by students. In fact, many students still have learning outcomes below the average learning outcomes in schools. This causes students' critical thinking skills to the problems presented in Islamic Religious Education learning are also not optimal.

Students' critical thinking in learning Islamic Religious Education is still shallow. This is evidenced by the lack of student understanding of the material provided and the lack of understanding of the questions given (Fatonah et al., 2022 & Sartika et al., 2020). Students in Islamic Religious Education learning tend to accept the material being taught without studying it more deeply and sustainably (Mansir & Karim, 2020). Thinking critically is an essential ability student possess in solving problems in learning Islamic Religious Education (Mispani et al., 2021). The student's ability in critical thinking will not only make them have something they feel is given, but they will have confidence that the given turns out to have a strong reason. The importance of critical thinking skills is in line with the demands of the 21st Century, where students must have 4C

skills (critical thinking and problem solving, communication, collaboration, and creativity and innovation) (Kembara et al., 2019; Jalinus, 2021 & Widiawati et al., 2018).

Many factors affect students' low critical thinking skills (Mulyanto et al., 2018). One of the factors is the learning process that is not optimal (Leasa, 2018). Teachers in the learning process must pay attention to the methods and media for delivering material to students (Winarto et al., 2020). Teachers must be able to choose the suitable media to support teaching and learning activities (Mustafa et al., 2019). One learning media that can support learning activities is the Edmodo learning media (Wahyuningtyas, 2019).

Edmodo is an attractive application for teachers and students with social elements similar to Facebook, but there is more excellent value in this social network-based educational application (Handayani et al., 2019). Edmodo users can create profiles and chat with other people connected to the website (Sangeetha, 2016) (del Valle Mejías, 2020). In addition, students can also ask teachers for information about grades or assignments and teachers can upload student grades and assignments on the web (Oyelere et al., 2016).

The results of the research by Wibowo & Astriawati (2020) showed that there was a significant increase in student learning outcomes who were taught using Edmodo-based e-learning compared to those taught with conventional face-to-face learning with a post-test score of 92.89 for the experimental class and 78.35 for the control class. Supriyatno et al., (2020) also showed that the use of Edmodo e-learning was effective in improving students' critical thinking skills.

Learning using Edmodo is a social network-based learning platform intended for teachers, students, and parents of students (Alqahtani, 2019 & Lubis & Sari, 2019). Edmodo was first developed at the end of 2008 by Nic Borg and Jeff O'hara, and Edmodo is an e-learning program that implements an easy, efficient, and fun learning system (Turmini et al., 2019). Edmodo can make students and teachers enter forums to discuss with each other, do online quizzes, and access learning materials anywhere and anytime as long as they are connected to the internet (Wahyuni et al., 2020). Students can open discussion forums like social networks and about learning materials, just like classes in the real world, ranging from attendance, tests, and quizzes, to contacts to collect homework (Gay & Sofyan, 2017).

Each individual has their learning style, so it is necessary to pay special attention to the teacher in determining students' critical thinking skills. Learning style is one of the crucial variables concerning how students understand lessons at school, especially Islamic Religious Education lessons (HR, 2018). Teachers need to analyze their students' learning styles to carry out appropriate learning for

students. In carrying out the learning process, teachers must provide space for students to have authentic experiences, observe and reflect on them from various points of view, form abstract concepts and generalize them into theories, and finally actively experience these theories and test what has been learned. They learn in complex situations (Manipuspika, 2020). DePorter et al. (2010) classify learning styles into three types: Auditorial, Visual, and Kinesthetic.

Based on this, the researchers were interested in analyzing students' critical thinking skills regarding gender and learning styles using Edmodo based on E-learning in Islamic Religious Education learning.

2. Methodology

Research Design

The type of research used in this research is descriptive quantitative. This research is quasi-experimental research with a group post-test only design. The design of this research is as follows.

Table 1: One Group Post-test Only Design

Treatment	Postest
E-learning Based Edmodo Learning	Critical Thinking Ability Test
	Student Learning Style Questionnaire

Participants

A population is a group of people with the same characteristics. The population involved in this study were 270 Grade VII students of SMPN 1 Mataram, SMPN 2 Mataram, and SMPN 15 Mataram. In contrast, the sample is part of the population with the same characteristics. The sampling technique in this research is purposive sampling. The purposive sampling technique is a sampling technique with specific considerations. The sampling considerations in this study were the Islamic Religious Education learning schedule at different times/hours between the three schools, adjacent schools, and students who had not studied the material for commendable behavior, so the sample used was 75 people.

Research Procedures

This research was conducted from February to April 2022 at SMPN 1 Mataram, SMPN 2 Mataram, and SMPN 15 Mataram in the Academic Year 2021/2022. This research was conducted concerning the following research procedures.

Table 2: Research procedure

No.	Stages	Activity
1	Stages of Research Preparation	Research design
		Study of literature
		Observing the school environment
		Preparing Edmodo E-learning media
		Making a critical thinking ability test instrument
		Making a learning style questionnaire

2	Stages of Research Implementation	Validating instruments about critical thinking skills and learning style questionnaires
		Edmodo E-learning
		Carry out post-test
3	Final Stages of Research	Perform data processing and analysis
		Make a discussion of the research results
		Making research conclusions

Instruments

The instruments used in this study consisted of instruments for critical thinking skills and student learning style questionnaires. The essential thinking ability instrument was used as written test questions describing 5 numbers. In contrast, the learning style questionnaire was used as positive and negative statements of 50 statements. The following is a grid of critical thinking skills and learning style questionnaires are presented in Tables 3 and 4 below.

Table 3: Grid of Critical Thinking Ability

No.	Sub Material	Critical Thinking Ability Indicator	No. Item
1.	Hard work	Elementary Clarification	Q1
2.	Persistent	Basic Support	Q2
3.	Persistent	Inference	Q3
4.	Tenacious	Advanced Clarification	Q4
5.	Be careful	Strategy and Tactics	Q5

Table 4: Grid of Learning Style Questionnaire

No.	Types of Learning Style	Statement		Total
		Positive	Negative	
1.	Visual Learning Style	S1, S2, S4, S6, S9	S3, S5, S7, S8, S10, S11, S12, S13, S14	14
2.	Auditorial Learning Style	S15, S17, S18, S19, S20, S22, S23, S25, S27, S28	S16, S21, S24, S26, S29	15
3.	Kinesthetic Learning Style	S30, S31, S33, S34, S37, S38, S39, S40, S43, S44, S45	S32, S35, S36, S41, S42, S46, S47, S48, S49, S50	21
	Total			50

Data Analysis

Under the type of research, the data analysis used in this study is descriptive statistics assisted by the Rash Model. Data analysis consisted of instrument feasibility analysis (validity, reliability, and problem difficulty) and data analysis of critical thinking skills and student learning style questionnaires. Data analysis using Rash Model software with the mathematical equations are

$$P_{ni}\left(x_{ni}=\frac{1}{\beta_n},\delta_i\right)=\frac{e^{(\beta n-\delta_i)}}{1+e^{(\beta n-\delta_i)}}$$

Where $P_{ni}\left(x_{ni}=\frac{1}{\beta_n},\delta_i\right)$ is the probability of the respondent item producing a correct answer (x=1); with the respondent's ability, β_n, and the difficulty level of the article δ_i.

3. Result and Discussion

This study aimed to analyze students' critical thinking skills in terms of gender and learning style in Islamic Religious Education learning using Edmodo E-learning. The research data were obtained through the results of necessary thinking skills tests and filling out learning style questionnaires. Before the learning process is carried out, the feasibility of the critical thinking ability test instrument and learning style questionnaire is tested for feasibility.

Analysis of Critical Thinking Ability Question Instruments

The instrument test for critical thinking skills was carried out on students who had studied the material for commendable behavior, so this trial was conducted in class VIII SMPN 1 Mataram. This trial is known as a field trial which aims to determine the quality of the items (Ibrahim et al., 2020). The instrument indicators are said to be valid, which can be seen from the level of suitability of the things, the detection of biased items, and the reliability of the items (Soeharto & Rosmaiyadi, 2018). The following describes the results of the instrument analysis on critical thinking skills.

Table 5: Item Fit Order

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTMEASUR-AL CORR.	PTMEASUR-AL EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Item
5	74	30	-.29	.20	1.52	1.77	1.66	1.81	A .60	.79	30.0	45.7	Q5
3	88	30	-.95	.23	1.33	1.09	.86	-.24	B .86	.81	56.7	54.1	Q3
1	76	30	-.38	.21	.89	-.32	.79	-.60	C .82	.80	46.7	45.6	Q1
4	40	30	.97	.19	.81	-.70	.78	-.37	b .66	.64	43.3	43.8	Q4
2	49	30	.65	.19	.74	-1.04	.62	-.96	a .77	.69	43.3	44.7	Q2
MEAN	65.4	30.0	.00	.21	1.06	.2	.94	-.1			44.0	46.8	
P.SD	18.0	.0	.71	.02	.31	1.1	.37	1.0			8.5	3.7	

The output table for the suitability of the items above shows that the Outfit Means square value for items Q1 to Q5 is 1.66, respectively; 0.86; 0.79; 0.78; 0.62. The Outfit Z-standard value for items Q1 to Q5 is 1.81, respectively; -0.24; -0.60; -0.37; and -0.96. The table above also shows that the Point measure correlation value for items Q1 to Q5 is 0.60; 0.86; 0.82; 0.66; and 0.77. These values indicate that none of the items together are outside the criteria of the Outfit Means square ($0.5 < mnsq < 1.5$), Outfit Z-standard ($-0.2 < ZSTD < +2.0$), and Point measure correlation($0.4 < Pt\ Measure\ Corr < 0.85$) (Amin & Ikhsan, 2021 & Hagquist & Andrich, 2017).

In addition to analyzing the level of suitability of items, detecting the existence of biased items is also one way to determine the validity of an item. Good items

are items that do not contain bias—in Rash modeling, detecting the existence of items can be called DIF (differential item functioning) detection. The following is the output of DIF detection.

Table 6: DIF Class Specification

Person CLASSES	SUMMARY DIF CHI-SQUARED	D.F.	PROB.	BETWEEN-CLASS/GROUP Item UNWTD MNSQ	ZSTD	Number	Name
4	1.4359	3	.6965	.6093	-.29	1	Q1
4	2.8707	3	.4108	1.3352	.64	2	Q2
4	1.5254	3	.6757	.5649	-.36	3	Q3
4	1.3791	3	.7099	.5629	-.37	4	Q4
4	6.2353	3	.1000	2.9350	1.86	5	Q5

Table 6 above shows that the item probability values for Q1 to Q5 are 0.6965, respectively; 0.4108; 0.6757; 0.7099; and 0.1000. The probability value of the item is above 5% (0.05). This indicates that there are no biased items. One indicator of the measurement of useful items is also the items used are reliable. The following table presents the reliability output of the items.

Table 7: Item Reliability

	TOTAL SCORE	COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	65.4	30.0	.00	.21	1.06	.16	.94	-.07
SEM	9.0	.0	.35	.01	.15	.54	.18	.49
P.SD	18.0	.0	.71	.02	.31	1.08	.37	.97
S.SD	20.1	.0	.79	.02	.35	1.21	.41	1.09
MAX.	88.0	30.0	.97	.23	1.52	1.77	1.66	1.81
MIN.	40.0	30.0	-.95	.19	.74	-1.04	.62	-.96
REAL RMSE	.22	TRUE SD	.67	SEPARATION	2.99	Item	RELIABILITY	.90
MODEL RMSE	.21	TRUE SD	.68	SEPARATION	3.29	Item	RELIABILITY	.92
S.E. OF Item MEAN = .35								

Based on the output table above, it is known that the reliability of the items is 0.90. This indicates that the level of reliability of the things is good.

Analysis of Learning Style Questionnaire Instruments

Three experts validated the learning style questionnaire instrument. The validation of the learning style questionnaire aims to ensure that the questionnaire used is appropriate and following the characteristics of junior high school students. The aspects that the experts validated in the learning style questionnaire consisted of the suitability of the indicators with the statement, the scope of the information, the construction of the word, and the linguistic aspect. The results of the questionnaire validation by experts are presented in the following figure.

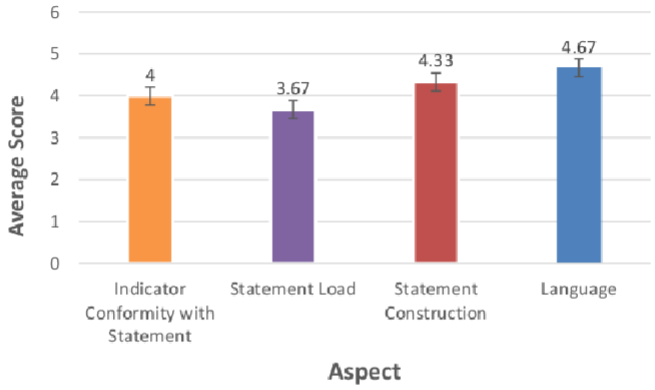


Figure 1: Expert Validation Results on Learning Style Questionnaire

Based on Figure 1 above, it is known that the results of expert validation on student learning style questionnaires are different. The average score of the three experts on the conformity indicator of the learning style indicator with the statement got an average score of 4.00 in the excellent category; the coverage aspect of the statement received an average score of 3.67 from the three experts with a reasonably good category; the statement construction aspect got an average score of 4.33 from the three experts with good criteria, and the linguistic aspect got an average score of 4.67 from the three experts in the good category. This indicates that the developed learning style questionnaire instrument is suitable for this study. The results of this analysis are also in line with the results of research conducted by (Siddiquei & Khalid, 2021), which states that the learning style questionnaire developed is suitable for research.

Description of Data on Gender and Student Learning Style

This study involved 75 Class VII junior high school students in Mataram City. The students are divided into three classes, where one type at SMPN 1 Mataram has 25 students, one class at SMPN 2 Mataram has 27 students, and SMPN 15 Mataram has 23 students. The students were identified in terms of gender and learning style data. The identification data showed that there were 27 male students and 48 female students. Student data by gender is presented in the following figure.

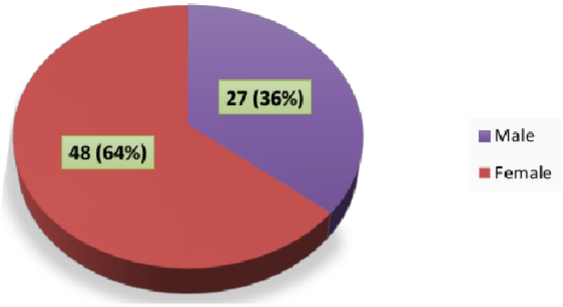


Figure 2: Research Sample Data Based on Gender

Next, the researchers identified the learning styles of each student by giving a questionnaire. The learning style questionnaire uses a Likert Scale with five alternative answers with a vulnerable score of 1-5 per statement item. The questionnaires were distributed evenly to 75 grade VII students of SMPN 1 Mataram, SMPN 2 Mataram, and SMPN 15 Mataram. The results of data analysis related to student learning styles are presented in the following figure.

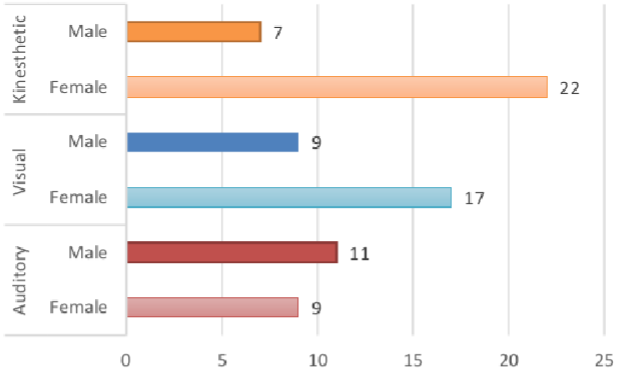


Figure 3: Research Sample Data Based on Learning Style

Figure 3 above shows that students' learning styles are different. There are 20 students whose learning style is Auditory, namely nine female students and 11 male students. Figure 3 also shows 26 students whose learning style is Visual, namely 17 female students and nine male students. The data above also indicates that there are 29 students with kinesthetic learning styles, namely 22 female and seven male students. This analysis follows the results of research conducted by Putra (2017), which states that male students dominate the Auditory learning style compared to female students, but Putra (2017) says that Visual and Kinesthetic learning styles are dominated by male students as well.

Analysis of Students' Critical Thinking Ability

Judging by Gender

Critical thinking skills are abilities that students must possess to analyze and examine related phenomena or problems given (Bahtiar & Ibrahim, 2022; Mahdi et al., 2020 & Alsaleh, 2020). In learning Islamic Religious Education, students must analyze related problems faced in the school environment, family environment, and the general community environment (Mansur et al., 2022). Students must be able to relate phenomena in everyday life to the material presented by the teacher at school. The material of commendable behavior taught by the teacher, which consists of hard work, perseverance, tenacity, and thoroughness, must be mastered and applied by students in everyday life. Students can do this if they have high critical thinking skills. Following are the results of analyzing students' necessary thinking skills after learning to use Edmodo based on E-Learning.

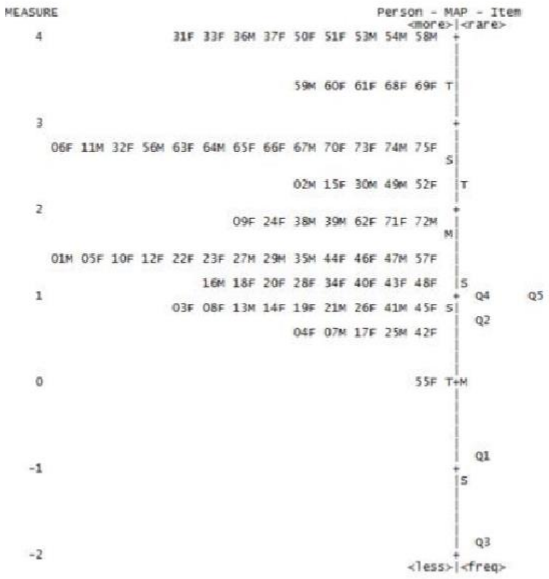


Figure 4: Wright Peta Map

The picture above shows that the data on the left is the ststudent'shinking ability based on gender, while the right is the items (Q1 to Q5). The Wright Map on the left, which describes the ststudent'sbilities shows nine students with the highest critical thinking abilities, namely students with codes 31F, 33F, 36M, 37F, 50F, 51F, 53M, 54M, and 58M. The logit value of these students is the same, namely +4.56. Meanwhile, students with the lowest critical thinking skills are with Code 55F, with a logit value equal to 0.00. In general, the vital thinking ability of both male and female students is above the logit average of 0.00. The Person Item

Map on the right explains the distribution of logit values on the item questions. Question items Q3 are items for the diligent sub-material with the lowest difficulty level (0.00). For more details, data on students' critical thinking skills are also presented in the following figure.

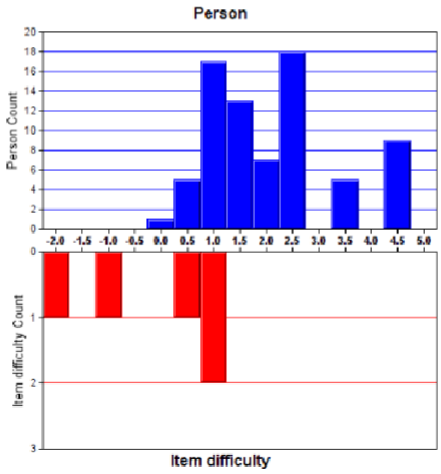


Figure 5: Distribution of Students' Critical Thinking Ability and Level of Problem Difficulty

The logit value of students' critical thinking skills of more than 0.00 indicates that the learning process of Islamic Religious Education using Edmodo E-learning which teachers in learning apply, is successful. Edmodo is a learning platform that is safe to use for teachers, students, and schools based on social media (Alqahtani, 2019). Through Edmodo, teachers and students can share notes and documents and continue online discussions (Manowong, 2016). Through one of the features of Edmodo, teachers can give students assignments and set a deadline for submitting assignments. If new students submit assignments after the deadline, there will be an "expired" sign (Ariani et al., 2017). To find out more clearly the differences in critical thinking abilities in male and female students, the data is presented in the following image.

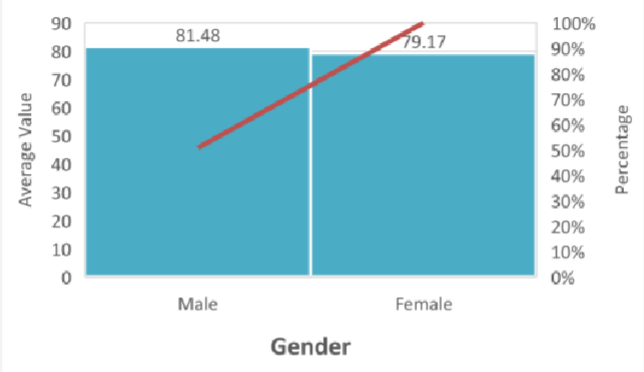


Figure 6: Differences in Students' Critical Thinking Ability

Based on Figure 6 above, it can be seen that the critical thinking skills of male and female students are not much different. The two gender groups obtained almost the same average score, namely 81.48 for male students and 79.17 for female students. The high average value of critical thinking skills acquired by male and female students is due to the activeness of these students in learning using Edmodo e-learning. Both male and female students felt challenged and motivated by the learning that was carried out. The results of this study are in line with research conducted by (Ramdani et al., 2021) which states that male students have a faster response and higher self-confidence than female students in solving critical thinking skills. However, this study contradicts the results of research conducted by (Fuad et al., 2017), which states that female students have higher critical thinking skills than male students. However, this difference is not very significant. Indicators also carry out analysis of necessary thinking skills. This was done to determine the differences in critical thinking skills between male and female students. Here are the results of the analysis.

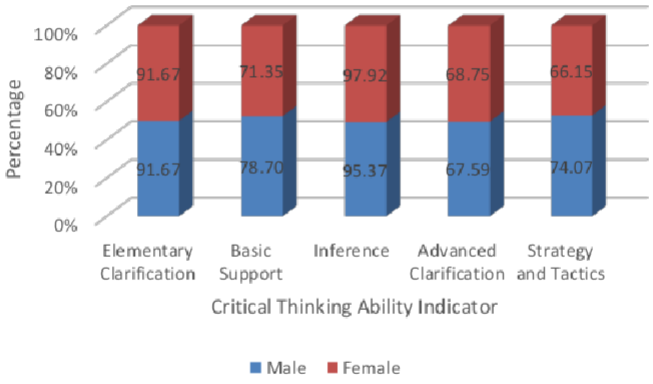


Figure 7: Differences in Critical Thinking Ability of Students Indicators Based on Gender

The picture above shows data on each indicator's critical thinking skills for male and female students. In the Elementary Clarification indicator, the percentage obtained by male and female students is the same, namely 91.67%. This shows that male and female students have the same ability to analyze the arguments given to the sub-material of hard work. The next indicator of critical thinking ability is Basic Support. In this indicator the percentage of scores obtained by male and female students is different. Male students get a higher percentage score than female students, namely 78.70% for male students and 71.35% for female students. This indicates that male students are better at giving reasons to the sub-material diligently than female students. In the Inference indicator, the critical thinking skills of male and female students differ in analyzing questions in the diligent sub-material, namely 95.37% for male students and 97.92% for female students. Female students are better at making inductions and considering the results of installations than male students. In the Advanced Classification indicator, the critical thinking ability of male and female students in the tenacious sub-material is almost the same, namely 67.59% for male students and 68.75% for female students. This can be seen from the percentage value obtained, namely 67.59% for male students and 68.75% for female students. In the Strategy and Tactics indicator, the ability of male students is higher than that of female students. This shows that male students can determine the course of action on a given problem compared to female students regarding the sub-material carefully.

Judging from Learning Style

Learning style is the way that each student uses to understand the material he is studying. The learning styles of students are different. Usually, students' learning styles consist of Auditory, Visual, and Kinesthetic. The results of research conducted by Dilekli (2017) show that learning styles affect students' critical thinking skills. In the following, data analysis results related to students' necessary thinking skills are presented in terms of learning styles in Islamic Religious Education for seventh-grade junior high school students.

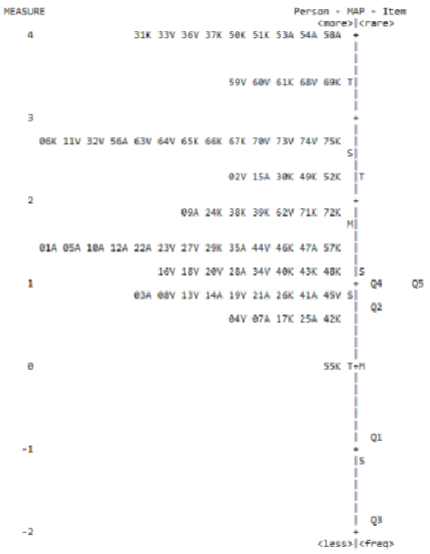
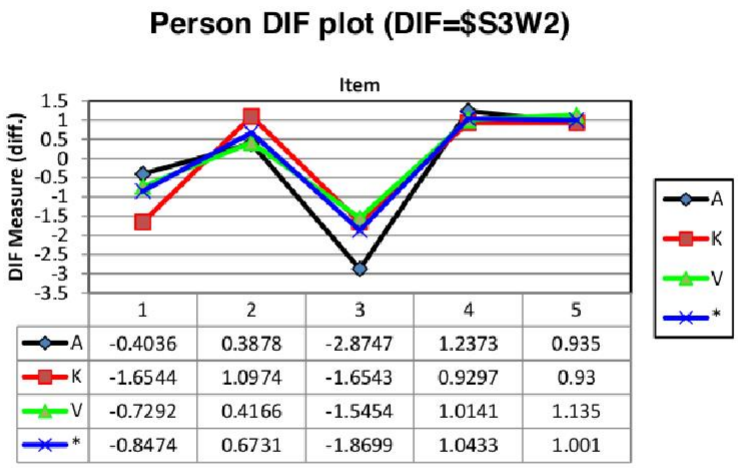


Figure 8: Wright Peta Map

Figure 8 above shows that the data on the left is the student's thinking ability based on learning styles, while the right is the items (Q1 to Q5). In the Wright Map on the left, which describes the students' abilities, there are nine students with the highest critical thinking abilities, namely students with codes 31K, 33V, 36V, 37K, 50K, 51K, 53A, 54A, and 58A. The logit value of these students is the same, namely +4.56. Meanwhile, students who have the lowest critical thinking skills are students with a 55K code, with a logit value equal to 0.00. In general, the necessary thinking skills of both students whose learning styles are Auditory, Visual, and Kinesthetic are above the logit average of 0.00. The Person Item Map on the right explains the distribution of logit values on the item questions. Question items Q3 are items for the diligent sub-material with the lowest difficulty level (0.00). The following is also presented a picture related to the distribution of students' critical thinking skills based on the learning style of each item.



	1	2	3	4	5
A	-0.4036	0.3878	-2.8747	1.2373	0.935
K	-1.6544	1.0974	-1.6543	0.9297	0.93
V	-0.7292	0.4166	-1.5454	1.0141	1.135
*	-0.8474	0.6731	-1.8699	1.0433	1.001

Figure 9: Person DIF Critical Thinking Ability Based on Learning Style

The picture above shows that the most challenging item is the Q3 sub-material diligently. This picture also shows almost no difference in students' critical thinking skills on Q5 items. The questions with the most manageable level of difficulty are Q2 items. In this case, the problem is more easily solved by students whose learning style is kinesthetic, followed by those whose learning style is Auditory. In the following, the differences in students' critical thinking skills are presented based on learning styles.

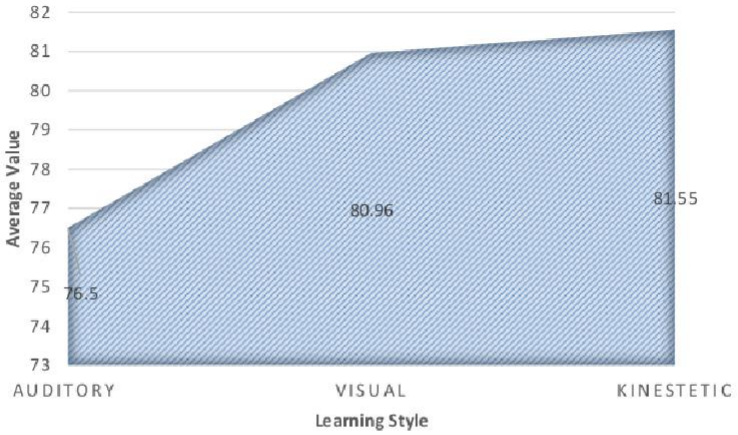


Figure 10: Differences in Critical Thinking Ability in terms of Learning Style

Figure 10 informs students' that critical thinking skills are based on different learning styles. This can be seen from the average value obtained by students

when solving Islamic Religious Education questions on commendable behavior. Students with an Auditory learning style have lower critical thinking skills than those with visual and kinesthetic learning styles. Students with an Auditory learning style get an average score of 76.5, students with a visual learning style get an average score of 80.96, and those with a kinesthetic learning style get an average score of 81.55. The high average score obtained by students with a kinesthetic learning style is due to the learning that is applied using e-learning-based Edmodo. Learning using Edmodo will involve students actively learning to analyze and provide direct arguments for the material being studied.

In contrast to students whose learning style is auditory, who do not look active in providing arguments or analysis of the material being studied. These students are more interested in the teacher who explains directly. This study's results align with research conducted by Hananto & Kusmayadi (2018), which states that the critical thinking ability of students whose learning style is kinesthetic is better than those whose learning styles are visual and audiotrial. However, the results of this study contradict the results of research conducted by Rini et al., (2020), which concluded that there was no effect of Visual, Auditory, and Kinesthetic learning styles on students' critical thinking skills.

6. Conclusion

Based on the description above, it can be concluded that the critical thinking abilities of male and female students are not much different. The two gender groups obtained almost the same average score, namely 81.48 for male students and 79.17 for female students. Students' critical thinking ability in terms of learning styles shows that students with kinesthetic learning styles have better necessary thinking skills than students with visual learning styles. Students with visual learning styles have better critical thinking skills than students with auditory learning styles. This can be seen from the average score obtained by each group is 81.55 for students whose learning style is kinesthetic, 80.96 for students whose learning style is visual, and 76.5 for students whose learning style is auditory.

The impact of this research in the world of education, especially Islamic Religious Education learning, is to provide new knowledge, insight, and information about learning media, especially E-learning-based Edmodo that can be used in learning Islamic Religious Education. Based on the results of this study, it can also be used as a reference for teachers to pay attention to diversity in the division of male and female groups and learning styles. Some of the limitations of this study are that this study only analyzed the instrument questions and learning style questionnaires using limited validation. In addition,

the analysis of ststudent'sritical thinking skills is also still limited to post-test results without involving students' pretest results.

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