

Self-regulated learning in online classes: A comparative study between Malaysian and Indonesian students

Anas Bin Tajudin^{1*}  <https://orcid.org/0000-0003-4134-2106>

Chusna Maulida²  <https://orcid.org/0000-0002-8813-8287>

Ria Dwi Vransiska²  <https://orcid.org/0000-0001-8765-4311>

¹Business School, Kuala Lumpur Metropolitan University College (KLMUC), Malaysia

²Faculty of Tarbiyah, UIN Raden Mas Said Surakarta, Indonesia

ABSTRACT

Self-regulated learning (SRL) becomes a crucial part for the success of online classroom activities during the COVID-19 pandemic. To date, studies exploring students' SRL in the contexts of Malaysian and Indonesian universities are still lacking and remain more empirical evidence. This study aims to examine and compare both university students' SRL toward online learning activities at the time of global pandemic. The required data are quantitatively collected from 103 undergraduates from University A in Malaysia and 119 college students from University B in Indonesia by using an online questionnaire on students' self-regulated learning adapted from Motivated Strategies for Learning Questionnaire (MSLQ). The sudden shifting from face-to-face interaction to online class instruction is a new learning style and could be challenging, but the finding of this study shows that the students from both universities achieve high mean scores on the SRL questionnaire. This finding indicates that the students have a positive attitude, high academic motivation levels, and good self-learning control over themselves during the online classes. This study contributes to the extension of the current literature about self-regulated learning in higher education context. This study further suggests that teachers could assist students' self-regulated learning to improve their academic performances by keeping their motivation and engagement, particularly in the time of online classes during COVID-19 pandemic era. Hence, future studies are recommended to investigate the impact of students' SRL on learning achievement as it can help teachers to enhance students' performance in online classes.

ARTICLE INFO

Keywords:

autonomous learning; online classes; self-regulated learning

Article History:

Received: 26 February 2022

Revised: 21 June 2022

Accepted: 23 June 2022

Published: 25 June 2022

How to Cite in APA Style:

Tajudin, A. B., Maulida, C. Vransiska, R. D. (2022). Self-regulated learning in online classes: A comparative study between Malaysian and Indonesian students. *Journal of Educational Management and Instruction*, 2(1), 1-11.

Introduction

The sudden implementation of online classes has changed the education system in global settings to adapt to the current situation caused by the COVID-19 outbreak. In Southeast Asia countries, for example universities in Malaysia and Indonesia, there have been so many changes and adaptation models to ensure the education process such as having only a small number of students who come to the face-to-face classes in school and universities while the others stay at home to study in an online mode to stop the transmission of the virus (Kamal et al., 2020; Omar et al., 2021; Saputri et al., 2020). Since March 2020, Malaysian universities have been closed through the institutional mandatory of Malaysian Ministry of Higher Education to avoid the spread of the virus among the students (Sundarasan et al., 2020). Likewise, in Indonesia, the Ministry of

Education and Culture has also obliged universities to do shifting in learning system from face-to-face interaction to online classes so that the education process still continues by learning from home (Nugroho et al., 2021). Online learning was then becoming an alternative to replace the usual physical classroom interaction. It is, of course, a new learning experience. However, shifting from in-class to online classes in a shocking way may not be an easy task for students and teachers since they have to adapt to so many challenges that can influence their motivation, readiness, satisfaction, and performance toward teaching and learning.

In Indonesian context, studies have shown a number of challenges encountered by students and teachers when having the online classes (Nartiningrum & Nugroho, 2021; Octaberlina & Muslimin, 2020; Putra et al., 2020; Setyaningsih, 2020). In a similar direction, Malaysian universities have to also deal with various challenges and problems in conducting online learning activities from home (Chung et al., 2020; Kamil & Sani, 2021; Krishan et al., 2020). In responding to the online classes, Chung et al. (2020) and Amin and Sundari (2020) reported that some Malaysian and Indonesian undergraduate students were not prepared for the online classes and identified several challenges such as the difficulty to understand learning materials and lack of students' motivation and engagement in virtual learning activities. Moreover, Wulanjani and Indriani (2021) revealed that although some students seemed to be ready for online learning, there were difficulties to handle online distractions and time management that affect their learning motivation and satisfaction, and indeed influence their performance. In addition to these problems, technical challenges such as unstable internet connection and affordable of digital devices also contribute to the difficult situation of online classes in some regions of Malaysia and Indonesia (Hermanto & Srimulyani, 2021; Munir et al., 2021). In this situation, self-regulated learning which is done by each student is crucial and plays a significant role to overcome a number of challenges and problems that have emerged during the practice of online classes.

Self-regulated learning (SRL) is defined as students' ability to take control and be responsible toward their own learning (Araka et al., 2020; Panadero et al., 2018). In the context of online classes, the extent and level of students' SRL can facilitate them to follow the learning instruction when face-to-face activities are not allowed. This fact was empirically tested by Azevedo and Gašević (2019) who examined the role of SRL performed by undergraduate students and found that it assisted the students to continuously join a blended learning activities and subsequently increase their learning performance. It was also confirmed by a study by Carter Jr et al. (2020) that students with high level of SRL were more motivated in completing the learning activities and successfully pass the study objectives. SRL is closely related to autonomy and individual learning in which students are required to monitor and control their own learning strategies and processes (Wong et al., 2019). In Asian context, autonomous learning is still considered rare and not be massively trained to the students (Omar et al., 2020). This might be closely related to the eastern cultural tradition that teachers are the authority figure in the classroom; hence, students' dependency on the teachers is quite high. It was empirically proven by the study of Wijaya et al. (2020) that undergraduate students were lack of confidence to learn autonomously, primary because of slow responses by their teachers to communicate with them. However, the situation might be different when the students are joining online classes that require more confidence and autonomy for learning. Online learning has a potential to indirectly enhance students' motivation and self-control toward their own style and strategies to achieve the highest academic performance.

Studies on self-regulated learning performed by undergraduate students have shown that it has a positive effect on learning motivation and achievement. Ergen and Kanadli (2017) and Jansen et al. (2019) found that SRL was effective in improving students' learning achievement, and suggested that teachers should learn how to

improve the efficacy of SRL as an alternative to support the success of learning. Cho et al. (2017) examined the effects of SRL levels on students' perceptions of community of inquiry (CoI) and their affective outcomes. The finding revealed that highly SRL of the students had a close relationship with a stronger sense of CoI and higher affective outcomes, compared to students who had low level of SRL. Fernandez and Jamet (2017) tested the effect of SRL process on students' learning performances. Results of experimental study involving practice group and control group showed that compared with the students in control group, students in practice group were more successful in recall recently learned materials and performed better on a post-test questionnaire. It indicates that SRL plays a crucial role to enhance students' academic achievement. Moreover, the relationship between the level of SRL and students' learning independence in elementary education has also been studied by Sukowati et al. (2020). The result depicted that there was a significant influence between SRL and the learning independence of elementary school students.

Malaysia and Indonesia are two countries in Southeast Asia having greater population comparing to other countries in the region. Both countries are also identified as having similar characteristics and cultural attractiveness. Moreover, both countries were severely affected by the outbreak of COVID-19 in the recent years. Hence, they are struggling for the continuity of education process through online learning, along with several challenges and problems that occur. Hence, exploring both countries' undergraduate students' SRL is a strategic issue and becomes an interesting attribute to explore. Lim et al. (2020) reported that SRL strategies have a positive and statistically significant effect on Malaysian students' online learning satisfaction. It was further found that SRL could mediate the positive relationship between peer learning and the students' learning motivation. In Indonesian context, Muharom et al. (2022) researched university students' self-directed use of mobile devices for language learning. Through a survey involving 267 students, the results explained that self-directed practices played crucial roles in strengthening students' understanding about learning materials and help students in expanding their international experiences. From the two studies about SRL conducted in Malaysian and Indonesian learning contexts, it can be concluded that SRL is a promising strategy to assist online classes during the COVID-19 pandemic. Therefore, profiling both countries' university students' practices on SRL is highly necessary to do to portray the current situation of online learning efficacy.

Thus, the present study is conducted to shed some light on Malaysian and Indonesian university students' self-regulated learning during online classes at the time of COVID-19 pandemic. A comparative study on SRL levels among students from both countries is employed using a survey. An online questionnaire adapted from Motivated Strategies for Learning Questionnaire (MSLQ) on students' self-regulated learning is developed to elicit the data. This study involves students of a public university in Malaysia (University A) and students of a public university in Indonesia (University B). Conducting study in the levels of SRL of Malaysian and Indonesian students could provide more understanding and literature enrichment on this matter. This study further contributes to providing insights and clear pictures for teachers and university stakeholders about students' levels of SRL, so that they can act accordingly in finding the most suitable strategy to foster students' performance in online classes during and after the COVID-19 pandemic.

Method

Research Design

This study aims to examine Malaysian and Indonesian undergraduate students' SRL in online classes. A quantitative research was adopted since it is considered suitable to reach this study's purpose. It could portray a broad and general view and gather the

data from groups of people to describe particular phenomenon (Walter & Andersen, 2016). It focuses on measuring the purpose of a study by using numerical and statistical analysis of data obtained from a questionnaire (Smith, 2014; Teo, 2014). Moreover, quantitative study is more suitable in this research since it aims to describe generalization about the levels of SRL in online classes performed by groups of undergraduate students in Malaysia and Indonesia.

Research Context and Participants

This study took place in a public university in Malaysia and a public university in Indonesia. As neighboring countries, Malaysia and Indonesia share a lot of similarities instead of differences in many things including education system. When COVID-19 pandemic emerged and affected countries around the world, Malaysia and Indonesia were two among them that were severely affected, so that full online learning along its challenges and problems was conducted to ensure the education process in both countries. A total of 222 college students participated in this study as the participants, consisting of 103 undergraduates from University A in Malaysia and 119 university students from University B in Indonesia. They were conveniently selected based on the practicality and availability of the research sample. In terms of age, the participants were between 19-23 years old studying in several fields such as law, mathematics, education, and economics. Initially, we gained 237 responses to our questionnaire, but only 222 responses were valid, while the other 15 answers were considered invalid due to redundant responses and incomplete questionnaire. This study was carried out around September to December 2021 where most of schools and universities in Indonesia and Malaysia still conducted online classes, although some of them had begun to administer blended learning as the number of people infected to COVID-19 in both countries were decreasing by the time.

Instrument and Data Collection

An online questionnaire was used to elicit the required data from the participants. We chose to deliver the questionnaire in an online mode since it was still pandemic at the time of the data collection was conducted. Thus, the technique used in this study was delivering the questionnaire through an online survey distributed using social media platforms and emails since it was the most practical method for the time being. The questionnaire was adapted from Motivated Strategies for Learning Questionnaire (MSLQ) on students' self-regulated learning (Jacobson & Harris, 2008). The first part of the questionnaire was the demographic information of the participants such as gender, age, field of study, etc. The second part of the questionnaire was the main content scrutinizing the participants' responses on SRL in online classes amidst the COVID-19 pandemic. It consisted of 9 items measured using 7-point Likert scale ranging from 1 (not at all true of me) to 7 (very true of me). Ethical consent was obtained from the participants in the beginning of the questionnaire before they could proceed to fulfil the survey. They were notified about the purpose of the data collection, and they were also assured that the data they provided would only be used for the sake of this study.

Data Analysis

The data were further analyzed using descriptive statistics to reach the objective, by the assistance of Statistical Package for Social Science (SPSS) software 24 version. The data were firstly tabulated. To check the normality of the data, the skewness and kurtosis z-values were analyzed by dividing the skewness measure with its standard error. The z-values should be somewhere between -1.96 and +1.96 (Doane & Seward, 2011). The results of the skewness and kurtosis z-values for SRL of University A were 0.91 and -1.12 and University B were 1.11 and 0.31 respectively, meaning that there was no problem with the data normality. The result of normality test using Kolmogorov-Smirnov showed

that all significant values were above 0.05, indicating that all data were normally distributed (Razali & Wah, 2011). Moreover, the reliability test was conducted for SRL items by means of Cronbach alpha value, and resulting of 0.78 for the SRL scale, meaning that the items of the questionnaire were reliable. Next, Table 1 presents the interpretation of mean analysis for each item in SRL questionnaire, which would be used to analyze participants responses on each item. Furthermore, Table 2 shows the mean range interpretation of SRL scale, which would be used to interpret the overall mean score to portray the generalization of SRL levels of students from Malaysia and Indonesia.

Table 1. Mean Range Interpretation for Each Item of SRL

Mean Range	Interpretation
1.00 – 2.99	Low
3.00 – 4.99	Moderate
5.00 – 7.00	High

Table 2. Mean Range Interpretation for Overall SRL Level

Mean Range	Interpretation
9.00 – 26.99	Low
27.00 – 44.99	Moderate
45.00 – 63.00	High

Results

Table 3 presents the findings of mean scores (M) of each item in SRL questionnaire and standard deviation (SD) based on the participants' responses. A total of 6 items in SRL questionnaire for University A (Malaysia) that achieved high scores, i.e. item 1, item 3, item 4, item 5, item 8, and item 9. Among the six high mean scores, item 4 possessed the highest score (M=6.03; SD=1.31), followed by item 1 (M=5.93; SD=1.03), item 9 (M=5.84; SD=1.49), item 5 (M=5.81; SD=0.89), item 8 (M=5.71; SD=1.47), and item 3 (M=5.56; SD=0.72). on the side of moderate level of SRL for University A, there were item 7 (M=4.96; SD=0.75), item 6 (M=4.72; SD=1.07), and item 2 (M=2.51; SD=0.95) which had the lowest mean score.

Table 3 also describes mean score analysis of each item in SRL questionnaire provided by students in University B (Indonesia). A total of five items were categorized as having high mean scores. They were item 1 (M=6.01; SD=1.04), item 4 (M=5.89; SD=0.92), item 9 (M=5.76; SD=1.07), item 5 (M=5.75; SD=1.09), and item 8 (M=5.73; SD=1.02). Among the high mean score items for University B, item 1 had the highest score. Unlike the SRL items for University A that had three items in moderate level, the SRL items that resulted in moderate level for University B were four. They were item 3 (M=4.98; SD=1.25), item 7 (M=4.92; SD=0.84), item 6 (M=4.42; SD= 1.41), and item 2 (M=3.92; SD=0.18).

When we go further to have a detailed look in Table 3, an interesting finding is observable. First, the participants from both countries scored similar high means across five SRL items which are item 1, item 4, item 5, item 8, and item 9. Second, if we take a look at items with moderate levels, students from both universities also achieved quite similar mean scores in three items of the questionnaire in item 2, item 6, and item 7. Finally, item 3 is the only statement that they scored differently where students from University A scored high while students from University B scored moderate. This finding indicates that Malaysian and Indonesian university students possess similar characteristics in performing self-regulated learning.

Table 3. Mean Analysis of Each Item of SRL

No	Items	University A			University B		
		M	SD	Inter	M	SD	Inter
1	I ask myself questions to make sure I know the material I have been studying	5.93	1.03	High	6.01	1.04	High
2	When work is hard, I never give up or study only the easy parts	4.51	0.95	Moderate	3.92	0.18	Moderate
3	I work on practice exercises and answer questions even when I don't have to	5.56	0.72	High	4.98	1.25	Moderate
4	Even when study materials are dull and uninteresting, I keep working until I finish	6.03	1.31	High	5.89	0.92	High
5	Before I begin studying, I think about the things I will need to do to learn	5.81	0.89	High	5.75	1.09	High
6	I often have been reading for class materials for long until I know what it is all about	4.72	1.07	Moderate	4.42	1.41	Moderate
7	I find that when my teacher is explaining, I listen carefully and try to understand what it is conveyed	4.96	0.75	Moderate	4.92	0.84	Moderate
8	When I am reading, I stop once in a while and go over what I have read	5.71	1.47	High	5.73	1.02	High
9	I work hard to get a good score even when I don't like a course	5.84	1.49	High	5.76	1.07	High

To depict a more general finding about the SRL levels performed by Malaysian and Indonesian college students in online classes, Table 4 shows the summary of mean score analysis and standard deviation. According to Table 4, the overall mean score for University A on SRL questionnaire is 49.07 and the standard deviation is 6.72. It can be interpreted that students from University A are having high level of SRL in online classes. Likewise, the overall mean score on SRL questionnaire performed by students from University B reaches 47.38 with the standard deviation 5.91. It is also implied that students from University B are achieving a high level of SRL during online learning practices. The difference made by students from both countries is that only on the distribution of the mean score, in which those from University A achieved higher score than those from University B, although both mean scores are in the level of high SRL.

Table 4. Summary of Mean Analysis of Overall SRL

SRL	Mean	SD	Interpretation	N
University A	49.07	6,72	High	103
University B	47.38	5,91	High	119

Discussion

The results of the present study show that self-regulated learning (SRL) in online classes amidst the COVID-19 era performed by Malaysian and Indonesian university students reached high level based on the results of data analysis. This finding indicates that undergraduate students in Malaysia and Indonesia possess positive perception and attitude toward the practices of online classes in the recent years. The high level of SRL of students from both countries further implies that they have a good motivation to continuously engage in online learning activities, despite of some challenges that might accompany their learning process. The finding also suggests that they are able to take a good control and be responsible of their own learning style, strategies, and time management. This finding has also hinted that they have good ability to overcome online learning barriers completing learning tasks that were might be boring and monotonous. It can also be interpreted that they were being mentally prepared to have an online class prior to study. The potential reason for this is that they have dealt with online learning activities for more than a year since the first establishment of university closure regulation at the time of COVID-19 outbreak in the beginning of 2020.

The Malaysian and Indonesian students achieved high mean score of five SRL items such as the willingness to evaluate their learning performance, the perseverance in completing study and tasks, quality planning and learning management, and the resistance to keep learning to achieve good scores and academic grades. This is in line with the finding of Littlejohn et al. (2016) that students consider online classes as a formal learning just like the usual face-to-face learning that should be taken seriously and with full of responsibility, and they have high self-regulation in online learning. Overall, Malaysian and Indonesian undergraduate students possessed similar perspective on their SRL, while the only difference is when they responded to the matter of initiative to learn or answer tasks, even they do not have to. Here, Malaysian students shared their high level of mean score, meaning that they are fully initiative to do tasks or works that they do not even have to do. On the other hand, Indonesian undergraduates responded with a moderate level on this matter, indicating that they are not fully have the initiative, but they still do what they have to do in learning and performing tasks.

Moreover, this study portrays the overall mean score of SRL performed by students from both countries. It is shown that Malaysian and Indonesian college students have a high level of SRL (Malaysian students:49.07 & Indonesian students:47.38). In general, they are quite similar in terms of acquisition level of SRL in online classes. It can be said that Malaysian and Indonesian undergraduates perceive autonomous learning and personal initiative as a crucial part of the success of online classes, particularly in the time of COVID-19 pandemic. SRL is closely related to autonomous learning, and about this, Panadero et al. (2017) pointed out that SRL items were based on metacognitive skills and learning management strategies. In relation to this, as Malaysian and Indonesian undergraduate students provide positive responses to the nine items of SRL questionnaire in this study, it is summed up that they possess good mental, attitude, and learning management strategies for study in an online mode during the COVID-19 pandemic.

In addition, this study also suggests that Malaysian and Indonesian students are aware and responsible for their own learning, and such an attitude is fruitful during the practice of online learning since teachers could not completely monitor the learning progress like in a face-to-face classroom. Online learning environment is actually offering ample opportunities for individual and introvert students to actively engage in the learning activities without barriers and feeling ashamed of others like in a formal classroom (Ferrer et al., 2020; Kaufmann & Vallade, 2020). In a direct interaction like in a classroom, some students often have a feeling of shyness and afraid of showing their arguments and opinions in front of other people. Hence, online classroom could be a good environment for them to optimally express and show their potentials. Because of

the participants in this study show high level of SRL, it can be interpreted that they are able to actively participate in the learning environment and perhaps have a high sensitivity for others as well as support each other during the online classes.

This study further shows that Malaysian and Indonesian university students are stepping toward the concept of learner autonomy that supports the finding of Ariebowo (2021) and Ghazali (2020) as they were argued that there was a positive correlation between SRL in online classes amidst COVID-19 pandemic and fostering the learner autonomy. It is undeniable that the sudden change of learning mode from face-to-face to online interaction truly contributes to the development of students' autonomous learning, especially university students. They are required to be an independent learner to achieve the success of academic performance. It is also happened in Malaysian and Indonesian education contexts where the COVID-19 outbreak gives a special lesson that becoming a successful university student cannot be separated from being an autonomous learner. However, teachers' role cannot be put aside; still, teachers have to provide contribution in scaffolding students toward learner autonomy since it is not a common habit of Asian students, especially in Southeast Asian. Fostering the autonomous learning seems to be a serious challenge, but it is a worth trying. We are now having a good chance to develop the autonomous learning among our students since we are still in an online class environment due to the COVID-19 pandemic.

The results of this study have several implications for teaching-learning activities in university context. First, portraying the profile of self-regulated learning of university students provides a good chance for teachers and lecturer to begin acknowledging the crucial role of self-regulated learning outside the formal classroom. The idea of self-regulated learning is in line with the concept of autonomous learning. Nowadays, teachers are not only giving course materials in the class hours, but they also have significant role to foster students' autonomous learning outside the classroom, especially for language learning. Hence, teachers and lecturers are required to design more communicative, attractive, and creative out-of-class learning activities to foster students' self-directed learning. Second, campus administrators and curriculum developer may use the results of this study as guidance and reference in developing syllabus and curriculum for language learning. Learning a language is about performing a lot of practices to develop its skills. Therefore, by designing a more active learning beyond the class hours, students will have ample opportunities to develop their self-directed learning. It leads to the increase of learning awareness and autonomy.

Conclusion

This study investigates levels of self-regulated learning in online classes of Malaysian and Indonesian college students. A comparative study under quantitative research design was adopted using an online questionnaire on students' self-regulated learning adapted from Motivated Strategies for Learning Questionnaire (MSLQ) proposed by Jacobson and Harris (2008). The primary finding of this study is that Malaysian and Indonesian students achieve high level of SRL mean scores of all items. It is interesting to note that Malaysian and Indonesian university students have a positive perspective and attitude toward the online classes, as well as show a good behavior on the willingness to evaluate their learning performance, the perseverance in completing study and tasks, quality planning and learning management, and the resistance to keep learning to achieve good scores and academic grades. The finding has contributed toward the enrichment of the current literature on SRL in the contexts of education in Malaysia and Indonesia. Such a finding is further beneficial for education stakeholders and authorities in both countries to map and understand challenges encountered by students in online learning environment.

This study acknowledges several limitations. First, this study only used a questionnaire to elicit the data. Although it is a good instrument to gather data from a

group of college students, it did not capture sufficient information about the students' views on their SRL performances. Second, there was only SRL that was researched in this study, while other variables closely related to online learning still remain more paucity of empirical evidence. With regards to the first limitation, future studies are encouraged to employ more various data collection instruments to depict an in-depth understanding about the students' views related to self-regulated learning. In terms of the second limitation, future research is suggested to study other variables such as self-efficacy, motivation, attitude, and engagement of the students in an online learning, so it will provide more enrichment in the body of literature.

References

- Amin, F. M., & Sundari, H. (2020). Efl students' preferences on digital platforms during emergency remote teaching: Video conference, lms, or messenger application? *Studies in English Language and Education*, 7(2), 362–378. <https://doi.org/10.24815/siele.v7i2.16929>
- Araka, E., Maina, E., Gitonga, R., & Oboko, R. (2020). Research trends in measurement and intervention tools for self-regulated learning for e-learning environments—systematic review (2008–2018). *Research and Practice in Technology Enhanced Learning*, 15(1), 1–21. <https://doi.org/10.1186/s41039-020-00129-5>
- Ariebowo, T. (2021). Autonomous learning during COVID-19 pandemic: Students' objectives and preferences. *Journal of Foreign Language Teaching and Learning*, 6(1), 56–77. <https://doi.org/10.18196/ftl.v6i1.10079>
- Azevedo, R., & Gašević, D. (2019). Analyzing multimodal multichannel data about self-regulated learning with advanced learning technologies: Issues and challenges. *Computers in Human Behavior*, 96, 207–210. <https://doi.org/10.1016/j.chb.2019.03.025>
- Carter Jr, R. A., Rice, M., Yang, S., & Jackson, H. A. (2020). Self-regulated learning in online learning environments: strategies for remote learning. *Information and Learning Sciences*, 31(5), 321–329. <https://doi.org/10.1108/ILS-04-2020-0114>
- Cho, M.-H., Kim, Y., & Choi, D. (2017). The effect of self-regulated learning on college students' perceptions of community of inquiry and affective outcomes in online learning. *The Internet and Higher Education*, 34, 10–17. <https://doi.org/10.1016/j.iheduc.2017.04.001>
- Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online learning readiness among university students in Malaysia amidst COVID-19. *Asian Journal of University Education*, 16(2), 46–58. <https://doi.org/10.24191/ajue.v16i2.10294>
- Doane, D. P., & Seward, L. E. (2011). Measuring skewness: a forgotten statistic? *Journal of Statistics Education*, 19(2), 1–18. <https://doi.org/10.1080/10691898.2011.11889611>
- Ergen, B., & Kanadli, S. (2017). The effect of self-regulated learning strategies on academic achievement: A meta-analysis study. *Eurasian Journal of Educational Research*, 17(69), 55–74. <https://doi.org/10.14689/ejer.2017.69.4>
- Fernandez, J., & Jamet, E. (2017). Extending the testing effect to self-regulated learning. *Metacognition and Learning*, 12(2), 131–156. <https://doi.org/10.1007/s11409-016-9163-9>
- Ferrer, J., Ringer, A., Saville, K., A Parris, M., & Kashi, K. (2020). Students' motivation and engagement in higher education: The importance of attitude to online learning. *Higher Education*, 83, 1–22. <https://doi.org/10.1007/s10734-020-00657-5>
- Ghazali, F. Al. (2020). Challenges and Opportunities of Fostering Learner Autonomy and Self-Access Learning During the COVID-19 Pandemic. *Studies in Self-Access Learning Journal*, 11(3), 114–127. <https://doi.org/10.37237/110302>
- Hermanto, Y. B., & Srimulyani, V. A. (2021). The challenges of online learning during the covid-19 pandemic. *Jurnal Pendidikan Dan Pengajaran*, 54(1), 46–57.

- <https://doi.org/10.23887/jpp.v54i1.29703>
- Jacobson, R. R., & Harris, S. M. (2008). Does the type of campus influence self-regulated learning as measured by the motivated strategies for learning questionnaire (MSLQ)? *Education*, 128(3), 412–432.
- Jansen, R. S., Van Leeuwen, A., Janssen, J., Jak, S., & Kester, L. (2019). Self-regulated learning partially mediates the effect of self-regulated learning interventions on achievement in higher education: A meta-analysis. *Educational Research Review*, 28, 100292. <https://doi.org/10.1016/j.edurev.2019.100292>
- Kamal, A. A., Shaipullah, N. M., Truna, L., Sabri, M., & Junaini, S. N. (2020). Transitioning to online learning during COVID-19 Pandemic: Case study of a Pre-University Centre in Malaysia. *International Journal of Advanced Computer Science and Applications*, 11(6), 217–223. <http://dx.doi.org/10.14569/IJACSA.2020.0110628>
- Kamil, M. J. M., & Sani, M. N. A. (2021). The challenges and initiatives of teaching product design's course online during the covid-19 pandemic in malaysia. *Asia Pacific Journal of Educators and Education*, 36(1), 113–133.
- Kaufmann, R., & Vallade, J. I. (2020). Exploring connections in the online learning environment: student perceptions of rapport, climate, and loneliness. *Interactive Learning Environments*, 1–15. <https://doi.org/10.1080/10494820.2020.1749670>
- Krishan, I. A., Ching, H. S., Ramalingam, S., Maruthai, E., Kandasamy, P., Mello, G. De, Munian, S., & Ling, W. W. (2020). Challenges of Learning English in 21st Century: Online vs. Traditional During Covid-19. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 5(9), 1–15. <https://doi.org/10.47405/mjssh.v5i9.494>
- Lim, C. L., Ab Jalil, H., Ma'rof, A. M., & Saad, W. Z. (2020). Self-Regulated Learning as a Mediator in the Relationship between Peer Learning and Online Learning Satisfaction: A Study of a Private University in Malaysia. *Malaysian Journal of Learning and Instruction*, 17(1), 51–75.
- Littlejohn, A., Hood, N., Milligan, C., & Mustain, P. (2016). Learning in MOOCs: Motivations and self-regulated learning in MOOCs. *The Internet and Higher Education*, 29, 40–48. <https://doi.org/10.1016/j.iheduc.2015.12.003>
- Muharom, F., Nugroho, A., & Putra P., H. R. & (2022). Self-directed use of digital devices for out-of-class English learning. *International Journal of Education in Mathematics, Science, and Technology (IJEMST)*, 10(1), 257–271. <https://doi.org/10.46328/ijemst.2245>
- Munir, F., Anwar, A., & Kee, D. M. H. (2021). Online Learning and Students' Fear of COVID-19: Study in Malaysia and Pakistan. *International Review of Research in Open and Distributed Learning*, 22(4), 1–21. <https://doi.org/10.19173/irrodl.v22i4.5637>
- Nartiningrum, N., & Nugroho, A. (2021). English teachers' perspectives on challenges, suggestions, and materials of online teaching amidst the global pandemic. *IJEE (Indonesian Journal of English Education)*, 1(1), 101–119. <https://doi.org/10.15408/ijee.v1i1.17886>
- Nugroho, A., Haghegh, M., & Triana, Y. (2021). Emergency Remote Teaching amidst Global Pandemic: Voices of Indonesian EFL Teachers. *VELES Voices of English Language Education Society*, 5(1), 66–80. <https://doi.org/10.29408/veles%20journal.v5i1.3258>
- Octaberlina, L. R., & Muslimin, A. I. (2020). EFL Students Perspective towards Online Learning Barriers and Alternatives Using Moodle/Google Classroom during COVID-19 Pandemic. *International Journal of Higher Education*, 9(6), 1–9. <https://doi.org/10.5430/ijhe.v9n6p1>
- Omar, S., Farhan Azim, N., Mohd Nawawi, N. S., & Zaini, N. (2020). Motivational Strategies among English Language Teachers: An Examination in Higher Education Institutions in the Malaysian Context. *Arab World English Journal (AWEJ)*, 11(3), 170–183. <https://dx.doi.org/10.24093/awej/vol11no3.10>
- Omar, S., Shaharuddin, W. Y. W., Azim, N. A. F., Azim, N., Nawawi, N. S. M., Zaini, N., &

- Syahfutra, W. (2021). Academic Motivation in English Online Classes: A Comparative Study of Universities in Malaysia and Indonesia. *Indonesian Journal of Applied Linguistics*, 11(2), 477–487. <https://doi.org/10.17509/ijal.v11i2.34538>
- Panadero, E., Andrade, H., & Brookhart, S. (2018). Fusing self-regulated learning and formative assessment: A roadmap of where we are, how we got here, and where we are going. *The Australian Educational Researcher*, 45(1), 13–31. <https://doi.org/10.1007/s13384-018-0258-y>
- Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-assessment on self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review*, 22, 74–98. <https://doi.org/10.1016/j.edurev.2017.08.004>
- Putra, P., Liriwati, F. Y., Tahrim, T., Syafrudin, S., & Aslan, A. (2020). The students learning from home experience during covid-19 school closures policy in indonesia. *Jurnal Iqra*, 5(2), 30-42. <https://doi.org/10.25217/ji.v5i2.1019>
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of shapiro-wilk, kolmogorov-smirnov, lilliefors and anderson-darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21–33.
- Saputri, T., Khan, A. K. B. S., & Kafi, M. A. (2020). Comparison of Online Learning Effectiveness in the Ele During Covid-19 in Malaysia and Indonesia. *PIONEER: Journal of Language and Literature*, 12(2), 103–119. <https://doi.org/10.36841/pioneer.v12i2.700>
- Setyaningsih, E. (2020). Face to Face or Online Learning: Students' Perspectives on Blended Learning in Indonesia. *Journal of English Language Studies*, 5(1), 1–14. <http://dx.doi.org/10.30870/jels.v5i1.6256>
- Smith, T. A. (2014). Testing theory and related factors for influencing proficiency in quantitative research. *Academy of Educational Leadership Journal*, 18(4), 117-128.
- Sukowati, S., Sartono, E. K. E., & Pradewi, G. I. (2020). The effect of self-regulated learning strategies on the primary school students' independent learning skill. *Psychology, Evaluation, and Technology in Educational Research*, 2(2), 81–89. <https://doi.org/10.33292/petier.v2i2.44>
- Sundarasan, S., Chinna, K., Kamaludin, K., Nurunnabi, M., Baloch, G. M., Khoshaim, H. B., Hossain, S. F. A., & Sukayt, A. (2020). Psychological impact of COVID-19 and lockdown among university students in Malaysia: implications and policy recommendations. *International Journal of Environmental Research and Public Health*, 17(17), 6206. <https://doi.org/10.3390/ijerph17176206>
- Teo, T. (2014). *Handbook of quantitative methods for educational research*. Springer Science & Business Media. <https://doi.org/10.1007/978-94-6209-404-8>
- Walter, M., & Andersen, C. (2016). *Indigenous statistics: A quantitative research methodology*. Routledge.
- Wijaya, T. T., Ying, Z., & Suan, L. (2020). Gender and self regulated learning during COVID-19 Pandemic in Indonesia. *Jurnal Basicedu*, 4(3), 725–732. <https://doi.org/10.31004/basicedu.v4i3.422>
- Wong, J., Baars, M., Davis, D., Van Der Zee, T., Houben, G.-J., & Paas, F. (2019). Supporting self-regulated learning in online learning environments and MOOCs: A systematic review. *International Journal of Human-Computer Interaction*, 35(4–5), 356–373. <https://doi.org/10.1080/10447318.2018.1543084>
- Wulanjani, A. N., & Indriani, L. (2021). Revealing higher education students' readiness for abrupt online learning in Indonesia amidst COVID-19. *NOBEL: Journal of Literature and Language Teaching*, 12(1), 43–60. <https://doi.org/10.15642/NOBEL.2021.12.1.43-59>