Learning Intensity and Visual Learning Style on Learning Outcomes

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A B S T R A K

Kegiatan belajar tidak harus dilakukan dalam waktu yang lama, intensitas belajar yang baik dilakukan secara teratur akan menjadikan kegiatan belajar sebagai suatu kebiasaan. Proses pembelajaran juga perlu didukung dengan gaya belajar yang sesuai dengan karakteristik siswa. Tujuan penelitian ini adalah menganalisis intensitas belajar terhadap hasil belajar, gaya belajar visual terhadap hasil belajar, dan intensitas belajar dan gaya belajar visual terhadap hasil belajar. Jenis penelitian yaitu kuantitatif dengan pendekatan kuantitatif deskriptif. Sampel yang digunakan adalah 65 siswa dengan purposive sampling. Metode pengumpulan data menggunakan angket dan dokumentasi. Instrument yang digunakan yaitu kuesioner. Teknik analisis data yaitu analisis deskriptif kualitatif, kuantitatif, dan statistic inferensial. Hasil penelitian menunjukkan bahwa terdapat pengaruh yang signifikan intensitas belajar terhadap hasil belajar pada mata kuliah teori ekonomi makro. Terdapat pengaruh yang signifikan gaya belajar visual terhadap hasil belajar pada mata kuliah teori ekonomi makro. Terdapat pengaruh yang signifikan antara gaya belajar visual terhadap hasil belajar mata kuliah teori ekonomi makro. Pengaruh intensitas dan gaya visual belajar bersama terhadap hasil belajar mata kuliah teori ekonomi makro. Disimpulkan terdapat pengaruh secara simultan antara intensitas belajar dan gaya belajar visual terhadap hasil belajar pada mata kuliah teori ekonomi makro.

A B S T R A C T

Learning activities do not have to be done for a long time. Good learning intensity is carried out regularly will make learning activities a habit. The learning process also needs to be supported by a learning style that suits the characteristics of students. This study aimed to analyze the intensity of learning-on-learning outcomes, visual learning styles on learning outcomes, and learning intensity and visual learning styles on learning outcomes. This type of research is quantitative with a descriptive quantitative approach. The sample used was 65 students with purposive sampling. Data collection method using questionnaire and documentation. The instrument used is a questionnaire. Data analysis techniques are qualitative descriptive analysis, quantitative, and inferential statistics. The results showed a significant effect of learning intensity on learning outcomes in macroeconomic theory courses. There is a significant effect of visual learning style on learning outcomes in macroeconomic theory courses. There is a significant influence between visual learning styles on learning outcomes of macroeconomic theory courses. There are significant effects of visual learning style on learning outcomes of macroeconomic theory courses. It is concluded that there is a simultaneous influence between learning intensity and visual learning style on learning outcomes in macroeconomic theory courses.

1. INTRODUCTION

Education is a very important process for the development and progress of a nation and state. Education is very important in human life and cannot be separated from life itself (Masus & Fadhilaturrahmi, 2020 ; Wulandari et al., 2020) . Education is a conscious and planned effort to create a learning atmosphere and learning process for students to actively develop the potential of students (Astalini et al., 2018; Fatonah et al., 2020) . Effective education is education that is able to make students learn easily, fun and achieve the expected (Aldila et al., 2021; Asyhari & Silvia, 2016). Quality education is education that involves students actively learning and directs the formation of values that students need in life (Asyhari, 2015; Ware & Rohaeti, 2018).

Education that produces is able to produce an intellectual generation supported by a quality learning system, because education implies learning and teaching activities, where those who teach are educators and those who learn are students, which are oriented to the development of knowledge, attitudes, and skills of students. Learning is a process of modifying a person through experience, a process of interaction and not direct absorption (Suhendri, 2011; Muslim et al., 2021). Learning is a change in behavior

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caused by a process that occurs repeatedly. The existence of a stimulus that is given in the learning process so that it will produce a response in the form of learning outcomes. Learning outcomes are changes in students that can be observed, proven, and measured in abilities. Learning outcomes can describe the abilities that students get after the learning process that they know and learn (Fricticarani & Maksum, 2020; Sumyadi et al., 2020; Suryani & Maksum, 2020).

Learning outcomes are changes in behavior that occur continuously and are not static. Learning outcomes are abilities obtained by individuals after the learning process takes place, which can provide changes in behavior both in knowledge, understanding, attitudes and skills of students so that they become better than before (Ambarsari et al., 2017; Kurniawati et al., 2020; Yundarini et al., 2020). Economic learning outcomes are abilities obtained after going through learning activities. Learning is the process of a person trying to obtain a relatively persistent change in behavior (Hasmidyani, 2016; Pardede, 2021; Rahayu, 2018). In economic learning activities or learning activities, lecturers usually set learning objectives, students who are successful in learning are those who have succeeded in achieving learning or learning objectives. Learning outcomes as changes in student behavior are seen in terms of cognitive, affective and psychomotor after students carry out the learning process (Maison et al., 2018; Yulfianti & Dewi, 2021). Learning outcomes have an important role in the learning process. Learning outcomes can also provide information to teachers about student progress in achieving their learning goals through learning activities. Many factors affect learning outcomes in the classroom, so it is the task of educators to improve student learning outcomes by knowing students' learning styles.

Learning style is a process of behavior, appreciation, and a person's tendency to learn or acquire knowledge in a separate way (Asrul et al., 2018 ; Anggrawan, 2019) . Learning style is also a combination of how a person absorbs and then organizes and processes information. By knowing the students' learning styles, it is expected that teachers can design learning that refers to optimizing student learning styles. There are three kinds of learning style characteristics, namely visual, auditory, and kinesthetic learning styles (Esia-Donkoh, 2020; Ozdemir et al., 2018). Visual learning style is a learning style in which ideas, concepts, data and other information are packaged in the form of images (Agung Rinaldy Malik et al., 2020; Liberna, 2018). Visual learning style is learning through seeing things by seeing so that the eyes play an important role. Visual learning style is done by someone to obtain information such as looking at pictures, diagrams, maps, posters, and graphics. Learning styles of students cannot be formed with just one habituation, habituation of learning styles must be done repeatedly in order to produce habituation in learning styles. Behavior that is repeated over time will get used to it so that it finally happens spontaneously is also known as intensity.

Intensity is a behavior that is repeated all the time and it will get used to it so that it is finally carried out spontaneously without the need for conscious thought as an automatic response to learning situations. It is in line with previous research that state learning intensity is the frequency or amount of student learning in a certain time level to gain maximum experience (Chandrasekera & Yoon, 2018; Dashtaki et al., 2020). In addition to a good learning intensity, the learning process also needs to be supported by a learning style that is in accordance with the characteristics of students (Andrietti, 2015; Kirichenko & Van Zanten, 2015). It is also reinforced by previous researches that studying about relation of learning intensity and learning objective. The result of study state that learning intensity of students will determine the level of achievement of learning objectives, namely the level of learning outcomes (Leite et al., 2020; Lu & Wu, 2020). In addition the intensity of students' learning will greatly determine the level of achievement of their learning objectives, namely increasing their achievements.

Based on these problems, it is known that learning activities do not have to be carried out for a long time, good learning intensity is carried out regularly and will make learning activities a habit. In addition to a good learning intensity, the learning process also needs to be supported by a learning style that is in accordance with the characteristics of students. The purpose of this study is to analyze whether there is an influence between learning intensity on learning outcomes, visual learning styles on learning outcomes, and learning intensity and visual learning styles on learning outcomes.

2. METHODS

The method used in this study is a quantitative method. With a descriptive quantitative approach, the aim is to provide a description or description of the phenomena or social phenomena studied by describing the variables used. In addition, the researcher also uses a regression approach whose purpose is to determine whether there is an influence between the independent and related variables. The research was conducted at Jambi University. The populations of this study were all students of economic education at Jambi University, the sample used in this study was selected using purposive sampling using moderate conditions or having contracted economic theory courses. So that in this study the sample used was 65

students. The data used in this study are the learning outcomes obtained by the 2018 class of economic education students who contracted macroeconomic theory courses. In addition, researchers also distributed questionnaires to measure the intensity of learning and students' visual learning styles. The grid of questionnaires and questionnaires in this study can be seen in Table 1. From each number of indicators used in this study, by using a Liker scale, the range for each research variable is show in Table 2.

Table 1. Lattice of Questionnaires and Research Questionnaires

Variable	Indicator	No items
Learning Intensity	Duration Activity	1, 2, 3
	Activity Frequency	4, 5, 6, 7
	Presentation	8, 9, 10, 11
	Direction Attitude	12, 13, 14
Amount		**14**
Style Study Visual	Study with Method Visual	1, 2, 3
	Understand Good Regarding Position, Shape, Number and Color	4, 5, 6
	Neat and Regular	7, 8, 9
	Not Disturbed with Commotion	10, 11, 12
	Hard To Accept Instructions Verbal	13
Amount		**13**
Student Learning Outcomes	Mark student education economy force 2018 which hascontract theory course macro economics	

Table 2. Range of Categories of Learning Intensity, Visual Learning Style, and Student Learning Outcomes

Variable	Range	Category
Learning Intensity	14.00-24.50	Very good
	24.51-35.00	Good
	35.01-45.50	Not good
	45.51-56.00	Not very good
Visual Learning Style	13.00-22.75	Very good
	22.76-32.50	Good
	32.51-42.25	Not good
	42.26-52.00	Not very good
Student Learning Outcomes	10.00-17.50	Very good
	17.51-25.00	Good
	25.01-32.50	Not good
	32.51-40.00	Not very good

The data analysis technique used in this study is descriptive statistics. Descriptive statistics are used to describe or provide information on conditions or problems using data (Nasution, 2017). In the descriptive analysis, the mean, median, mode, and standard deviation values are presented (George & Mallery, 2019; Goos & Maintrup, 2015). The mean is the total score of the frequency distribution divided by the number of data (Budiwanto, 2017). The median is a number that lies in the middle of a frequency distribution (Mendenhall & Sincich, 2016). The mode can be used to analyze the phenomenon that occurs the most or is used the most. The basis for calculating the standard deviation is the desire to know the diversity of a data group (Mendenhall & Sincich, 2016) . Hypothesis testing in this study uses t-test for hypotheses 1 and 2. While the F test for hypothesis 3. The coefficient of determination test is used to see the amount of influence of the independent variable affecting the dependent variable in the form of percent (%). The data collection procedure in this study began with the initial activity, namely providing questionnaires and questionnaires to determine the intensity of learning, learning styles, and to obtain data on student learning outcomes obtained from the value of micro-economic learning outcomes. After filling out the questionnaire, the researchers analyzed the data using SPSS 26.

3. RESULT AND DISCUSSION
Results

Multicultural education is in accordance with the goals and principles of national education. The purpose of national education is to develop the potential of students to become human beings who believe

and fear God Almighty, noble, healthy, knowledgeable, capable, creative, independent, and become a democratic and responsible citizen. Through multicultural education, children will get used to the plurality that exists, so that later when they enter the community they can become agents of change to create a harmonious and peaceful social life. The paradigms of multicultural education, namely providing full education for everyone (education for all) without dividing the background of students, whether gender, ethnicity, religion, culture, and ethnicity (Arifin, 2013). To realize multicultural education in learning, teachers in schools must have an understanding of multicultural education.

From the results of interviews with Teacher F and teacher D, it shows that both of them have knowledge about the concept of multicultural education. Multicultural education according to Teacher F is a concept that learns about the diversity possessed by every human being which should exist in every subject and should have been applied from the start. It's just that sometimes the teacher applies it without realizing that it is a multicultural concept. Furthermore, Teacher F said that currently the concept of multicultural education has been included in the learning plan. Teacher F's statement is in line with previous study that state about multicultural education is the interaction between those who study with elements and realities of foreign cultures, in other words, as a reflection of the ideals of cultural pluralism in education (Najmina, 2018; Sultanova, 2016). Regarding the concept of the value of multicultural education, teacher D has its own concept, which is something broad and diverse but must be in the shade of diversity among togetherness. Teacher D's understanding of the value of the concept of multicultural education is in accordance with the dimensions of the concept of multicultural education. Teacher H is able to explain what value concepts are contained in multicultural education so that it can be implemented in everyday life, while teacher D refers to what events inspire multiculturalism in society. In other words, Teacher D uses the problems that occur to raise the value of multicultural education. In addition to teacher understanding, students' understanding of the concept of multicultural education also deserves attention so that interviews conducted with students initially find out how far students understand multiculturalism. The results of the interviews conducted showed that the students interviewed had understood the basic concept of multiculturalism, namely students' perceptions of the value of multicultural education not only about differences in religion, language, ethnicity and race but also related to tolerance and mutual respect for fellow human beings.

The results of the research conducted also show the practice of multicultural education carried out by teachers and students. The teacher tries to introduce diverse Indonesian culture in every history lesson as well as in his assignments. Through the practice of multicultural education, it is hoped that the younger generation will be able to be tolerant, respectful, respectful, fair, non-discriminatory, and humanist (Awaru, 2017). It can also be interpreted that multicultural education must be able to develop awareness in students, teachers and also the community to respect each other's cultures that develop in society and eliminate efforts to carry out cultural uniformity in various fields so that the ideals of a tolerant life will be achieved (Cherng & Davis, 2019). Therefore, the main goal of multicultural education is to provide equal and equal rights in education to all students from various racial groups, social classes, ethnic groups and cultural groups. Through multicultural education, students are expected to be able to work together, build harmonious interactions and cooperate with people who are different from themselves so that people who are aware of diversity will be created (Gay, 2013).

This initial goal is very important because it is hoped that multicultural education will not only become a discourse but can be applied in the world of Indonesian education. When people who are directly involved in educational practice already have multicultural awareness, they hope to become agents of change, they not only equip students with subject matter, but can also instill pluralism, humanism, and democracy. the values that exist in students (Janakiraman & Watson, 2019). Meanwhile, the ultimate goal of multicultural education is so that students are not only able to understand and master the subject matter but are also expected to have strong characters to always prepare themselves for a democratic, pluralist and humanist society. (Yaqin, 2005). From the explanation above, the common thread shows that the purpose of multicultural education is to provide equal opportunities to students with different backgrounds to get an education. In addition, the purpose of multicultural education is so that students not only get lessons from teachers but also character values that are humanist, pluralist, motivated so that later they can become agents of change to create a harmonious social life.

Based on the scores obtained from students who contracted macroeconomic theory courses, it can be analyzed that for the Learning Outcome variable (Y) the minimum and maximum scores are obtained. The value of the learning outcomes variable can be seen in Table 3.

Based on the Table 3, it can be seen that in the Learning Outcome variable data (Y) the average value (mean) from a set of data is 74.0847. The median quantity is 74.3750 which means the middle value in the data set that has been obtained. While sum of the data above are 4593.25. It can also be seen that 15 students have excellent learning outcomes and 22 students are in good category. The variance of the data

above is 21.002, with a skewness value of -0.213 meaning that the shape of the data distribution curve is skewed/sloping to the left, while the kurtosis value of - 0.369 means that the height of the data distribution curve is slightly flattened/even. The histogram of Learning Outcomes is show in Figure 1.

Table 3. Description of Student Learning Outcomes

Category	F	%	Mean	Median	Min	Max
Very good	15	24.2				
Well	22	35.5	74.0847	74.3750	63,00	83,00
Not good	19	30.6				
Not very good	6	9.7				
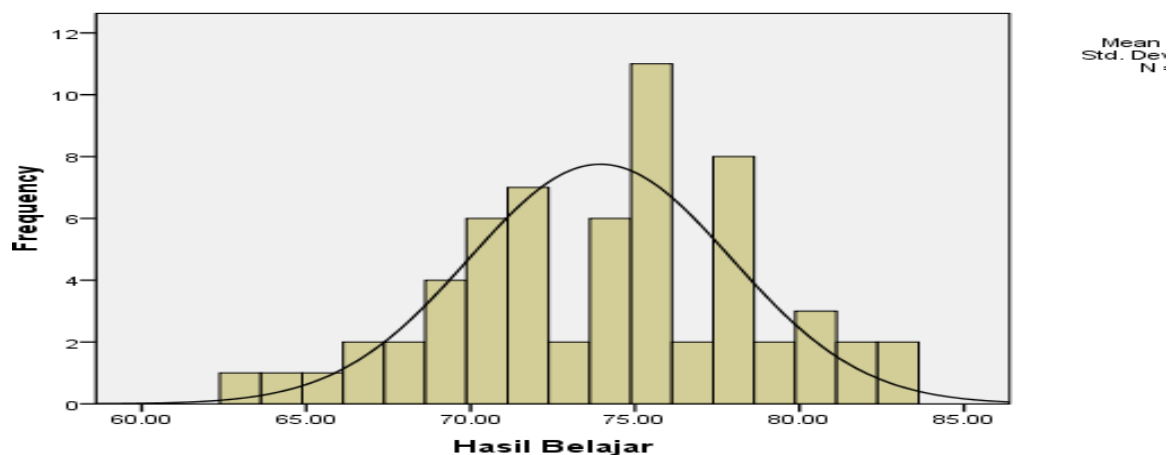
Figure 1. Histogram of Learning Outcomes

Base on Figure 1 the Learning Outcomes variable shows that the histogram has a slightly skewed distribution to the left of the normal distribution because the skewness value is negative, and the shape is horizontal because the kurtosis value is negative. Based on the results of respondents' answers, it can be analyzed that for the learning intensity variable (X1), the results of descriptive statistical calculations using the SPSS release 22.0 program, as presented in Table 4.

Table 4. Description of Learning Intensity

Category	F	%	Mean	Median	Min	Max
Very Good	24	16.1				
Well	10	38.7	41.6935	42.0000	31,00	52,00
Not Good	21	33.9				
Not Very Good	7	11.3				

Base on Table 4 it can be analyzed that for the learning intensity variable (X1), the minimum and maximum scores are obtained. The minimum score is 31 while the maximum score is 52. With an average value (mean) from a data set of 41.6935. The median quantity is 42, which means the middle value in the data set that has been obtained. The data also explains that the intensity of student learning is included in the good category, because as many as 24 students in the very good category and 10 students in the good category. The skewness value of -0.020 means that the shape of the data distribution curve is skewed to the left, while for the kurtosis value of -0.132 it means that the height of the data distribution curve is slightly flattened/even. As for the kurtosis value in the data distribution curve, the peak shape is rather flat/even. For histogram Learning intensity is show in Figure 2.
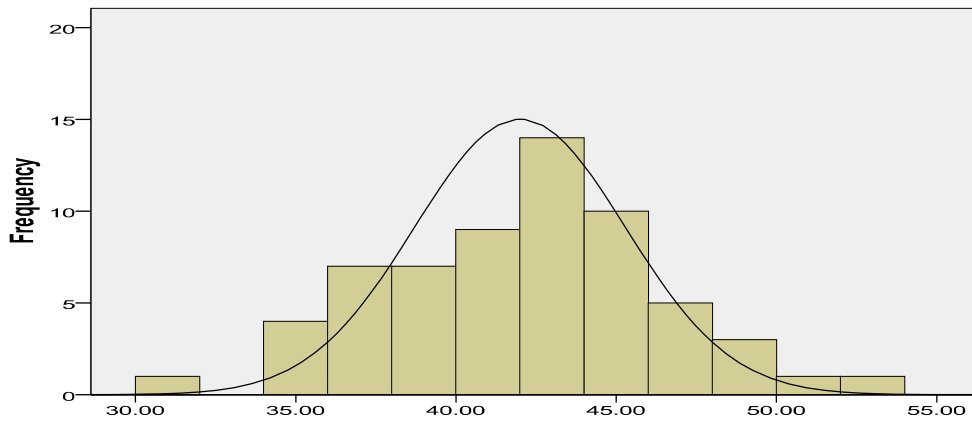
Figure 2. Histogram Learning intensity

Base on Figure 2 the learning intensity variable shows that the histogram has a slightly skewed distribution to the left of the normal distribution because the skewness value is negative, and the shape is horizontal because the kurtosis value is negative. Based on the results of the respondents' answers, it can be analyzed that for the Visual Learning Style variable (X2), the minimum and maximum scores are obtained. as presented in Table 5.

Table 5. Description of Visual Learning Style

Category	F	%	Mean	Median	Min	Max
Very Good	2	8.1				
Well	28	45.2	41.6290	42.0000	32,00	51,00
Not Good	24	38.7				
Not Very Good	5	8.1				

Based on the Table 5, it can be seen that in the Visual Learning Style variable data (X2), the average value (mean) from a data set is 41.6290. The median quantity is 42, which means the middle value in the data set that has been obtained. minimum and maximum scores are obtained. The minimum score is 32 while the maximum score is 51. Students' learning styles are obtained by 2 students in the very good category and 28 students in the good category. the skewness value of -0.051 means that the shape of the data distribution curve is skewed to the left, while the kurtosis value of 0.152 means that it is a positive value, so the data distribution is tapered. Then the shape of the data distribution curve is skewed to the left like the curve as show in Figure 3.
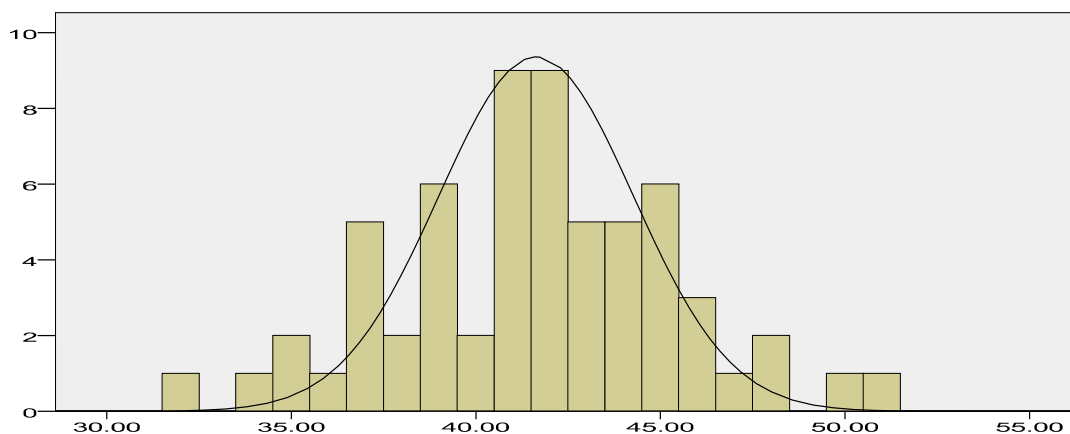

Figure 3. Histogram Visual learning style

Base on Figure 3 the Visual Learning Style variable shows that the histogram has a slightly skewed distribution to the left of the normal distribution because the skewness value is negative, and the shape is tapered because the kurtosis value is positive. After describing the three variables in this study, further tests were carried out, namely the simple regression analysis test. In order to be able to test through

multiple regression analysis, the data is tested first with several analysis prerequisite tests, namely: Normality Test, and Linearity Test. As for the normality test result is show in Table 6.

Table 6. Normality Test

	Kolmogorov-Smirnov[a]
	Sig.
Learning Outcomes	0.966
Learning Intensity	0.803
Visual Learning Style	0.419

Based on the Table 6, it can be seen that the resulting significance value (Asymp.sig.= 0.803) is greater than the alpha value (a = 0.05). Thus, it can be concluded that the data from the learning intensity variable is normally distributed. it can be seen that the resulting significance value (Asymp.sig. = 0.419) is greater than the alpha value (a = 0.05). So, it can be concluded that the data from the Visual Learning Style variable is normally distributed. It can be seen that the resulting significance value (Asymp.sig. = 0.966) is greater than the alpha value (a = 0.05). Thus, it can be concluded that the data from the learning outcomes variables are normally distributed. After all the variables studied are normally distributed, then proceed with conducting the next prerequisite test, namely the linearity test. The result of linearity test is show in Table 7.

Table 7. Linearity Test Learning Outcomes-Learning Intensity

			Sum of Squares	Df	Mean Square	F	Sig.
Learning Outcomes * Learning Intensity	Between Groups	(Combined)	559.629	17	32.919	2.008	0.032
		Linearity	340.084	1	340.084	20.740	0.000
		Deviation from Linearity	219.545	16	13.722	0.837	0.639
	Within Groups		721.489	44	16.397		
	Total		1281.118	61			

Based on the Table 7, it is known that the significance value for Deviation from linearity is 0.639. This means that the probability is greater than 0.05, namely 0.639 > 0.05. So it can be concluded that the relationship between the variables of Learning Intensity (X1) and Learning Outcomes (Y) has a linear relationship.

Table 8. Linearity Test of Learning Outcomes-Visual Learning Style

			Sum of Squares	Df	Mean Square	F	Sig.
Learning Outcomes * Visual Learning Style	Between Groups	(Combined)	822.731	17	48.396	4.645	.000
		Linearity	572.187	1	572.187	54.924	.000
		Deviation from Linearity	250.544	16	15.659	1.503	.142
	Within Groups		458.387	44	10.418		
	Total		1281.118	61			

Based on Table 8, it is known that the significance value for Deviation from linearity is 0.142. This means that the probability is greater than 0.05, namely 0.142 > 0.05. So it can be concluded that the relationship between Visual Learning Style (X2) and Learning Outcomes (Y) has a linear relationship.

The following analysis is the result of the analysis to test the first hypothesis proposed earlier. The hypothesis proposed in this study is that there is a significant effect of learning intensity on learning outcomes in macroeconomic theory courses and there is no significant effect of learning intensity on learning outcomes in macroeconomic theory courses. The results of the analysis can be seen in the Table 9.

Table 9. Learning Intensity Regression Test – Learning Outcomes

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std.Error	Beta		
1	(Constant)	51.384	4.901	0.515	10.484	0.000
	Learning Intensity	0.544	0.117		4.657	0.000

Based on Table 9, it can be seen that the value of the learning intensity variable regression coefficient (X1) is 0.515, which is positive at 0.000 sig, which is smaller than 0.05, which is 0.000 <0.05. So it can be interpreted that the intensity of learning has a positive effect on learning outcomes. This shows that with every increase in Learning Intensity, there will be an increase in Student Learning Outcomes in macroeconomic theory courses of 0.515. The following analysis is the result of the analysis to test the second hypothesis proposed earlier. The hypothesis proposed in this study is that there is a significant effect of Visual Learning Style on learning outcomes in macroeconomic theory courses and there is no significant effect of Visual Learning Styles on learning outcomes in macroeconomic theory courses. The results of the analysis can be seen in Table 10.

Table 10. Learning Style Regression Test – Learning Outcomes

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std.Error	Beta		
1	(Constant)	40.639	4.826	0.668	8.421	0.000
	Visual Learning Style	0.803	0.115		6.959	0.000

Based on Table 10, it can be seen that the value of the Regression Coefficient of the Visual Learning Style variable (X2) is 0.668, which is positive at sig 0.000, which is smaller than 0.05, which is 0.000 <0.05. So it can be interpreted that Visual Learning Style has a positive effect on Learning Outcomes. This shows that with each addition of the Visual Learning Style, there will be an increase in Student Learning Outcomes in macroeconomic theory courses of 0.668. The percentage of influence of all independent variables on the dependent variable is indicated by the magnitude of the Coefficient of Determination (R^2). The coefficient of determination (R^2) shows how much influence the independent variable has on the dependent or dependent variable expressed in percent (%). When viewed from the R-Square (R^2) value of 0.510, means 51%. This shows that the model's ability to predict the effect of learning intensity and visual learning style on student learning outcomes for the 2018 economic education study program in macroeconomic theory courses is 51%. So that the remaining 49% is influenced by other variables that are not explained in this study.

Discussion

Descriptive analysis provides an overview or description of the data collected in the study. The results obtained by this study regarding the description of student learning outcomes in microeconomics courses are said to be good because it can be seen through the percentage that 15 students get marks in the very good category and 22 students get scores in the good category. Based on the results of the data description of the Learning Intensity variable, it can be seen that the Learning Intensity of the 2018 Economics Education students who contracted the Macroeconomic Theory course was included in the High category. This shows that the influence of Learning Intensity plays an important role in the Learning Outcomes obtained by the 2018 class of economic education students who contracted the Macroeconomic Theory course. Intensity is behavior that is repeated all the time will get used to it so that it is finally carried out spontaneously without the need for conscious thought as an automatic response to learning situations. In the act of learning, these changes always increase and are aimed at getting something better than before (Djamarah & Zain, 2006). Thus, if learning activities are carried out frequently, the more and the better the changes obtained. The results of the data description of the Visual Learning Style variable, it can be seen that the Visual Learning Style of 2018 Economics Education students who contracted the Macroeconomic Theory course is included in the High category. Learning style is a combination of the way students absorb, organize, and process information (Wulandari et al., 2021).

The results of the hypothesis testing carried out obtained the Fcount value of 30,732. and at df1 = k -1 = 3 – 1 = 2, df2 = n – k = 62 – 2 = 60 it is known that Ftable is 3.15 so it can be seen that Fcount > Ftable or 30,732 > 3.015 then Ho is rejected and Ha is accepted. So it can be concluded that there is a positive and

significant influence between learning intensity (X1) and visual learning style (X2) on learning outcomes (Y) of 2018 students who contract macroeconomic theory courses. While the results of testing the coefficient of determination simultaneously show that the coefficient of determination (R2) is 0.510, which means 51%. So it can be concluded that 51% of the 2018 Economic Education Student Learning Outcomes who contracted Macroeconomic Theory courses are influenced by Learning Intensity and Visual Learning Styles. While the remaining 49% is the contribution of other variables not examined by researchers.

In line with previous study that found the influence of learning intensity and learning style on student achievement can be seen from the R Square value in table 4.20, the R Square value is 0.187, meaning 18.7% (Jannah et al., 2019). The meaning of this figure is that the intensity of learning and learning styles on student achievement is 18.7% and 81.3% is influenced by other variables. The results of this study are also in line with, which explains that the factors that influence learning outcomes include factors that come from within students or internal factors and factors that come from outside or external factors. Internal factors include physical factors and psychological factors. And external factors. So that the intensity of learning and visual learning styles are included in internal factors in the form of psychic and external factors, namely how students receive and absorb learning.

Other researcher conduct study which aims to determine whether or not there is a direct or indirect influence between the intensity of smartphone use and the use of the internet as a learning resource on learning motivation and learning outcomes in economic subjects (Andrietti, 2015). In this study it is clear to see the influence of learning intensity and Visual Learning Style on Learning Outcomes. It was found that there was a relationship between the intensity of student learning and student learning outcomes. So that in this study the researchers added one research variable, namely the intensity of student learning.

The implications of this research for educators, especially lecturers. variable learning outcomes, learning intensity, and learning style itself can help lecturers in preparing designs in the classroom. Including lesson plan which contains instructions and stages in teaching from the beginning to the end of learning (Saidi & Siew, 2019) . For teachers themselves, research on the influence of learning outcomes, learning intensity, and learning styles like this is very useful in improving the quality of a teacher in mastering the material and sharing knowledge with the students he teaches so that they can become professional teachers in their fields (Lewis & Holloway, 2019; Nafi'ah et al., 2019).

This study has several limitations, namely the variables used are only three, namely learning outcomes, learning intensity, and learning styles. This variable can be changed and added if there are further researchers who wish to conduct similar research. In addition, in terms of population, only one university was used, so the data did not vary too much. The data used for further research can be added to several more universities so that not only can the effect be seen but also can see the difference. Further researchers can also develop this research not only to determine the effect but can be developed to be able to find out other things such as the relationship between the variables used.

4. CONCLUSION

Based on the results of the research and discussion that have been described previously, it can be concluded that there is an effect of learning intensity on learning outcomes in macroeconomic theory courses. This means that learning outcomes in macroeconomic theory courses are caused by the high intensity of learning. So that it can be interpreted that the higher the intensity of learning, the higher the learning outcomes in macroeconomic theory courses. Then, there is an influence of visual learning style on learning outcomes in macroeconomic theory courses. This means that learning outcomes in macroeconomic theory courses are caused by the use of visual learning styles. Thus, the more often students use visual learning styles, it will result in an increase in learning outcomes. And last one there is a simultaneous influence between learning intensity and visual learning style on learning outcomes in macroeconomic theory courses. The effect of learning intensity and visual learning style on learning outcomes in macroeconomic theory courses is 51% and the remaining 49% is influenced by other variables not explained in this study.

5. ACKNOWLEDGEMENT

6. REFERENCES

Agung Rinaldy Malik, Emzir, & Sri Sumarni. (2020). Pengaruh Strategi Pembelajaran Mobile Learning Dan Gaya Belajar Visual Terhadap Penguasaan Kosakatabahasa Jerman Siswa Sma Negeri 1 Maros. *Visipena Journal*, *11*(1), 194–207. https://doi.org/10.46244/visipena.v11i1.1090.

Aldila, F. T., Wirayuda, R. P., Wulandari, M., & Ningsi, A. P. (2021). Deskripsi Keterampilan Proses Sains Siswa Kesetimbangan Pada Tali. *Jurnal Pendidikan Fisika*, *9*(2), 112–119. https://doi.org/10.22611/jpf.v9i2.21494.

Ambarsari, P., Bharati, D. A. L., & Ani Rusilowati. (2017). Pengembangan instrumen Penilaian Unjuk Kerja pada Reading Aloud Text Recount Siswa SMP pada kurikulum 2013. *Jurnal of Educational and Evaluation*, *6*(1), 10–18. https://doi.org/10.15294/jrer.v6i1.16203.

Andrietti, V. (2015). The Causal Effects of Increased Learning Intensity on Student Achievement: Evidence from a Natural Experiment. *SSRN Electronic Journal*, *June*. https://doi.org/10.2139/ssrn.2632002

Anggrawan, A. (2019). Analisis Deskriptif Hasil Belajar Pembelajaran Tatap Muka dan Pembelajaran Online Menurut Gaya Belajar Mahasiswa. *MATRIK : Jurnal Manajemen, Teknik Informatika Dan Rekayasa Komputer*, *18*(2), 339–346. https://doi.org/10.30812/matrik.v18i2.411.

Asrul, Ridlo, S., & Susilo. (2018). Creative Thinking Analysis, Motivation and Concept Mastery on Learning of Cooperative Discovery Model in Elementary School. *Journal of Primary Education*, *07*(1), 48–56. https://journal.unnes.ac.id/sju/index.php/jpe/article/view/21736.

Astalini, A., Kurniawan, D. A., & Sumaryanti, S. (2018). Sikap Siswa Terhadap Pelajaran Fisika di SMAN Kabupaten Batanghari. *JIPF (Jurnal Ilmu Pendidikan Fisika)*, *3*(2), 59–64. https://doi.org/10.26737/jipf.v3i2.694.

Asyhari, A. (2015). Profil Peningkatan Kemampuan Literasi Sains Siswa Melalui Pembelajaran Saintifik. *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, *4*(2), 179–191. https://doi.org/10.24042/jpifalbiruni.v4i2.91.

Asyhari, A., & Silvia, H. (2016). Pengembangan Media Pembelajaran Berupa Buletin dalam Bentuk Buku Saku untuk Pembelajran IPA Terpadu. *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, *5*(1), 1–13. https://doi.org/10.24042/jpifalbiruni.v5i1.100.

Budiwanto. (2017). *Mertode Penelitian Dalam Keolahragaan*. universitas Negeri malang.

Chandrasekera, T., & Yoon, S.-Y. (2018). The Effect of Augmented and Virtual Reality Interfaces in the Creative Design Process. *International Journal of Virtual and Augmented Reality*, *2*(1), 1–13. https://doi.org/10.4018/ijvar.2018010101.

Dashtaki, D. G. M., Mohammadi, A., Zolfaghari, M., Imani, S., & Tahmasebian, S. (2020). The Relationship of Satisfaction and Usage of Virtual Learning Facilities with Learning Style in Medical, Health, and Operating Room Students. *The Strides in Development of Medical Education Journal*, *17*(1), 1–5. https://doi.org/doi:10.22062/SDME.2020.91007.

Djamarah, S. B., & Zain, A. (2006). *Stategi Belajar Mengajar*. Rimeka Cipta.

Esia-Donkoh, K. (2020). Students' Personal Characteristics and Differences in Their Learning Style Preferences in Public Colleges of Education in the Central-Western Zone of Ghana. *PEOPLE: International Journal of Social Sciences*, *5*(1), 592–608. https://doi.org/10.20319/pijss.2019.51.592608.

Fatonah, U., Wirayuda, R. P., Wibisono, G., Analisis, S., & Kelas, M. B. (2020). Analisis Minat Belajar Kelas Xi Sma Negeri 1 Sungai Penuh Pada Pembelajaran Fisika. *Jurnal Sains Dan Pendidikan Fisika (JSPF) Jilid*, *16*(02), 2548–6373. https://doi.org/10.35580/jspf.v16i2.15511.

Fricticarani, A., & Maksum, H. (2020). Improving Student Activity and Learning Outcomes by Applying the Jigsaw Type Learning Model in PPHP Skills Study. *Journal of Education Research and Evaluation*, *4*(4), 296. https://doi.org/10.23887/jere.v4i4.30240.

George, D., & Mallery, P. (2019). *IBM SPSS Statistics 26 Step by Step*. Routledge.

Goos, P., & Maintrup, S. (2015). *Statistics with JMP: Hypothesis Tests, ANOVA and Regression*. fraktur book fair.

Hasmidyani, D. (2016). Pendekatan Scaffolding Sebagai Upaya Meningkatkan Aktivitas Dan Hasil Belajar Mahasiswa. *Jurnal Profit*, *3*(1), 87–100. https://doi.org/10.36706/jp.v3i1.5558.

Jannah, M. M., Supriadi, N., & Suri, F. I. (2019). Efektivitas Model Pembelajaran Visualization Auditory Kinesthetic (Vak) Terhadap Pemahaman Konsep Matematis Berdasarkan Klasifikasi Self-Efficacy Sedang Dan Rendah. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *8*(1), 215–224. https://doi.org/10.24127/ajpm.v8i1.1892.

Kirichenko, A., & Van Zanten, H. (2015). Optimality of poisson processes intensity learning with Gaussian processes. *Journal of Machine Learning Research*, *16*, 2909–2919. https://www.jmlr.org/papers/volume16/kirichenko15a/kirichenko15a.pdf.

Kurniawati, D., Taufiq, M., Kasiyun, S., & Naufi'ah, N. (2020). Meta-Analysis of Teams Games Tournament Learning Model with Spinning Wheel Media-Based on Local Wisdom Toward Students' Learning Outcomes. *Journal of Education Research and Evaluation*, *4*(3), 296. https://doi.org/10.23887/jere.v4i3.28183.

Leite, E. A. M., Lencastre, J. A., Silva, B. D., & Neto, H. B. (2020). Learning style in a virtual environment: a study with elementary school teachers at in- service training. *Angewandte Chemie International Edition, 6(11), 951–952.*, *9*(7), 1–27. https://doi.org/https://doi.org/10.33448/rsd-v9i7.3790.

Lewis, S., & Holloway, J. (2019). Datafying the teaching 'profession': remaking the professional teacher in the image of data. *Cambridge Journal of Education*, *49*(1), 35–51. https://doi.org/10.1080/0305764X.2018.1441373.

Liberna, H. (2018). Hubungan Gaya Belajar Visual dan Kecemasan Diri Terhadap Pemahaman Konsep Matematika Siswa Kelas X SMK Negeri 41 Jakarta. *JNPM (Jurnal Nasional Pendidikan Matematika)*, *2*(1), 98. https://doi.org/10.33603/jnpm.v2i1.988.

Lu, L., & Wu, Y. (2020). Does religion enhance firm performance? Evidence from private firms in China. *China Economic Review*, *62*, 101480. https://doi.org/10.1016/j.chieco.2020.101480.

Maison, Astalini, Kurniawan, D. A., & Sholihah, L. R. (2018). Deskripsi Sikap Siswa Sma Negeri Pada Mata Pelajaran Fisika. *Jurnal Eduasains*, *10*(1), 160–167. https://doi.org/10.15408/es.v10i1.7214.

Masus, S. B., & Fadhilaturrahmi, F. (2020). Peningkatan Keterampilan Proses Sains IPA dengan Menggunakan Metode Ekperimen Di Sekolah Dasar Soni. *Jurnal Pendidikan Dan Konseling*, *2*(2), 161–167. https://doi.org/https://doi.org/10.31004/jpdk.v2i1.1129.

Mendenhall, W. M., & Sincich, T. L. (2016). Statistics for engineering and the sciences, sixth edition. In *Statistics for Engineering and the Sciences, Sixth Edition*. https://doi.org/10.1080/00224065.2016.11918168.

Muslim, F., Refnida, R., Chen, D., & Wirayuda, R. P. (2021). Macroeconomic Digital Book Development: How are the Feasibility of Experts and Student Responses? *Journal of Education Technology*, *5*(3), 501–510. https://doi.org/10.23887/jet.v5i3.38280.

Nafi'ah, U., Mashuri, & Wijaya, D. N. (2019). The development of digital book of European history to shape the students' democratic values. *International Journal of Emerging Technologies in Learning*, *14*(6), 147–154. https://doi.org/10.3991/ijet.v14i06.9760.

Nasution, L. M. (2017). Statistik Deskriptif. *Jurnal Hikmah*, *14*(1), 49–55. http://e-jurnal.staisumatera-medan.ac.id/index.php/hikmah/article/view/16.

Ozdemir, A., Alaybeyoglu, A., Mulayim, N., & Uysal, M. (2018). An intelligent system for determining learning style. *International Journal of Research in Education and Science*, *4*(1), 208–214. https://doi.org/10.21890/ijres.383140.

Pardede, S. S. P. (2021). Pengaruh penggunaan metode tanya jawab terhadap hasil belajar ekonomi pada materi pengangguran di kelas xi sma negeri 1 siabu. *Jurnal Misi*, *4*(2), 112–121. http://journal.ipts.ac.id/index.php/MISI/article/view/624.

Rahayu, N. S. (2018). Perbandingan Hasil Belajar Matakuliah Pengantar Ekonomi Mikro Pada Mahasiswa Lulusan Program IPA dan IPS. *JPEKA: Jurnal Pendidikan Ekonomi, Manajemen Dan Keuangan*, *2*(1), 49. https://doi.org/10.26740/jpeka.v2n1.p49-56.

Saidi, S. S., & Siew, N. M. (2019). Assessing Students' Understanding of the Measures of Central Tendency and Attitude towards Statistics in Rural Secondary Schools. *International Electronic Journal of Mathematics Education*, *14*(1), 73–86. https://doi.org/10.12973/iejme/3968.

Suhendri, H. (2011). Pengaruh Kecerdasan Matematis–Logis dan Kemandirian Belajar terhadap Hasil Belajar Matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, *1*(1), 29–39. https://doi.org/10.30998/formatif.v1i1.61.

Sumyadi, Y., Umasih, U., & Syukur, A. (2020). The Effect of Teacher Teaching Skills and Student Interest on History Learning Outcomes. *Journal of Education Research and Evaluation*, *4*(3), 315–320. https://doi.org/10.23887/jere.v4i3.28349.

Suryani, I., & Maksum, H. (2020). Positive Contribution of Creativity and Independence to Student Learning Outcomes in Digital Communication Simulation. *Journal of Education Research and Evaluation*, *4*(4), 414. https://doi.org/10.23887/jere.v4i4.29932.

Ware, K., & Rohaeti, E. (2018). Penerapan Model Problem Based Learning Dalam Meningkatkan Kemampuan Berpikir Analitis Dan Keterampilan Proses Sains Peserta Didik Sma. *JTK (Jurnal Tadris Kimiya)*, *3*(1), 42–51. https://doi.org/10.15575/jtk.v3i1.2219.

Wulandari, M., Astalini, A., & Darmaji, D. (2021). Analisis Kebutuhan Mahasiswa terhadap Pengembangan E-Modul Fisika Matematika I di Program Studi Pendidikan Fisika FKIP Universitas Jambi. *Jurnal Pendidikan MIPA*, *11*(Desember 2021), 23–28. https://doi.org/10.37630/jpm.v11i2.473.

Wulandari, M., Wirayuda, R. P., Aldila, F., & Wulandari, R. (2020). Description of students' Integrated Science

Process Skills on Friction Material on a Flat Field. *Lensa: Jurnal Kependidikan Fisika*, *8*(2), 93–103. https://doi.org/10.33394/j-lkf.v8i2.3206.

Yulfianti, S. Y., & Dewi, R. M. (2021). Efek Learning Management System Berbasis Google Classroom dan Minat Belajar Terhadap Hasil Belajar Ekonomi Siswa. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, *7*(2), 491. https://doi.org/10.33394/jk.v7i2.3717.

Yundarini, N. K. S., Nyoman Sudana, D., & Astawan, I. G. (2020). Assessment Instruments of Social Attitudes and Social Studies Learning Outcomes for Class V SD on Theme of Lingkungan Sekitar Kita. *Journal of Education Research and Evaluation*, *4*(3), 288. https://doi.org/10.23887/jere.v4i3.27486.