Analysis of Students' Learning Independent During Online Learning (During the Covid-19 Pandemic)

Arta Ekayanti[1]

[1]*Universitas Muhammadiyah Ponorogo, Indonesia*
Corresponding author. Email: arta_ekayanti@umpo.ac.id

ABSTRACT

Independent learning is a condition where students have control over their own learning. This is very essential when we in the new normal era, considering that independent learning affects the success of learning activities. This study investigated students' learning independence and then presents the category of student learning independence in terms of each indicator and classical. This research was conducted to the students of the Mathematics Education Department at Universitas Muhammadiyah Ponorogo This research combine the qualitative and quantitative research type with a survey method. The instruments used were in the form of a questionnaire of learning independence. The research results shows that the majority of students have good independence considering that student independence is dominated by the high category followed by the medium category and there are no students with low independence. If the analysis is more detailed, for indicators of initiative, not depending on others, being responsible, self-disciplined and controlling is already good. however, in the category of making decisions and confident, it is necessary to strengthen again, so that student learning independence can be achieved optimally so that the learning outcomes obtained are in line with expectations.

Keywords: students, independent learning, online-learning.

1. INTRODUCTION

Learning is the process of acquiring new understanding, knowledge, behaviours, skills, values, attitudes and preferences. Simon Haykin describes learning process as a process by which the free parameters of a neural network are adapted through a continuing process of stimulation by the environment in which the network is embedded. The type of learning is determined by the manner in which the parameter changes take place [1]. Learning is a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning process [2]. The change in the learner may happen at the level of knowledge, attitude or behaviour. As a result of learning, learners come to see concepts, ideas, and/or the world differently. Learning is much deeper than memorization and information recall. Deep and long-lasting learning involves understanding, relating ideas and making connections between prior and new knowledge, independent and critical thinking and ability to transfer knowledge to new and different contexts[3].

The learning process, whether using learning applications or social networking, is called online learning. Online learning is the experience of knowledge transfer using video, audio, images, text communication, and software supported by internet networks [4]. Online learning was chosen by the Indonesian government as an alternative in the education sector to organize learning activities during the COVID-19 pandemic. It refers to Letter of the Minister of education and culture No. 36962/MPK.A/HK/2020 about Online Learning and Working from Home to Prevent the Spread of Covid19 as an effort to prevent the spread of Covid19 [5]. Learning system undergoes a change from face-to-face to online [6]. The efforts made to prevent the spread of Covid19 by applying a physical distancing, keep physical distance, and remain at home. Likewise at universities, they anticipate Covid19 with the adoption of online learning. The use of technology in distance learning online can be done using the facilities of the internet network. The use of technology to facilitate students and lecturers to conduct lectures, though in a different place [7].

In the other hand, there are new problems when we apply online learning systems, such as learning material or lecture material that has not been delivered to the fullest, to stack the various tasks given. Another problem with this online learning system is the access of information that is constrained by signals that cause slow access to information [8]. Consequently they were not getting sufficient information, and then they were late in collecting a task given by the lecturer. Besides that, the limited storage space of the gadget is also a problem too. Therefore, the application of online learning also makes educators think back about the models and learning methods to be used. The lecturer had already prepared the learning model to be used and then had to change the learning model [9].

Zimmerman stated that there are three stages of learning independence namely forethought, performance control and self-reflection. Forethought involves analysing tasks and setting goals. Performance control refers to monitor and control actions cognitive, attitude, emotional and motivational. Self reflection related to making consideration of things that have been achieved and change behaviour and goal orientation. Thus learning independence is a constructive process and active which is indicated by the presence of task analysis and settings goals to be achieved, make strategies or plans to achieve the goals, implement the strategies, monitoring and controlling performance, and evaluating to improve the weaknesses in order to achieve goals effectively and efficiently [10].

Independent learning has implications for responsible decision making, as individuals are expected to analyse problems, reflect their work, make decisions and take purposeful actions. To take responsibility for their lives in times of rapid social change, students need to learn on a life-long basis. As most aspects of our daily lives are likely to undergo profound changes, independent learning will enable individuals to respond to the changing demands of work, family and society. Teachers should train students to take charge of every stage of their own learning, which includes: setting goals, identifying and developing strategies to achieve such goals, developing study plans, reflecting on learning (which includes identifying problem areas and the means of addressing these problems), identifying and selecting relevant resources and support, and assessing one's own progress (which includes defining criteria for evaluating results of learning) [11].

Therefore, we can say that learning independence is one of the most important factors in the effort to achieve learning objectives. But every student must have a different level of learning independence from one another, this may be due to family factors, the environment, and so forth. Every student has individual differences in how to learn. The differences are seen in not only what students learn, but also how the students

learn [9]. Therefore, in this study, we will analyse how independent students are in participating in online learning activities, especially during the COVID-19 pandemic.

2. METHOD

This research combine the qualitative and quantitative research type with a survey method. This research was conducted to analyse the independence learning of mathematics student in Universitas Muhammadiyah Ponorogo. The sampling technique used in this research was purposive and consisted of 41 students. The data collection technique were documentation, using a student learning independence questionnaire. Learning independence questionnaire contains 13 statements that refer to indicators of learning independence. The indicators used in this study were adapted from Kopzhassarova et al[11], Oktarin et al [12], and Mustika [13].

Tabel 1. The mapping of learning independence indicators on the questionnaire

Indicators	Number	Total
Initiative	2,10	2
Making decisions	6	1
Not relying on other people	4,13	2
Responsibility	7,11	2
Discipline	1,12	2
Confident	5,8	2
Self-controlling	3,9	2

The choice of answers used in these instruments include always (4), often (3), sometimes (2), and never (1). Furthermore, learning independence data were analysed using scoring guidelines adapted from Sudijono [14] using theoretical mean $\left(\frac{1}{2}(x_{max} - x_{min})\right)$ and standard deviation $\left(\frac{1}{6}(x_{max} - x_{min})\right)$. Data were analysed by descriptive percentage on classical analysis (total) and each indicator of learning independence.

Table 2. Categorization of learning independence

Criteria	Category
$x \geq mean + SD$	High
$mean - SD < x < mean + SD$	Medium
$x \leq mean - SD$	Low

3. RESULT AND DISCUSSION

The data from this study are presented based on classical analysis and indicators of independence learning. The results of the classical analysis show that 53.66% of students in high category and 46.34% of students in medium category of learning independence. This study did not find any students with low category.

The results of the study in Table 3 below shows the difference in the number of students who have learning independence in participating in online lecture activities. However, the number of students who have high and moderate learning independence is not significantly different. In fact, it can be said to be almost balanced.

Table 3. Classical analysis result of learning independence

Category	Number of Students	Percentage
High	22	53,66%
Medium	19	46,34%
Low	0	0

From Table 3 indicate that there are no students with low independence, students already have independence, including in high and moderate learning independence. This is very likely to happen considering that in the implementation of online learning activities, students are required to carry out several aspects of learning independently. Thus, apart from the shortcomings and limitations of online learning activities, it seems that the positive side of the implementation of online learning so far can be found. This is like the results of research conducted by Kusuma (2020) where the application of online learning has a positive impact on student independence [15].

The same as the implementation of learning in general, the application of online learning also aims at achieving satisfactory student learning outcomes, of course this cannot be separated from the student's independence factor. Considering that online learning requires independent learning in order to obtain good learning outcomes. The implementation of online learning requires high learning independence from students (in this case, students) to be able to understand the material being taught, because learning independence has a positive effect on learning outcomes[16]. Furthermore, Darr and Fisher in their research found that learning independence was positively correlated with the achievement of student learning outcomes [17]. Referring to this, based on the results of this study which states that student learning independence is included in the high and medium categories, it is expected to achieve good learning outcomes.

Based on the analysis of the data obtained, it was found that detailed student learning independence can be seen as in Table 4.

Indicators	Percentage		
	High	Medium	Low
Initiative	46,34	34,16	19,5
Making decisions	48,78	0	51,22

Indicators	Percentage		
	High	Medium	Low
Not relying on other people	75,61	21,95	2,44
Responsibility	80,49	14,63	4,88
Discipline	95,12	4,88	0
Confident	17,07	17,07	65,86
Self-controlling	60,98	14,63	24,39

In table 4, it can be seen that from each indicator the majority is dominated by the high category except for the indicators of making decisions and confident. Here the distribution of data is almost comprehensive, except for the medium category making decisions indicator and the low category discipline indicator where both are zero.

In the first indicator, namely initiative, it can be seen that students who have high initiative are 46.34%, students with moderate initiative are 34.16% and 19.5% are students who have low initiative. Basically, the implementation of online learning requires an initiative for academics, including students, considering that interactions with teachers, lecturers and with other students are not as extensive as usual. Therefore, in some cases, students are required to have their own initiative. Thus indirectly this encourages students to have the initiative. This is in accordance with the statement that online learning activities prioritize student initiative [18].

Based on the data analysis results, the number of students who are able to make decisions is 48.78%, while the number of students who are weak in making decisions is 51.22%. From the data in table 4 above, it appears that there are no students who are included in the medium category. Based on this data it can be seen that especially in decision making indicators is still dominated by the weak category, although its difference with the high category is not significant. It should receive special attention and efforts are needed to improve students' decision-making abilities. It is sought so that student learning independence can be achieved optimally.

In the third indicator, which is not dependent on others, 75.61% of students are in the high category, 21.95% of students are in the medium category and 2.44% are in the low category. From this data, it can be seen that the majority of students do not depend on others in participating in online learning activities.

On the responsibility indicator, 80.49% of students are in the high category, 14.63% of students are in the medium category and 4.88% of students are in the low category. Thus it can be seen that the majority of students have a high responsibility. This can be interpreted that the application of online learning indirectly makes students more responsible. This is very possible considering that in order to understand and understand the lecture material, students should be responsible for their learning

process, both in understanding the material and doing assignments. This is in line with the results of Akhmad's research which states that online learning teaches students to be more responsible in independent learning [19].

The next indicator is discipline. Table 4 shows that 95.12% of students have high discipline and 4.88% have moderate discipline. There are no students with low discipline here. This is shows that the majority of students have high discipline in online learning. This is corresponding with study was conveyed by Halima and Fajrianti, it showed that the disciplined character of students can be seen well during online learning [20].

Next, the sixth indicator is confident. In this indicator, the number of students with high confidence is 17.07%, students with medium confidence are 17.07% and students with low confidence are 65.86%. It can be seen that students' self-confidence tends to be low. This is certainly an important thing that should be resolved, namely by making efforts to increase the level of student confidence in online learning.

The last indicator is self-controlling. The number of students in the high self-controlling category is 60.98%, moderate self-controlling is 14.63% and students in the low self-controlling category are 24.39%. It appears that students with low self-control are still quite large. From this, it can be seen that students' self-controlling abilities still need to be strengthened. Considering that students are still in the category of late teens, they are still learning how to control themselves in this case their emotions properly and correctly. Apart from this, the self-controlling indicator is dominated by the high category. It should be noted that by having good self-control all activities including studying will also run well [21].

4. CONCLUSION

Based on the results of this study, it can be concluded that the majority of students have good independence considering that student independence is dominated by the high category followed by the medium category and there are no students with low independence. If the analysis is more detailed, for indicators of initiative, not depending on others, being responsible, self-disciplined and controlling is already good. however, in the category of making decisions and confident, it is necessary to strengthen again, so that student learning independence can be achieved optimally so that the learning outcomes obtained are in line with expectations

ACKNOWLEDGMENTS

REFERENCES

[1] W. Kesheng, "Agile Manufacturing: The 21st Century Competitive Strategy." 2001.

[2] S. A. Ambrose, M. W. Bridges, M. DiPietro, M. C. Lovett, and M. K. Norman, How learning works: Seven research-based principles for smart teaching. San Francisco, CA: Jossey-Bass, 2010.

[3] "https://www.queensu.ca/teachingandlearning/modules/home.html." .

[4] Y. B. Hermanto and V. A. Srimulyani, "The Challenges of Online Learning During the Covid-19 Pandemic," J. Pendidik. dan Pengajaran, vol. 54, no. 1, pp. 46–57, 2021.

[5] The Ministry of Education and Culture Republic of Indonesia. Letter of the Minister of education andculture No. 36962/MPK.A/HK/2020 about Online Learning and Working from Home to Prevent the Spread of Covid19. Jakarta: The Ministry of Education and Culture Republic of Indonesia, 2020.

[6] A. K. Arora and R. Srinivasan, "Impact of Pandemic Covid19 on the Teaching–Learning process: A Study of Higher Education Teachers," Prabandhan, vol. 13, no. 4, pp. 43–56, 2020.

[7] A. Alchamdani, A. Fatmasari, S. E.R., P. N.P., and A. F., "The Impact of Covid19 Pandemic on Online Learning Process In The College At Southeast Sulawesi," J. Kesehat. Lingkung., vol. 12, no. 1, pp. 129–136, 2020.

[8] R. Puspitasari, "Hikmah Pandemi Covid 19 Bagi Pendidikan di Indonesia." IAIN SURAKARTA, 2020.

[9] W. Bilda and A. Fadillah, "An Analysis of Students in Independent Learning of Analytic Geometry During the COVID-19 Pandemic," JTAM (Jurnal Teor. dan Apl. Mat., vol. 4, no. 2, pp. 166–172, 2020.

[10] Runisah, "Peningkatan Kemandirian Belajar Matematika Siswa SMP Melalui Model Learning Cycle 5E dengan Teknik Metakognitif," JES-MAT, vol. 4, no. 1, pp. 13–24, 2018.

[11] U. Kopzhassarova, G. Akbayeva, Z. Eskazinova, G. Belgibayeva, and A. Tazhikeyeva, "Enhancement of Students' Independent Learning Through Their

Critical Thinking Skills Development," Int. J. Environ. Sci. Educ., vol. 11, no. 18, pp. 11585–11592, 2016.

[12] S. Oktarin, L. Auliandari, and T. F. Wijayanti, "Analisis Kemandirian Belajar Siswa pada Mata Pelajaran Biologi Kelas X SMA YKPP Pendopo," Bioeduscience, vol. 2, no. 2, pp. 104–115, 2018.

[13] M. Mustika, Analisis Kemandirian Belajar Siswa pada Jurusan IPS di Sekolah Menengah Atas Negeri 2 Tambang. Skripsi. Universitas Islam Negeri Sultan Syarif Kasim Riau, 2019.

[14] A. Sudijono, Pengantar statistic pendidikan. Jakarta: PT. Raja Grafindo Persada, 2009.

[15] D. A. Kusuma, "Dampak Penerapan Pembelajaran Daring Terhadap kemandirian Belajar (Self-Regulated Learning) Mahasiswapada Mata Kuliah Geometri Selama Pembelajaran Jarak Jauhdi Masa Pandemi Covid-19," TeoremaTeori dan Ris. Mat., vol. 5, no. 2, pp. 169–175, 2020.

[16] N. Handayani and F. Hidayat, "Hubungan kemandirian terhadap hasil belajar siswa mata pelajaran matematika di kelas X SMK kota cimahi," J. Educ., vol. 1, no. 2, pp. 1–8, 2019.

[17] I. Supianti, "Dampak penerapan e-learning dalam pembelajaran matematika terhadap kemandirian belajar mahasiswa," Teorema Teor. dan Ris. Mat., vol. 1, no. 1, pp. 1–6, 2016.

[18] S. M. P. C. Bangsa, "Pembelajaran Daring Memberikan Banyak Manfaat." 2021.

[19] N. A. Akhmad, "Analisis Respon Mahasiswa Terhadap Perkuliahan Daring Di Prodi Biologi Stkip Pi Makassar," Karst J. Pendidik. Fis. dan Ter., vol. 3, no. 2, pp. 62–65, 2020.

[20] Halima and Fajrianti, "Karakter Disiplin Siswa Selama Pembelajaran Daring Masa Pandemic Covid-19 Di Mtsn 1 Kendari." .

[21] R. K. Setyawati and M. Chelsea, "Mengelola Emosi Mahasiswa Selama Belajar Secara Daring," JurnalAdministrasi dan Kesekretarisan, vol. 6, no. 1, pp. 63–77, 2021.