



Self-Regulated Learning in Covid 19 Pandemic: A Comparative Study between Indonesia and Malaysia

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Students all over the world have experienced significant changes in their learning due to the covid-19 pandemic as schools and institutions were forced to switch to distant online education, which requires high self-regulated learning skills. A total of 338 were males and 886 were female respondents from public high school and university students in Indonesia and Malaysia (542 Malaysian and 682 Indonesian). Data were collected using the online self-regulated learning questionnaire (OSRL), which assesses self-regulated learning in the online and blended learning environment. Results revealed that there was statistically significant interaction between the effect of nationality and level of education on SRL among Indonesian and Malaysian students. Postgraduates showed higher levels of SRL in comparison to students from other levels. This study highlighted the SRL strategies that Indonesian and Malaysian students use to overcome the online learning challenges in covid-19, which might help educational institutions understand what support is needed to help students develop self-regulated learning skills in an online learning environment.

Keywords: self-regulated learning, pandemic, students, learning, online learning

INTRODUCTION

The Coronavirus (COVID-19) pandemic has been rapidly spreading over the globe and made a big change in all human life (Allam et al., 2020). Many countries all over the

Citation: Eva, N., Hutagalung, F. D., Peng, C. F., & Zaid, S. M. (2023). Self-regulated learning in Covid 19 Pandemic: A comparative study between Indonesia and Malaysia. *International Journal of Instruction*, 16(1), 625-642. <https://doi.org/10.29333/iji.2023.16135a>

world implemented interim schools and university closures shortly after World Health Organisation (WHO) declared the covid-19 pandemic in 2020, in an effort to halt and curb the spread of the viruses. The shutdown of schools and higher education institutions had impacted over 1.5 billion students by the end of April 2020 (UNESCO, 2021). The restriction directly causes the higher use of the internet network as students had to carry out learning activities at home. Prior to Covid-19 pandemic, online learning models at the higher education level is a mix with an offline learning mode, but during Covid-19 pandemic, learning and guidance were carried out fully online (Viberg et al., 2020).

Some students benefitted from online distance learning as they are able to work when and where they choose (Allam et al., 2020; Doculan, 2016). Essentially, online distance learning uses flexible learning activities to improve society's access to education (Zhang & Kenny, 2010). However, distance learning also has its weaknesses, for example the availability of facilities such as the latest technology and internet connectivity (Zounek & Sudicky, 2013). Many researches stated that children from families with low resources and support as well as learning motivation may be disadvantaged by the online distance learning (Grewenig et al., 2021; Huber & Helm, 2020).

According to Eva and Andayani (2022), around 12.6% of the Indonesian population did not have knowledge regarding the use of internet technology and furthermore, Indonesia also has issues with the availability of technology and internet connectivity. Similarly in Malaysia, educators face many difficulties such as lack of experience in developing e-content, method of assessment to evaluate learning outcome, lack of devices, and internet access among students to participate in online distance learning (Zhu et al., 2018).

In general, the Covid-19 pandemic has changed students learning styles which are strongly reliant on self-regulated learning (SRL) strategies and motivation (Stradiotova et al., 2021). In addition, the Covid-19 outbreak has had an impact on students' self-regulation learning practices around the world, due to the changes in the learning models (Viberg et al., 2020), as students had to change to highly independent and self-study (Stradiotova et al., 2021). SRL can be defined as a person's ability to comprehend and control his or her learning environment (Al Mulhim, 2021). A good SRL ability will determine learning outcomes (Ejubović & Puška, 2019), as SRL is essential for academic achievement (Bahri et al., 2021).

Students can improve their learning and impression of control over the learning process by using self-regulated learning cycle (Nejabati, 2015). Investigation of SRL in learning still pique the interest of a large number of researchers around the world (Hertel & Karlen, 2021; Kryshko et al., 2020), and is particularly relevant during these turbulent changes in education caused by the pandemic. During Covid-19 pandemic, students must perform a lot of self-studies, which demands a lot of effort, self-determination, and motivation on their own. A study conducted in Spain assessed how confinement at the start of the pandemic affected the self-regulation learning of university students, and found that self-regulating was decreased due to the shift from in-class teaching to virtual learning (Santamaría-Vázquez et al., 2021).

Research on SRL has increased in the last five years and there is a growing body of research that investigated the students' abilities to cope with online distance learning, for review see (Helm et al., 2021), however the findings of these studies are varied and still need further confirmation (Berger et al., 2021). According to Callan (2014), many studies on SRL that measure the level of students' SRL abilities produced a variety of high to low score categories. In fact, each individual has their own strategy in undertaking SRL (Zimmerman & Pons, 1986), as a good and appropriate SRL strategy will affect learning outcomes (Effeney et al., 2013).

In addition, studies indicated that self-regulated learning strategies such as setting academic goals, planning, monitoring, and managing the learning process are also underutilized among undergraduates (Balapumi, 2015; Stewart et al., 2015), time management is also a big concern (Anthonysamy & Choo, 2021; Hafizah et al., 2016). According to Abbasnasab et al. (2012), a large number of research in education have shown how SRL might improve student achievement and motivation to learn. However, to our knowledge only a few studies have been undertaken on high school and university students, particularly in the Indonesian and Malaysian settings to explore the SRL strategies that Indonesian and Malaysian students use during online distance learning and the interaction between level of education and nationality on SRL.

Therefore, this study tries to map out what SRL strategies are used by Indonesian and Malaysian students during the Covid-19 pandemic using the online self-regulated learning questionnaire (OSRL), which assess self-regulated learning in the online and blended learning environment. It was used to determine self-regulated behaviours among Indonesian and Malaysians in the covid-19 pandemic. Furthermore, this study aimed to determine whether there is a significant interaction between level of education and nationality on SRL among Indonesian and Malaysian students.

Literature Review

Self-Regulated Learning (SLR)

SRL is a process of self-directive done by students independently in a learning process. In other words, they are metacognitively active and motivated in their own learning process (Zimet et al., 1988; Zimmerman & Martinez-Pons, 1990; Zimmerman & Pons, 1986). The theory of self-regulation that is grounded in social cognitive theory (Panadero, 2017), focuses on all students' efforts to take initiative in learning as well as to control and evaluate their learning process. According to Bandura, Self-Regulated Learning refers to the degree to which students can set strategies in behaviour and regulate the learning environment (Zimmerman, 2002).

Self-regulated learning is very essential as a major function of education is to develop life-long learning skills. Despite the fact that there are various different SRL models, they all assume that students can actively manage their cognition and behaviour, and by doing so, they may attain their goals and perform better (Orhan, 2008). Furthermore, self-regulation of learning is not a single characteristic that students have or don't have. Rather, it entails the selective application of certain processes that must be tailored to each learning task. Setting a defined goal for oneself is one of the component abilities.

Second, implementing effective techniques for accomplishing the objectives. Third, keeping an eye on one's performance for indicators of improvement. Fourth, reorganizing one's physical and social environment to align with one's objectives. Fifth, effectively managing one's time and self-evaluating one's ways. Sixth, attribution of causation to results and future techniques adaptation (Zimmerman, 1989, 2002).

Furthermore, SRL is intimately linked to students' online learning performance. Self-regulation in learning requires a personal strategy, so different people will use different strategies (Martinez-Lopez et al., 2017). In a given situation, self-regulated learners are aware of the information and skills they have to possess, and they take necessary steps to acquire these skills (Orhan, 2008). Students with SRL strategies are more engaged in the learning process because they are able to determine study objectives and appropriate learning strategies as well as tracking their progress toward their learning objectives (Mahmud & German, 2021). Previous research on online learning has found that employing SRL strategies including metacognition, planning, time management, and effort management improves academic achievement (Broadbent & Poon, 2015; Mahmud & German, 2021; Zalli et al., 2019). Another study indicated that SRL strategies such as time management, planning, and self-evaluation were found to have a significant impact on students' learning satisfaction (Zalli et al., 2019).

Both the strategy or the level of individual ability to regulate their emotions are influenced by two main factors, namely internal and external. External factors affect self-regulation in two ways, which are environment and reinforcement (Alwisol, 2019; Jiwani, 2018). The environmental factors interact with personal influences in forming a person's self-evaluation standard. Through parents and teachers, children learn good and bad behaviour and also desirable and undesirable behaviour. Through interacting with others, children develop standards that can be used to assess self-achievement (Alwisol, 2019; Jiwani, 2018). With respect to reinforcement, although intrinsic rewards do not always give satisfaction, people need incentives that come from the external environment. When people can achieve a certain standard of behaviour, it needs reinforcement to repeat such behaviour. On the other hand, internal factors affect self-regulation in two ways, including self and behaviour. The self-factor is a factor that comes from the individual. According to Zimmerman (2002), the individual factors include individual knowledge, the level of metacognitive ability possessed by individuals, and also the goals to be achieved.

METHOD

Participants

The research respondents were high school and university students from two different countries which are Malaysia and Indonesia. A total of 542 Malaysian students (180 males, 362 females) and 682 Indonesian students (158 males, 524 females) participated in this study. The total sample size of this study was 1224 and categorized into three main subsamples; high school students, diploma and bachelor students, and postgraduate students. The size of each sample is presented in Table 1. The respondents were recruited using a convenience sampling method based on their availability to participate

in the current study. The questionnaire was distributed by sharing google form via WhatsApp and email, two cases out of 544 Malaysians respondents were excluded due to missing values and outliers, while the questionnaire distributed to 682 Indonesians, all cases were included.

Table 1
Samples information

| Samples | | Male | Female | Total |
|-----------|-------------------------------|------|--------|-------|
| Indonesia | High school | 45 | 117 | 162 |
| | Diploma and bachelor's degree | 92 | 337 | 429 |
| | Postgraduate students | 21 | 70 | 91 |
| | Total | 158 | 524 | 682 |
| Malaysian | High school | 88 | 131 | 219 |
| | Diploma and bachelor's degree | 73 | 199 | 272 |
| | Postgraduate students | 13 | 26 | 39 |
| | Others | 6 | 6 | 12 |
| | Total | 180 | 362 | 542 |

Measures

The online self-regulated learning questionnaire (OSRL), which assesses self-regulated learning in the online and blended learning environment, was adopted to determine self-regulated behaviours among Indonesian and Malaysians in the Covid-19 pandemic (Barnard-Brak et al., 2010). This questionnaire was developed by Barnard et al. (2008); Barnard et al. (2009), and it has only 24 questions on a 5-point Likert scale ranging from (5 = "strongly agree" to 1 = "strongly disagree") (Barnard-Brak et al., 2010). Goal setting, environment structuring, task strategy, time management help, help-seeking, and self-evaluation are the six categories used to assess self-regulated learning (Martinez-Lopez et al., 2017). OSRL was reported to have good validity and reliability with Cronbach alpha was reported as ($\alpha = 0.92$) (Barnard et al., 2009; Barnard-Brak et al., 2010). The reliability and validity of OSRL in the current study was tested and reported in the following sections.

Validity

The researchers used confirmatory factor analysis (CFA) to test the validity of the online self-regulated learning scale in the current study. The CFA revealed that all 24 items loaded under their designated factor with a value greater than 0.5. Furthermore, all of the SRL sub-constructs (goal setting, environment structuring, task strategy, time management help, help-seeking, and self-evaluation) had factor loadings of > 0.5 . This means that all the components have met the minimum cut-off value of 0.5, which is considered acceptable (Hair et al., 2019), so it can be considered that SRL is a valid questionnaire. The goodness of fit indices RMSEA, AGFI, TLI, and CFI met the criteria of goodness of fit cut-off scores recommended by Hair et al. (2019).

Reliability

To test the reliability and consistency of the data, composite reliability was used to assess the internal consistency of the scale items. The results of the analysis revealed that the construct reliability value is between 0.6 to 0.7 which is still acceptable as indicated by Taherdoost (2016). Therefore, it can be concluded that the construct reliability of the SRL measurement model is good. The reliability score of the SRL for respondents in the Indonesian and Malaysian samples is ($\alpha = 0.87$). Thus, it can be concluded that these dimensions meet the criteria of recommended reliability score which is 0.70 and above (Taherdoost, 2016).

Procedures

Researchers contacted counsellors, lecturers, and principle from different schools and universities in Indonesia and Malaysia and briefed them regarding the study and requested their cooperation in distributing the questionnaires to their students. The questionnaire was distributed to the students only. The students were briefed about the study and were requested to sign a consent form of participation in the current study that was attached to the google form, before responding to the items in the google form. Participants also were informed that participation is voluntarily and the confidentiality of their data.

Data Analysis

Data were collected using the self-regulated learning scale using google form and different tests were used to analysed the data. Researchers used frequencies and percentages to analysed the level of SRL among the students from the different levels (high school, diploma, bachelor's degree, masters, and doctoral), whereas Two-way ANOVA was used to test the interaction between level of education and nationality on SRL.

FINDINGS**Descriptive Statistics**

Prior of conducting any analysis, the researchers performed a normality test. It was found that SRL scores were normally distributed, the mean score is ($M = 87.86$, $SD = 14.58$), and the results of the Kolmogorov-Smirnov test showed that the data of SRL for the total sample is normally distributed with a non-significant value of 0.36 ($p > 0.05$). The skewness value is 0.002 and the kurtosis value -0.28.

Frequency of Internet Surfing Among Indonesian and Malaysian Students

Since it is crucial to know how much time students dedicated their time to online learning, researchers calculated the frequency of internet surfing for online learning purposes. Findings indicated that most of the Malaysian students (65.5%) spend more than 5 hours, while 56.9% of Indonesian students spend more than 5 hours (see table 2).

Table 2
Frequency of internet surfing among Indonesian and Malaysian students
How long do you spend surfing the Internet in a day?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------|--------------------|-----------|---------|---------------|--------------------|
| Indonesian students | 5 hours and above | 388 | 56.9 | 56.9 | 56.9 |
| | 3-5 hours | 175 | 25.7 | 25.7 | 82.6 |
| | 1-3 hours | 97 | 14.2 | 14.2 | 96.8 |
| | less than 1 hour | 18 | 2.6 | 2.6 | 99.4 |
| | no internet access | 4 | 0.6 | 0.6 | 100.0 |
| | Total | 682 | 100.0 | 100.0 | |
| Malaysian student | 5 hours and above | 355 | 65.5 | 65.5 | 65.5 |
| | 3-5 hours | 103 | 19.0 | 19.0 | 84.5 |
| | 1-3 hours | 70 | 12.9 | 12.9 | 97.4 |
| | less than 1 hour | 14 | 2.6 | 2.6 | 100.0 |
| | Total | 542 | 100.0 | 100.0 | |

Level of SRL among Indonesian students

The overall category was calculated from the total score of the SRL of Indonesian and the results are presented in Table 3.

Table 3
SRL level among Indonesian respondents

| | | Total SLR level | | | | Total |
|---|---------------------------------------|--------------------|---------|-------------|--------|-------|
| | | | Low-SRL | Average-SRL | High | |
| What is your highest education qualification? | High school and below | Count | 1 | 26 | 135 | 162 |
| | | % within SLR level | 0.6% | 16.0% | 83.3% | 23.8% |
| | A-Level Diploma and bachelor's degree | Count | 1 | 120 | 308 | 429 |
| | | % within SLR level | 0.2% | 28.0% | 71.8% | 62.9% |
| | Master and Doctorate | Count | 1 | 8 | 82 | 91 |
| | | % within SLR level | 1.1% | 8.8% | 90.1% | 13.3% |
| Total | | Count | 3 | 154 | 525 | 682 |
| | | % within SLR level | 0.44% | 22.58% | 76.98% | 100.0 |

From the table above, it can be seen that 162 Indonesian respondents were high school students, 0.6% of them were rated as low on SRL Scale, 16.0% were rated as moderate, and 83.3% were rated as high on SRL. Table 3 also showed that around 429 Indonesian students were diploma and bachelor students, 0.2 of them were rated as low on SRL, 28.0% were rated as moderate, and 71.8% were rated as high on SRL. While 91 of the

Indonesian respondents were postgraduate, around 1.1% were rated as low on the SRL scale, 8.8% were rated as moderate, and 90.1% were rated as high on the SRL scale.

Level of SRL among Malaysian Students

The overall category was calculated from the total score of the SRL of Malaysian respondents and the results are presented in Table 4.

Table 4
SRL level among Malaysian respondents

| | | | Total SLR level | | | |
|---|---------------------------------------|--------------------|-----------------|-------------|--------|--------|
| | | | Low-SRL | Average-SRL | High | Total |
| What is your highest education qualification? | High school and below | Count | 99 | 63 | 57 | 219 |
| | | % within SLR level | 55.0% | 35.2% | 31.1% | 40.4% |
| | Bachelor's degree and A level Diploma | Count | 73 | 95 | 104 | 272 |
| | | % within SLR level | 26.8% | 34.9% | 38% | 50.2% |
| | Master and Doctorate | Count | 3 | 16 | 20 | 39 |
| | | % within SLR level | 1.7% | 41% | 51% | 7.2% |
| | Others | Count | 5 | 5 | 2 | 12 |
| | | % within SLR level | 2.8% | 2.8% | 1.1% | 2.2% |
| | Total | Count | 180 | 179 | 183 | 542 |
| | | % within SLR level | 100.0% | 100.0% | 100.0% | 100.0% |

As can be seen from table 4, around 219 (40.4%) of the Malaysian sample were high school students, 55.0% of them were rated as low on the SRL scale, 35.2% were rated as average, and 31.1% were rated as high on SRL. While 272 (50.2%) were from diplomas and bachelor's degrees, 26.8% of them were rated as low on SRL, 34.9% were average on SRL, 38% were rated high on SRL. The total number of Malaysian postgraduates was 39 (7%), around 3% were rated as low on SRL, 41% were average, and 51% were high on the SRL scale.

To sum up, it is noticeable that the majority of the Indonesian (83.3%) high school students were rated high on SRL, while the majority of Malaysian high school students (55.0%) were rated low on SRL. Whereas 71.8 of Indonesian diploma and bachelor's degree students were rated high on SRL, 38% of Malaysian students were rated high. In addition, 90.1% of the Indonesian postgraduate students were rated high on the SRL scale, and 51% of Malaysian postgraduates were rated high on SRL

Overall View of SRL Strategies among Indonesian and Malaysian Students

The goal of this study was to observed what kind of SRL tactics Indonesian and Malaysian students employed in online learning. Researchers analysed the mean score

and standard deviation for each method to establish the type of strategy, and the results are provided in Table 5.

Table 5
SRL strategies use among Indonesian students

| Average use of strategy | ES_Total | GS_total | TM_total | HS_total | TS_total | SE_total |
|-------------------------|----------|----------|----------|----------|----------|----------|
| Mean | 16.24 | 15.07 | 14.24 | 14.84 | 13.68 | 15.23 |
| Std. Deviation | 2.39 | 3.04 | 3.39 | 3.26 | 2.97 | 2.93 |

Note: ES = Environment structure; GS = Goal setting; TM = Time management; HS = Help seeking; TS = Task strategies; SE = Self-evaluation.

As shown in table 5, the most commonly used strategies across Indonesian students are environment structuring followed by self-evaluation, goal setting, help-seeking, time management, and the least used strategy is task strategy. To determine the type of SRL strategies that Malaysian students use for online learning, researchers also calculated the mean score and standard deviation for each strategy and the results are presented in Table 6.

Table 6
SRL strategies use among Malaysian students

| Average use of strategy | ES_Total | GS_total | TM_total | HS_total | TS_total | SE_total |
|-------------------------|----------|----------|----------|----------|----------|----------|
| Mean | 15.19 | 19.51 | 10.16 | 14.09 | 14.16 | 14.74 |
| Std. Deviation | 3.128 | 3.361 | 2.484 | 3.317 | 3.017 | 3.299 |

Note: ES = Environment structure; GS = Goal setting; TM = Time management; HS = Help seeking; TS = Task strategies; SE = Self-evaluation.

Table 6 showed that the most commonly used strategies across Malaysian students are goal setting followed by environment structure, self-evaluation, task strategies, help-seeking, and the least used strategy is time management.

Differences in SRL in Terms of the Nationality and Level of Study

It was hypothesized that there are significant differences in SRL between Indonesian and Malaysian high school students, diploma and bachelor's degree, and postgraduates. A two-way ANOVA was conducted to analyse the effect of nationality and level of education on SRL among students. The results revealed that there was statistically significant interaction between the effect of nationality and level of education on SRL among Indonesian and Malaysian students ($F(4,1213) = 6.195$, $P = 0.000$, $\eta^2 = 0.020$). The analysis also revealed that nationality did not have significant effect on the level of SRL ($P = 0.717$), whereas level of education did have a significant effect on the level of SRL ($F(5,1213) = 5.596$, $P = 0.000$, $\eta^2 = 0.023$), the result of the Two-way ANOVA test for the Indonesian sample is presented in table 7.

Table 7
Test of between-subjects Effect

| Dependent Variable: SRL | | | | | | |
|-------------------------|-------------------------|-----------|-------------|-----------|------|---------------------|
| Source | Type III Sum of Squares | <i>df</i> | Mean Square | <i>F</i> | Sig. | Partial Eta Squared |
| Corrected Model | 10917.372 ^a | 10 | 1091.737 | 5.717 | .000 | 0.045 |
| Intercept | 2204129.180 | 1 | 2204129.180 | 11542.487 | .000 | 0.905 |
| Nationality | 25.148 | 1 | 25.148 | .132 | .717 | 0.000 |
| Education | 5343.312 | 5 | 1068.662 | 5.596 | .000 | 0.023 |
| Nationality * Education | 4731.620 | 4 | 1182.905 | 6.195 | .000 | 0.020 |
| Error | 231631.948 | 1213 | 190.958 | | | |
| Total | 9864656.000 | 1224 | | | | |
| Corrected Total | 242549.320 | 1223 | | | | |

a. R Squared = .045 (Adjusted R Squared = .037)

Tukey post hoc test was performed to compare the mean between the groups and determine where the differences are. The results indicated that Indonesian high school students ($M = 90.56$ $SD = 12.537$) have significantly higher level of self-regulation learning skills compared to Malaysian high school students ($M = 83.95$ $SD = 14.371$), while Malaysian masters ($M = 95.70$, $SD = 10.491$) and doctorate students ($M = 98.50$, $SD = 14.375$) are higher in SRL in comparison to Indonesian master ($M = 92.64$, $SD = 14.899$) and doctorate ($M = 94.71$, $SD = 8.967$). Therefore, it can be concluded that there are significant differences in the SRL among all the Indonesian and Malaysian students, especially for master and doctorate students.

DISCUSSION

The current study aimed at investigating the SRL strategies that Indonesian and Malaysian students use in online learning as well as investigating the level of SRL among Indonesian and Malaysian high school students, diploma and bachelor, and postgraduate students. Moreover, this study aimed at investigating the differences in SRL in terms of the level of education and nationality. In terms of the level of SRL among the Malaysian and Indonesian students, the findings of this study revealed that all the students have a good initiative, and have an ability to control their learning process; however, postgraduates (Masters and PhD) have higher SRL skills in comparison to students from other levels.

These results could be attributed to that Indonesian and Malaysian high school students, diploma and bachelors, and postgraduate students have a good ability in managing themselves in the learning process independently, as SRL is a process of self-directive done by students independently in learning (Zimmerman & Martinez-Pons, 1990). Furthermore, they also have high motivation in learning, as it is stated that one of the characteristics of high SRL is they are metacognitively active and motivated in their learning process (Zimet et al., 1988; Zimmerman & Pons, 1986). They can take initiative in learning as well as to control and evaluate their learning process, which is

consistent with Bandura's definition of Self-Regulated Learning that refers to the degree to which students can set strategies in behaviour and regulate the learning environment (Zimmerman, 2002).

The results of this study also revealed that the most commonly used strategy among Indonesian and Malaysian students is goal setting followed by environment structure, self-evaluation, task strategies, help-seeking, and the least used strategy is time management. In other words, the findings of this study pointed out the importance of planning and its components (goal settings, environment structure, and task strategies) as self-regulated learning strategies (Zimmerman, 2002). These findings are supported by the finding of a study conducted on Indonesian students by Mahmud and German (2021), which found that students had better goal setting and environment structure skills than other SRL components. This demonstrates that students had set particular requirements for their assignments during the online learning process, possess the necessary skills to create objectives, learn, manage their studies, and generate high-quality work. They also have positive abilities for organizing their study space so that they can focus on their task. These findings are also consistent with previous empirical investigations (Kizilcec et al., 2017; Whipp & Chiarelli, 2017). The finding of this study also supported by another study conducted by Whipp and Chiarelli (2017) on a sample of 4831 in six massive open online courses (MOOCs), which they found that learners with stronger planning and SRL abilities outperformed their peers who were not competent at planning in MOOCs.

Another strategy that was found significant is help-seeking, which influence students self-regulated learning. This finding is in line with earlier studies that have shown that students who reported collaboration with others, such as friends, throughout the course performed better (Breslow et al., 2013; Kizilcec & Schneider, 2015). On the contrary, this result is not aligned with some studies that found help-seeking is an important factor affecting students learning and goal achievement (Kizilcec et al., 2017). This could be attributed to help-seeking norms that differ across cultural contexts, which is especially obvious in collectivist cultures (Breslow et al., 2013). This finding is also inconsistent with the findings of Mahmud and German (2021) who indicated that seeking help was least used by Indonesian students who were slightly lower on help-seeking compared to other strategies. They ascribed this to the difficulties students faced in asking help from teachers, friends, and others who are deemed more educated than themselves when they are having difficulty completing tasks for their online courses despite possessing some abilities or tactics.

Self-evaluation was found to be one of the tactics utilized by Indonesian and Malaysian students, and it is regarded as an important component that determines students' satisfaction and achievements in online learning. This finding is consistent with earlier research that suggests self-evaluation is an important ability to acquire in order to be more happy in an online learning environment (Barnard et al., 2008; Ley & Young, 2001). Time management is also another critical strategy of self-regulated learning, with the results of the current study revealed that Malaysian students have a low level of time management. This finding is consistent with the finding of Umamah and Cahyono

(2020), where they found Indonesian students have poor time management skills. Poor time management could lead to failure in using SRL strategies as well as achieving goals. As previous studies suggested that time management has a substantial impact on students' satisfaction which is supported by the findings of some studies that found time management has a significant influence on learning factors (Song et al., 2004; Yukselturk & Bulut, 2007).

In addition, the findings of this study also revealed a significant interaction between level of education and nationality on SRL among the Indonesian and Malaysian students and Indonesian students are higher in SRL compared to Malaysian students. This result could be attributed due to Indonesian students are often supported by their families, so they have to commit themselves to their education. This is supported by a study conducted on Indonesian students by Ajisukmo and Vermunt (1999). In addition, Malaysian e-learning growth began in the pre-e-learning era, when the ministry of education established the educational technology division in 1972 (Goi & Ng, 2008), which is far earlier than Indonesian who started implementing student-centred e-learning in 2004 (Rahayu, 2019), and has been encouraged since 2011 with the issuance of the education minister's decree (Kwary & Fauzie, 2017). This could put more pressure on Indonesian students to adapt to e-learning and give more effort to succeed in online learning.

LIMITATIONS

This study has some limitations that should be highlighted. First, the sample of this study was recruited using a convenient sampling method due to the outbreak of the covid-19 pandemic, therefore, the results might not be generalizable or applicable to other samples. Future studies could consider studying SRL in both countries using a random sampling method. Second, a self-reported questionnaire was used in this research. Although self-report questionnaires are commonly used to evaluate learning strategies in higher education, they may not be very accurate due to self-reported instruments essentially ask respondents to provide their attitudes or feelings about the application of learning strategies and their impact on their learning performance. As a result, determining students' genuine attitudes or feelings about learning or the usage of learning tools can be challenging. Future studies should, however, collect the data using triangulation approaches such as interviews or observation to validate the findings. Furthermore, the current study did not examine how involved the students are in self-regulated learning practices throughout the course. As a result, future study could utilize an experimental design to better understand the extent to which self-regulated learning strategies are applied in online learning.

CONCLUSION

This study highlighted the SRL strategies that Indonesian and Malaysian students used to overcome the online learning challenges in Covid-19 pandemic, which might help educational institutions understand what support is needed to help students develop self-regulated learning skills in an online learning environment. The findings of this study revealed that students have a good self-regulated learning strategies that help them in

managing themselves in the online learning process independently. The findings also indicated that there is a significant interaction between level of education and nationality on SRL among Indonesian and Malaysian students. In addition, it was seen that postgraduate students are higher on SRL in comparison to students from high school, diploma and bachelor. Also, Indonesian students scored higher on the SRL scale compared to Malaysian students. In conclusion, results suggest that SRL is important for online learning context for which schools and universities should focus more on promoting SRL in the future.

ACKNOWLEDGMENT

The authors would like to thank all the participants who took part in this study and the examiners for the assistance in data collection.

COMPETING INTERESTS

The authors declare that there are no competing interests.

ETHICAL STANDARDS

All procedures used in this study adhere to the ethical criteria set forth by applicable national and institutional committees on human experimentation, as well as the Helsinki Declaration of 1975, as revised in 2008.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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