Correlation of Learning Style and Learning Motivation on Learning Outcomes Understanding Concepts

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Abstract

The aim of this research is to determine the relationship between learning style and learning motivation with students' learning outcomes in understanding concepts in the Teaching and Learning course at the State University of Malang. This research was conducted using the Multiple Correlation Test simultaneously and the Pearson Correlation Test. From the results of data processing it is known that sig. (2-tailed) learning style and learning outcome variables are 0.084 and sig. (2-tailed) on the learning motivation and learning outcomes variables is 0.718. Meanwhile, the results of simultaneous multiple correlation analysis test data processing on sig. F Change is worth 0.219. The findings from this research indicate that there is no relationship between learning style and learning motivation and students' conceptual understanding in the Teaching and Learning course at the State University of Malang. This can be caused by several factors such as a less supportive learning environment, differences in educational backgrounds, and the implementation of online exams so that the follow-up to this research is the need to evaluate the learning environment, develop more interactive learning methods, as well as further research to understand more in relation to factors that influence student learning outcomes in Learning and Learning courses.

Keywords: Learning Style; Motivation to learn; Learning outcomes

1. Introduction

Education is Foundation key in the formation of quality human resources. To ensure the effectiveness of the learning process, it is necessary to understand the factors that influence student learning outcomes. According to Reigeluth's learning science (1979), there are three factors that are considered learning variables, namely learning conditions, learning methods, and learning outcomes. Learning methods include many approaches to achieving certain learning goals, while learning conditions include aspects that influence the effectiveness of the method in improving learning outcomes. Learning outcomes include all effects resulting from the learning process, including students' understanding of concepts, skills and behavior.

Based on learning condition variables, Reigeluth and Merrill (1979) believe that it is very important to divide learning conditions into three categories: objectives and characteristics of the field of study, constraints and characteristics of the field of study, and student characteristics. In this research, researchers took learning styles and learning motivation which are part of student characteristics and are included in the learning condition variables. Naufal Ar-Rozaq et al. (2022) stated that learning style and learning motivation are significant and interconnected aspects in improving learning outcomes.

A person's tendency to learn influences the results they will obtain. Each individual has their own way of receiving information, some simply listen to the source, some note down what

they receive, and some must demonstrated. This shows that there are different learning styles or types for each individual. According to research by Simanungkalit et al. (2020), teachers must have a deep understanding of students' learning styles in order to use appropriate teaching strategies and techniques. Learning style refers to a person's preferred and effective approach to learning, which includes factors such as ease, comfort, and sense of security, as well as use of time and senses. The VAK learning modality, also known as Visual, Auditory, and Kinesthetic learning styles, has been widely accepted and recognized as the most common form of learning. In the book Quantum Learning, Bobbi DePorter and Mike Hernacki identify three different learning styles: visual, auditory, and kinesthetic (VAK). Visual learners acquire knowledge through visual stimuli, auditory learners acquire knowledge through auditory stimuli, and kinesthetic learners acquire knowledge through tactile and motor experiences.

In every learning process, it is hoped that it can increase students' desire to learn. Until now, learning motivation is considered to play an important role in learning achievement. Uno (2023) defines learning motivation as external and internal encouragement that occurs in students who are learning a behavior, usually with several indicators or supporting aspects. According to Sardiman (2011), motivation in learning refers to encouragement that stimulates, supports and directs student involvement in learning activities, with the aim of achieving the desired goals.

Researchers conducted a preliminary study by observing directly to determine the learning conditions that occurred during the learning process. Based on findings that have been carried out with students offering A10 in the 2023/2024 Teaching and Learning course, it is known that some students are not focused on listening to the lecturer's delivery, such as being seen playing with their cell phone, talking to friends outside the learning context, and are sleepy. Learning begins by stimulating students through a lecture approach by the lecturer which requires students to concentrate on the subjects given. Next, students are directed to form small groups assisted by mentors according to the division that has been mutually agreed upon. The purpose of forming this group is to provide space for students to discuss topics or assignments given by the lecturer so that students can gain material reinforcement from the results of the discussion.

Learning style and learning motivation were chosen as independent variables in this research, in line with the belief that learning style preferences and students' motivation levels can provide a comprehensive picture of learning dynamics. As the dependent variable, learning outcomes. Conceptual understanding is measured to evaluate students' academic achievement in the context of Teaching and Learning courses. In preparing for the teaching and learning process, it is very important to understand the concepts in the context of learning and learning. The concepts studied in this course form a fundamental framework that functions as a basis for students to understand the main principles and important aspects of learning, including learning theory, learning conditions theory, and learning method theory. This knowledge allows students to develop efficient learning processes so that students can design effective learning processes for their students.

Arifudin (2021) defines learning as a process or effort made by each person to bring about changes in behavior as a result of experiencing various things that have been taught. These changes can take the form of knowledge, skills, attitudes and values. According to Bloom's Taxonomy, learning outcomes are modifications of student behavior which include the

cognitive, affective and psychomotor domains. These are skills that students acquire after going through the teaching and learning process. In addition to psychomotor and affective skills such as self-regulation, empathy, and emotional control, these changes also affect cognitive abilities such as comprehension, memory, and critical thinking.

Conceptual understanding is an important foundation because it creates a macro context that provides meaning and relevance to this research. In teaching and learning courses, these concepts function as a frame of reference for measuring the extent to which students are able to internalize information and apply it in a learning context. Thus, understanding concepts in this course is not only the ultimate goal of learning, but also a representative measure for evaluating the impact of learning style and learning motivation on the overall learning outcomes of understanding concepts.

This research aims to see and analyze the relationship between learning styles, learning motivation, and learning outcomes among students who program the A10 Study and Learning course for the 2023/2024 academic year. This research was conducted through direct observation. This research aims to increase our understanding of the relationship between learning styles, learning motivation, and conceptual understanding learning outcomes with the aim of informing the development of more appropriate and effective learning strategies. A deep understanding of these factors can help educators design more effective learning experiences, improve the quality of education, and ultimately, create a competitive learning environment in a dynamic educational era.

2. Method

The method used in this research is quantitative correlational. According to Mc Milan and Schumaker, the general stages in this research are as follows: identifying the problem, assessing the problem or literature review, formulating research questions or hypotheses, designing research, and drawing conclusions (Ibrahim et al. 2018). The aim of this research is to determine the influence of learning motivation and learning style on learning outcomes of understanding concepts in the A10 Teaching and Learning course in the 2023/2024 academic year.

The research subjects were students who were actively taking part in the A10 teaching and learning courses in that academic year. The sampling technique in this research used non-probability sampling with a saturated sampling technique. Researchers use this technique because generalizations to the population are more accurate and do not pay attention to characteristics outside the sample characteristics so they can cover adequate variation. The research was conducted at the State University of Malang with a sample of 54 students in the Study and Learning Offering A10 course. Data collection techniques on the independent variables use learning style questionnaire research instruments and learning motivation questionnaire instruments. Meanwhile, the data on the dependent variable was taken from the results of the Mid-Semester Examination with 10 essay questions. After the data is collected, the data is processed using 3 types of analysis, namely prerequisite tests in the form of normality and homogeneity tests, Pearson correlation tests, and simultaneous multiple correlation tests as shown in Figure 1 below.

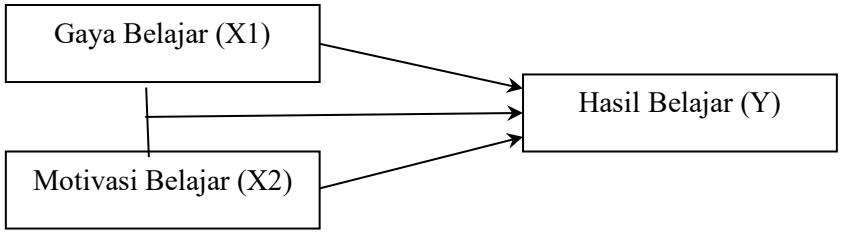

Figure 1 Research Design

Information:

X1 : Independent Variable 1

X2 : Independent Variable 2

AND : Dependent variable

——— : Relationship of Variable X1 or X2 to Variable Y

- - - - : Relationship of Variables X1 and X2 to Variable Y simultaneously

The correlation of these three variables can be seen from statistical data calculations. The chart above shows that the test was carried out to determine the correlation between learning styles and learning outcomes, learning motivation and learning outcomes, and the combined influence of learning styles and learning motivation on learning outcomes.

3. Results and Discussion

3.1 Result

Prerequisite Test

Normality test

The normality test is carried out to determine whether the data distribution is normal or not. Data is considered normally distributed if the significance value is greater than 0.05, which is the basis for decision making. Conversely, if the significance value is smaller than 0.05, it indicates that the data is not normally distributed. The table below displays the results of the normality test conducted for this study.

Table 1. Normality Test

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Say.	Statistic	df	Say.
Learning outcomes	.150	54	.004	.959	54	.062

Based on the significance value of the learning outcome variable seen from the Shapiro-Wilk table, the value is 0.062 (>0.05), so it can be concluded that the data is normally distributed.

Homogeneity Test

The homogeneity test is used as a prerequisite in this research to ascertain whether the variance of a particular population is the same or not. If the significance value is less than 0.05, it can be concluded that the variance of the data population group is not homogeneous, this is the basis for making homogeneity test decisions. If the significance value is more than 0.05, it can be concluded that the variance of the data population group is homogeneous.

Table 2. Homogeneity Test

Test of Homogeneity of Variance					
		Levene Statistic	**df1**	**df2**	**Say.**
HB	Based on Mean	.320	2	51	.727
	Based on Median	.167	2	51	.846
	Based on Median and with adjusted df	.167	2	45.375	.846
	Based on trimmed mean	.286	2	51	.752

From the table above, it can be seen that sig. 0.727 (>0.05) so that based on the basis for decision making, it can be concluded that the research data is homogeneous.

Hypothesis testing

This research aims to test three hypotheses using the Pearson correlation test and simultaneous multiple correlation test. The hypothesis to be tested is:

Hypothesis 1

H0: There is no relationship between learning styles and learning outcomes in understanding concepts.

H1: There is a relationship between learning styles and learning outcomes in understanding concepts.

Hypothesis 2

H0: There is no relationship between learning motivation and learning outcomes in understanding concepts.

H1: There is a relationship between learning motivation and learning outcomes in understanding concepts.

Hypothesis 3

H0: There is no relationship between learning style and learning motivation on learning outcomes in understanding concepts.

H1: There is a relationship between learning style and learning motivation on learning outcomes in understanding concepts.

From the results of the first and second hypothesis tests carried out using Pearson Correlation Test analysis, the results in the table below were obtained.

Table 3. Pearson Correlation Test

Correlations				
		GB	**MB**	**HB**
GB	Pearson Correlation	1	-.047	-.237
	Sig. (2-tailed)		.735	.084
	N	54	54	54
MB	Pearson Correlation	-.047	1	.050
	Sig. (2-tailed)	.735		.718
	N	54	54	54
HB	Pearson Correlation	-.237	.050	1
	Sig. (2-tailed)	.084	.718	
	N	54	54	54

The basis for decision making used is if the sig value. (2-tailed) < 0.05, it can be concluded that there is a significant correlation between the variables being linked. Conversely, if sig. (2-tailed) > 0.05, it can be concluded that there is no significant correlation between the variables being linked.

The results of the Pearson correlation test between learning styles and learning outcomes show a significance value of 0.084 (>0.05) and a Pearson correlation value of -0.237 (negative). It can be concluded that there is no relationship between learning styles so that the decision results for hypothesis 1, H0, are accepted and H1 is rejected. Meanwhile, the results of the Pearson correlation test between learning motivation and learning outcomes show a significance value of 0.718 (>0.05) and a Pearson correlation value of 0.050 (positive). It can be concluded that there is no relationship between learning motivation and learning outcomes so that the decision results for hypothesis 2, H0, are accepted and H1 is rejected.

To see the statistical results of hypothesis 3, a Simultaneous Multiple Correlation test was carried out which can be seen in the following table.

Table 4. Multiple Correlation Test

Model Summary							
Model	R	Change Statistics					Durbin-Watson
		R Square Change	F Change	df1	df2	Sig. F Change	
1	.241a	.058	1.567	2	51	.219	2.372

The basis for decision making used is if the sig value. F Change > 0.05 means there is no significant relationship between variable X and variable Y. Meanwhile, if the value is sig. F Change < 0.05, so there is a significant relationship between variables It can be concluded that the results of Hypothesis 3, H0, are accepted and H1 is rejected.

3.2 Discussion

The Study and Learning course is one of the university level courses where there are students from various education programs. In this research there are 10 educational programs from several faculties at Malang State University as shown in Figure 2 below.

Figure 2 Study Program Data

It can be seen from the chart above that the number of students from Bachelor of Education Administration is 3 people, Bachelor of Guidance and Counseling is 6 people, Bachelor of Physics Education is 4 people, Bachelor of Elementary School Education is 5 people, Bachelor of Science Education is 2 people, Bachelor of Physical Education is There are 2 people in Health and Recreation, 11 people in Special Education, 14 people in Out-of-School Education, 2 in Fine Arts Education, and 1 in Education Technology.

This research was conducted to find out whether there is a relationship between learning style and learning motivation on learning outcomes in understanding concepts in the Teaching and Learning course at the State University of Malang. After the data is obtained and processed, it can be seen that there is no relationship between variables X1, X2, and Y, namely learning style, learning motivation, and learning outcomes. In this research, learning style has no relationship to learning outcomes as seen based on the results of the Pearson correlation test with a significance of 0.084 (>0.05). This research has similarities with previous research which states that there is no significant relationship between learning styles and learning outcomes (Simanungkalit et al., 2020). Based on the data that has been obtained, researchers found that students in the Teaching and Learning Offering A10 course at Malang State University tend to have visual learning style with a total of 39 out of 54 students. Meanwhile, the least learning style is kinesthetic with 9 out of 10 students.

The analysis results of the absence of a relationship between learning styles and learning outcomes can occur due to learning environmental factors. In field conditions, this can happen because adequate classroom space is not used. During the learning process, the space used is a closed sports field that resembles a hall. In this case, the lecturer has been provided

with a large projector and sound system, but the condition of the study room makes the sound echo and the available projector is also not in sharp contrast. These factors can influence students' focus when learning is taking place. However, along with technological developments, obtaining information is certainly not a difficult thing to do. Students can search for related material via the internet, either in text or video form. Apart from that, after the learning process takes place the material that has been delivered will be distributed through class groups and SIPEJAR for study materials outside of class hours so that students can review the material again at each meeting. This is in line with (Simanungkalit et al., 2020) in their research which states that learning styles have no relationship with learning outcomes because of the similarity of factors with the teacher's teaching skills, psychology and learning facilities. Regardless of differences in learning styles, there is only one goal to be achieved, namely that students can meet the learning objectives and demonstrate the desired level of achievement.

From the correlation test results of learning motivation and learning outcomes, it can be seen that sig. 0.718 (>0.05) which means there is no correlation between variables. Bonem et al., (2020) argue that students feel more intrinsically motivated in more face-to-face learning and are more autonomy supportive, with the learning environment having a greater impact. However, the conditions of the learning environment in the field are inadequate for implementing learning. Based on the results of observations, some students have not shown attention in studying learning and learning theories so that during question and answer sessions, they tend not to respond and are more silent.

Based on the research results that have been obtained, it can be seen that learning style and learning motivation do not have a simultaneous (together) relationship with learning outcomes in understanding concepts so they have a very weak correlation. This can be influenced by different educational backgrounds in one offering. Each study program has a course major, moreover those who program Learning and Learning courses are students in the field of education so they will receive the Introduction to Education Science course. The material studied in this course discusses learning theory and learning in general. Students who have long-term memory will certainly feel that they have studied the material taught in the Study and Learning course.

In the levels of Bloom's Taxonomy, knowledge is at the second level of the cognitive domain. The researcher took the learning outcomes of conceptual understanding because the Mid-Semester Exam questions that were used were included in the second category. A person can obtain a concept through the process of identifying, understanding, and formulating the facts that define a concept (Kurniawan et al., 2023). Carrying out mid-term exams online can open up opportunities for students to search for answers on the internet. Apart from that, students can also ask questions and discuss privately with friends who also program Learning and Learning courses to get answers. From this analysis, this could be the reason why there is no relationship between learning style and learning motivation on student concept learning outcomes in the Study and Learning Course Offering A10 for the 2023/2024 academic year at Malang State University.

4. Conclusion

From the results of this research and discussion, it can be seen that no significant relationship was found between learning styles and learning outcomes, as well as learning motivation and learning outcomes. The results of the analysis show that inadequate learning environment factors, such as less than optimal classroom conditions, can affect students' focus and attention during the learning process. In addition, the differences in educational backgrounds of students from various study programs mean that students with different expertise may have varying levels of understanding. Carrying out mid-semester exams online also provides an opportunity for students to search for answers from external sources such as the internet, which may affect learning outcomes. The follow-up to this research includes evaluating the conditions of the learning environment, developing learning methods that suit student learning styles, as well as developing a more structured motivation program. In addition, further research needs to be carried out to understand the factors that influence student learning outcomes in more depth. Universities also need to develop learning resources that are more diverse and easily accessible for students. With these steps, it is hoped that the effectiveness of learning and student learning outcomes in Learning and Learning courses at the State University of Malang can be improved significantly.

References

Ar-Rozaq, M. N., Herlambang, A. D., & Wijoyo, S. H. (2022). Hubungan Gaya Belajar dan Motivasi Belajar terhadap Hasil Belajar Secara Daring pada Mata Pelajaran Teknologi Layanan Jaringan di SMK PGRI 1 Kota Pasuruan. Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer, 6(7), 3462–3470. http://j-ptiik.ub.ac.id

Asriyanti, F. D., & Janah, L. A. (2018). Analisis Gaya Belajar Ditinjau Dari Hasil Belajar Siswa. Ilmu Pendidikan: Jurnal Kajian Teori Dan Praktik Kependidikan, 3(2), 183–187.

Bire, A. L., Geradus, U., & Bire, J. (2014). Pengaruh Gaya Belajar Visual, Auditorial, Dan Kinestetik Terhadap Prestasi Belajar Siswa. Jurnal Kependidikan, 44(2), 168–174.

Bonem, E. M., Fedesco, H. N., & Zissimopoulos, A. N. (2020). What You Do Is Less Important Than How You Do It: The Effects Of Learning Environment On Student Outcomes. Learning Environments Research, 23(1), 27–44. https://doi.org/10.1007/s10984-019-09289-8

Budiningsih, C. A. (2011). Karakteristik Siswa Sebagai Pijakan Dalam Penelitian Dan Metode Pembelajaran. Cakrawala Pendidikan, 1(1), 160–173.

De Porter, B., & Hernacki, M. (2000). Quantum learning. PT Mizan Publika.

DePorter, B., Reardon, M., & FSinger-Nourie, S. (2010). Quantum teaching: mempraktikkan quantum learning di ruang-ruang kelas. Kaifa.

Hasbi, A. Z. El, Damayanti, R., Hermina, D., & Mizani, H. (2023). PENELITIAN KORELASIONAL (Metodologi Penelitian Pendidikan). Al-Furqan: Jurnal Agama, Sosial, Dan Budaya, 2(6), 784–808. https://publisherqu.com/index.php/Al-Furqan

Ibrahim, A., Alang, A. H., Madi, Baharuddin, Ahmad, M. A., & Darmawati. (2018). Metodologi Penelitian(Cetakan 1). Gunadarma Ilmu.

Laila, N. (2021). Analisis Kemampuan Komunikasi Matematis Pada Materi Segiempat Ditinjau Dari Gaya Belajar Siswa Kelas VII SMP Negeri 2 Bangkalan Tahun Ajaran 2020/2021.

Kurniawan, B., Dwikoranto, & Marsini. (2023). Implementasi Problem Based Learning Untuk Meningkatkan Pemahaman Konsep Siswa: Studi Pustaka. Practice of The Science of Teaching Journal: Jurnal Praktisi Pendidikan, 2(1), 27–36. https://doi.org/10.58362/hafecspost.v2i1.28

Mahmudi, I., Athoillah, Muh. Z., Wicaksono, E. B., & Kusuma, A. R. (2022). Taksonomi Hasil Belajar Menurut Benyamin S. Bloom. MUDIMA: Jurnal Multidisiplin Madani , 2(9), 3507–3514. https://doi.org/10.55927/mudima.v2i9.1132

Marwan, D. (2013). Pengaruh Lingkungan Belajar Terhadap Hasil Belajar Siswa Kelas X Mata Pelajaran IPS Di SMK. Jurnal Pendidikan Dan Pembelajaran Khatulistiwa (JPPK), 3(1).

Noervadila, I., & Misriyati. (2020). Pengaruh Gaya Belajar Dan Motivasi Belajar Terhadap Hasil Belajar Siswa Pada Mata Pelajaran Matematika Kelas X IPS Semester Genap Di MA Fathus Salafi Tahun Pelajaran 2019/2020. JURNAL IKA : IKATAN ALUMNI PGSD UNARS, 8(1), 48–56.

Pramesti, N. M. I., & Ratnadi, N. M. D. (2020). Pengaruh Kecerdasan Emosional, Gaya Belajar Visual, Gaya Belajar Auditorial dan Gaya Belajar Kinestetik Pada Tingkat Pemahaman Akuntansi. E-Jurnal Akuntansi, 30(1), 130–146. https://doi.org/10.24843/eja.2020.v30.i01.p10

Reigeluth, C. M., & Merrill, M. D. (1979). Classes of Instructional Variables. Educational Technology, 19(3), 5–24. https://www.researchgate.net/publication/287102560

Sardiman, A. M. (2011). Interaksi Dan Motivasi Belajar Mengajar/Sardiman AM.

Sihombing, S., Silalahi, H. R., Sitinjak, J. R., & Tambunan, H. (2021). Analisis Minat dan Motivasi Belajar, Pemahaman Konsep dan Kreativitas Siswa terhadap Hasil Belajar Selama Pembelajaran dalam Jaringan. Jurnal Pendidikan Matematika :JUDIKA EDUCATION, 4(1), 41–55. https://doi.org/10.31539/judika.v4i1.2061

Simanungkalit, N. R., Elindra, R., & Ardiana, N. (2020). Analisis Hasil Belajar Matematika Siswa Ditinjau Dari Gaya Belajar Siswa Di SMP-IT Bunayya Padangsidimpuan. JURNAL MathEdu (Mathematic Education Journal), 3(3), 59–66. http://journal.ipts.ac.id/index.php/MathEdu

Subini, N. (2017). Rahasia Gaya Belajar Orang Besar. Yogyakarta: Javalitera.

Suciani, K. (2022). Hubungan Gaya Belajar dan Motivasi Belajar terhadap Hasil Belajar IPA Siswa Kelas V Gugus V Kecamatan Manggis Tahun Pelajaran 2021/2022 (Doctoral dissertation, Universitas Pendidikan Ganesha).

Sulastri, E., Imran, & Ramadhan, I. (2022). Analisis Ciri-Ciri Gaya Belajar Mahasiswa Program Studi Pendidikan Sosiologi FKIP UNTAN. Jurnal Pendidikan Dan Pembelajaran Khatulistiwa (JPPK), 11(2).

Sunandi, L. (2013). Pengaruh Motivasi Belajar dan Pemanfaatan Fasilitas Belajar Terhadap Prestasi Belajar Siswa Pada Mata Pelajaran Ekonomi Kelas XI IPS Di SMA Muhammadiyah 2 Surabaya. Jurnal Pendidikan Ekonomi (JUPE), 1(3).

Supit, D., Melianti, Lasut, E. M. M., & Tumbel, N. J. (2023). Gaya Belajar Visual, Auditori, Kinestetik terhadap Hasil Belajar Siswa. Journal on Education, 05(03), 6994–7003.

Taiyeb, A. M., & Mukhlisa, N. (2015). Hubungan Gaya Belajar Dan Motivasi Belajar Dengan Hasil Belajar Biologi Siswa Kelas XI IPA SMA Negeri 1 Tanete Rilau. Jurnal Bionature, 16(1), 8–16.

Tarumasely, Y. (2020). Perbedaan Hasil Belajar Pemahaman Konsep Melalui Penerapan Strategi Pembelajaran Berbasis Self Regulated Learning. Jurnal Pendidikan Dan Kewirausahaan, 8(1), 54–65.

Thobroni. 2015. Belajar Dan Pembelajaran. Yogyakarta : Ar-Ruzz Media.

Ula, S. S., & Rose, K. R. (2013). Revolusi Belajar: Optimalisasi Kecerdasan Melalui Pembelajaran Berbasis Kecerdasan Majemuk/S. Shoimatul Ula.

Ulfah, & Arifudin, O. (2019). Peran Konselor Dalam Mengembangkan Potensi Peserta Didik. Jurnal Tahsinia (Jurnal Karya Umum Dan Ilmiah), 1(1), 92–100.

Ulfah, & Arifudin, O. (2021). Pengaruh Aspek Kognitif, Afektif, Dan Psikomotor Terhadap Hasil Belajar Peserta Didik. Jurnal Al-Amar (JAA), 2(1), 1–9.