

## SELF-REGULATION IN THREE TYPES OF ONLINE INTERACTION: A STUDY AT A TEACHER PREPARATION PROGRAM AMIDST COVID-19 PANDEMIC

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**Abstract:** Having done the online learning mode for the conduct of teaching and learning activities for more than a year as the impact of Covid-19 pandemic, this article presents a report on how the students have managed their learning. Specifically, this present study was aimed to describe the three aspects of self-regulation in three types of online interaction: students' self-regulation in interaction between them and content; students' self-regulation in interaction between them and their teacher; and students' self-regulation in interaction between them and their peers. In addition, this present study also looked at the correlation between self-regulation and the students' academic performance and find out which aspect was significantly correlated with the academic performance. Involving 205 students of a teacher preparation program as the participants and used the Online Self-Regulated Questionnaire (OSRQ) to collect the data, it was found that the average mean score for the online interaction was above 5, suggesting that the students tended to agree with the statements in the three types of online interaction. The finding also revealed that a weak and positive, but not significant correlation existed between the students' self-regulation of online interaction and their academic achievement.

**Keywords:** *self-regulation, online interaction, EFL university students, Covid-19*

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### INTRODUCTION

The whole world has faced the pandemic caused by the novel coronavirus named Covid-19. World Health Organization or WHO (2020) has assessed that Covid-19 could be categorized as a pandemic due to its alarming levels of spread and severity, and inaction. WHO has also published advice on January 29<sup>th</sup>, 2020, on the use of masks in the community, during home care, and in health care settings. The Director-General of WHO (2020) has confirmed that Covid-19 was not just a public health crisis, but one that would touch every sector. This means that the educational sector has also experienced the impact of the pandemic. For example, the teaching and learning activities have significantly altered that a face-to-face interaction in which

teachers and students are together in the classroom is not recommended since it can become the medium of the spreading of the Covid-19 virus.

From the beginning of the pandemic Covid-19, WHO has made a call for the countries to take a whole-of-government, whole-of-society approach, built around a comprehensive strategy to prevent infections, save lives, and minimize the impact (WHO, 2020). In response to this call, the Indonesian government has answered it through the enactment of Decree No. 9 of April 3<sup>rd</sup>, 2020, by the Indonesian Ministry of Health on "Guidelines for the implementation of Social Distancing on a Large Scale for the Acceleration of the Covid-19 Management". As governed by this Decree, the social distancing on a large scale involves among others the closure of schools and workplaces and the conduct of working from home. Responding to these, the Indonesian Ministry of Education and Culture has shifted the face-to-face classroom interaction to online learning from home as governed by Letter No. 4/2020 published by the Indonesian Ministry of Education and Culture. Online learning is access to learning experiences that facilitate and enhance learning via the use of some technology such as personal computers, CD-ROMs, and the internet (Benson, 2002; Carliner, 2004; Conrad, 2002; Churton, 2006). Fry (2001) also specifically refers to online learning as the use of the internet and some other important technologies to develop materials for educational purposes, instructional delivery, and management of the program.

During the *Medan International Conference on Energy and Sustainability*, on October 27<sup>th</sup>, 2020, Nizam, the General Directorate of Higher Education of the Indonesian Ministry of Education and Culture, highlights the importance use of technology during the Covid-19 pandemic. He states the pandemic is a challenge in developing creativity in the use of technology, not only the transmission of knowledge but also how to ensure learning is conveyed properly (Hendayana, 2020). He further states that the learning challenge amidst the Covid-19 pandemic serves as an opportunity to use technology that can help students to be competent in this 21st century because one of the most important skills in the 21st century is *self-directed learning or independent learners* as an outcome of education (Hendayana, 2020).

In addition to self-directed learning, 21<sup>st</sup>-century skills also include self-regulation learning (Sylva, Sammons, & Melhuish, 2020) and this is the focus of this present study. Self-regulation learning is conceptualized by Zimmerman and Schunk (1989) as self-generated thoughts, feelings, and actions, which are systematically oriented toward the attainment of students' own goals. Jossberger et al (2010) argue that self-directed learning is situated at the macro level, meaning that it concerns a learning trajectory as a whole: a self-directed learner can decide what needs to be learned next and how his or her learning is best accomplished; while on the other hand, self-regulated learning occurs at the micro-level, concerning the processes within task execution. In other words, the emphasis of self-regulated learning is on students' independently accomplishing a learning task designed by the teacher (Jossberger et al. 2010; Saks & Leijen, 2014) which means during the learning process students monitor their behavior, motivation, and metacognitive skills and adapt them as necessary concerning the learning goal (Voskamp et al., 2020).

Being able to regulate one own's learning is viewed by educational psychologists and policymakers alike as the key to successful learning in school and beyond (Boekaerts, 1999). Self-regulated learners can set goals, plan a course of action, select appropriate strategies, self-monitor, and self-evaluate their learning (English &

Kitsantas, 2013). Self-regulated learners are also intrinsically motivated to learn and demonstrate high self-efficacy for learning and performance (Zimmerman & Kitsantas, 2005). Self-regulated learning is important for students in the online learning environments which allows for high levels of the students' autonomy and low levels of teacher presence (Lehmann et al., 2014). The profiles of the self-regulated learners are the important assets to support the students' learning in this current situation caused by the Covid-19 Pandemic which has globally urged educational institutions to adopt online learning mode to ensure the run of the teaching and learning activities.

Studies focusing on self-regulated learning, self-regulatory strategies, and self-regulated learning association with other variables such as motivation, self-efficacy, and learning achievement enrich the existing body of literature. For example, using a questionnaire assessing self-regulated learning and motivation of 130 English language learners studying at two language institutes, Mahmoodi, Kalantari, and Ghaslani (2014) reported that cognitive and metacognitive self-regulated learning strategies such as organizing and transforming, self-evaluation, keeping records and monitoring were mostly favored by Iranian English language learners. Besides, although there was a significant relationship between motivation and self-regulated learning, there was no significant relationship between self-regulated learning and L2 achievement (Mahmoodi et al., 2014). Next, in the study conducted by Jakesova, Kalenda, and Gavora (2015) whose respondents were university students of the Czech Republic, it was reported that with increasing age, the components of self-regulation *Goal Orientation* and *Decision-Making* also increased. Positive and negative correlations were also found between positive components of self-regulation (*Goal Orientation* and *Decision Making*) and between negative components of self-regulation (*Self-Direction* and *Control Impulsivity*), respectively.

To gain the empirical data concerning what the scholars have investigated in an Indonesian academic context, a careful search by using the combination of the keywords *Indonesia, university students, self-regulated learning, online learning, and Covid-19 pandemic* via google search engine has brought to the following previous studies focusing on the descriptions of self-regulation of undergraduate students of Bimbingan Konseling (Harap & Harahap, 2020), self-regulation in the Science learning of the pre-service teachers of the Elementary School Teacher education program (Atmojo, Muhtarom & Lukitoaji, 2020), self-regulation of the in the study of pre-service teachers of Mathematics education program (Jatisunda, Nahndi & Suciawati, 2020), self-regulation in terms of the use of Math software by the undergraduate students (Tanuwijaya, Ying & Suan, 2020), and self-regulation in the learning of the analytic Geometry of undergraduate students (Bilda & Fadillah, 2020).

Previous studies have also provided evidence that self-regulation played an important role in students' online learning, specifically amidst the Covid-19 pandemic. This present study reported an investigation on self-regulation of online learning of the English as a Foreign Language (EFL) pre-service students at a teacher preparation program in South Sumatera, Indonesia. Experiencing the impact of the Covid-19 pandemic, the university, which is one of the tertiary public higher educations in Indonesia, has made use of its online learning platform more intensively during the pandemic. The e-learning website of the university has been provided as the main platform for conducting the teaching and learning activities. For

example, the lecturers post the information about the course topics they are teaching through their account within the university e-learning website. The lecturers can also set up synchronous meetings where they can virtually meet the students face-to-face via *Big Blue Button*, which is the telecommunication platform provided within the university e-learning system.

All the learning activities (for examples, individual assignment, group work project, classroom discussion forum) are also posted in the university e-learning for the students to do by accessing the university e-learning platform using their own accounts. Managing their own learning to accomplish the assignments within the scheduled time limit set by the lecturers requires the students' self-regulated learning so they can independently accomplish the learning tasks.

Having done the online learning mode for the conduct of teaching and learning activities for a year, it is worth saying that now it is the time to have a closer look at how the students have managed their learning and this is the main objective of this proposed study. This present study identified these following research objectives as the focus of the investigation.

- 1) To identify the overall mean of the students' SR (Self-Regulation) in three types of online interaction: SR in interaction between student and content; SR in interaction between student and teacher; and SR in interaction between student and student.
- 2) To see the correlation between self-regulation and the students' academic performance and find out which aspect was significantly correlated with the academic performance.

## **METHODOLOGY**

### **Subjects**

This study was quantitative in nature with a survey design and the purpose was to map the students' self-regulation (SR) in three types of online interaction: Student-Content; Student-Teacher; and Student-Student. A total population sampling technique was applied to select the participants of the study. They were 205 of the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> semester students (Academic Year 2021) of the English Education Study Program within the Faculty of Teacher Training and Education of a state university in Indonesia. Specifically, there were 177 female and 28 male students who completed the Online Self-Regulated Questionnaire (OSRQ) which is a self-report survey developed by Cho and Cho (2017).

### **Data Collection and Analysis**

The OSRQ is a 30-item scaled tool which examines students' self-regulation (SR) in three types of online interaction: Student-Content; Student-Teacher; and Student-Student. The scale is a 7-point Likert-type scale, on which 1 means "Strongly Disagree" and 7 means "Strongly Agree". Next, the students' responses to the questionnaire were analyzed statistically. The internal consistency was examined using Cronbach's alpha for three components as well as the whole. Cronbach's alpha coefficients of the scale with three factors of interaction (i.e., Student-Content; Student-Teacher; and Student-Student) ranged from .890 to .920, and the reliability estimate of the whole scale was  $\alpha=.925$  (Table 1).

Table 1. Self-Regulation (SR) in three types of online interaction and their reliabilities

Types of interaction	Number of items (7-point Likert Scale)	Cronbach's alpha
SR in interaction between student and content	11	.900
SR in interaction between student and teacher	9	.890
SR in interaction between student and student	10	.920
SR in three types of online interaction	30	.925

The collected data from the questionnaire were analyzed statistically (frequency analysis) to provide the descriptions of the five domains measured by the questionnaire. Next, the data from the students' academic achievement, which were their GPA, were statistically correlated with the data gained from their responses to the questionnaire. For the purpose of this present study, only the GPA from the 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> semester students were correlated with their data from the questionnaire. The correlation analysis was not conducted with the data from the 1<sup>st</sup> semester students since they had not gained their GPA yet when this study was being conducted.

## FINDINGS AND DISCUSSION

The results of data analysis were presented accordingly based on the students' responses for SR in each type of online interaction. The responses of students' Self-Regulation of Learning (SRL) in each type of online interaction were presented in the following sections.

### *SR in Online Interaction between Student and Content*

The result of the descriptive statistical analysis for students' SR learning in online interaction between them and the content that the item with the highest mean score was about their intention to do their best to master the learning content in their study (M=6.05, SD=1.054), followed by the item referring to the students' statement about having a plan for their time to complete the assignments (M=5.95, SD=.1.088).

Table 2. Students' SR in interaction between student and content

No	Item statements	N	Mean	SD
1	Before starting an assignment, I plan out my work	205	5.55	1.091
2	I regularly check the course guidelines to be successful in this online course.	205	5.67	1.036
3	I monitor my own progress to make sure that I am on the right track in this online course.	205	5.67	1.055
4	I plan my time to complete assignments in this course.	205	5.95	1.088
5	Before starting a learning task, I try to understand the nature of the task.	205	5.63	1.088
6	I try to do my best to master the learning content in this course.	205	6.05	0.881
7	I regularly check this online course to keep up to date on learning tasks	205	5.91	1.054

No	Item statements	N	Mean	SD
8	I set up my own due dates for assignments so that I do not procrastinate	205	5.56	1.315
9	I frequently reflect upon what I learned in this online course.	205	5.39	0.957
10	I evaluate my assignments against evaluation criteria provided by the instructor	205	5.25	1.226
11	Before starting assignments, I check what I already know, what I do not know, and what I need to know.	205	5.55	1.165
	Total	205	5.66	1.175

The result of the data analysis showed that the item with the highest mean score was about the students' intention to do their best to master the learning content in their study. This suggests a sense of responsibility of the students as a learner in order to master the learning content in their study, regardless the level of difficulty of the learning materials. Carpenter and Pease (2013) assert that students must assume greater responsibility for their learning in order to attain deep understanding and transferable skills that benefit them throughout their lives. The finding of the study conducted by Whittle and Eaton (2001) also suggested that students will feel equipped to succeed in a learning system which places the onus on them to take responsibility for their own. The Learning Management System (LMS) provided by the university where the participants of this present study learn served as the main platform for conducting learning activities during the Covid-19 pandemic. Through this LMS the participants had to take control on their own learning. As Vaisanen et al. (2022) reported, a learning management system that is constructed to support students' self-regulated learning may both support the development of their self-regulation and guide their ability to learn independently as well as with their peers.

### ***SR in Online Interaction between Student and Teacher***

The students' responses regarding their SR in online interaction between them and their teacher showed that two items ("I do not hesitate to share my concerns about my progress with the instructor" and "If I need to, I explain my understanding about content to instructors as thoroughly as possible") had mean scores at 4.47 and 4.72, respectively. The students were somewhere between agreeing and disagreeing with the two statements, suggesting that they were at the position where they had to decide whether they really needed to talk to their lecturers about their learning and if they felt they needed to, they would proceed with the option, that was, talking to their lecturers.

Table 3. Students' SR in interaction between student and teacher

No	Item statements	N	Mean	SD
1	I ask the instructor questions if needed.	205	5.26	1.175
2	I seek assistance from the instructor if I need it	205	5.01	1.125
3	I ask my questions as clearly as possible for effective communication with the instructor.	205	5.21	1.222
4	I ask the instructor to clarify information if it is not clear to me	205	5.30	1.119

No	Item statements	N	Mean	SD
5	I ask the instructor to clarify learning materials if I get confused.	205	5.19	1.132
6	I do not hesitate to share concerns about my progress with the instructor	205	4.47	1.323
7	If I need to, I explain my understanding about content to the instructor as thoroughly as possible.	205	4.72	1.204
8	When unexpected situations arise that influence my participation or performance in this online course, I inform the instructor as soon as possible.	205	5.39	1.198
9	I express my opinions to the instructor in a respectful manner in this online course.	205	5.74	1.158
Total		205	5.11	0.892

The rest of the items had the means from 5.01 to 5.74, suggesting that the students agreed with the statements which meant that the students were able to regulate their online learning with respect to the interaction between them and their lecturer. For example, the students knew when they needed their lecturer to help them clarify things they still did not understand or when they experienced unexpected situation during their online learning that gave impact to their online participation and performance. This is a characteristic of adult learners who know when they can decide when they should inform and ask for their teachers or instructors' help. As Kilde (2022) reported, self-directedness and its development in learning processes of the adult learners in their study lead to higher levels of motivation and successful learning outcomes.

Previous studies also highlighted the importance of student-teacher interaction in the context of online teaching and learning. For example, Rautela, Sharma, and Virani (2022) reported that both educator-learner as well as learner-learner interactions are imperative for students' learning engagement in online teaching. Other researchers, Donlon et al. (2022), reported that design and organisation, facilitating discourse, and direct instruction were viewed as relevant and helpful for teaching in online settings. They also highlighted that overall, there was agreement about the importance of establishing a strong sense of teacher presence when teaching in synchronous videoconferencing environments such as Zoom.

### ***SR in Online Interaction between Student and Student***

The items in this domain required the students to describe their self-regulation in online interaction between students and students. The students' responses showed that the mean scores for all items were above 5, suggesting that the students' can regulate their interaction with their peers in terms of their online learning. For example, they know when they have to ask help from their classmates or provide constructive feedback to their peers during classroom's discussion. In other words, this kind of activity helps the students to engage in a constructive learning experience where they learn how to think deeply in order to give feedback to their peers while at the same time, they also receive feedback from their colleagues.

Table 4. Students' SR in interaction between student and student

No	Item statements	N	Mean	SD
1	I regularly interact with other students in this online course	205	6.00	1.069
2	I plan my participation in online interaction with other students in advance.	205	5.34	1.244
3	I attempt to help others online when given the opportunity	205	5.69	0.989
4	I would interact with other students even if it was not a course requirement.	205	5.56	1.238
5	I use different interaction skills in this course depending on the learning situations	205	5.33	1.008
6	I try to match other students' conversation style when participating in this online course	205	5.50	0.983
7	I provide constructive feedback to other students' contributions in a discussion.	205	5.28	1.092
8	I regularly check other students' messages on the discussion board.	205	5.64	1.082
9	I seek assistance from other students if I need it.	205	5.49	1.149
10	I respond to other students in a timely manner.	205	5.60	1.069
	Total	205	5.60	0.732

Student interaction in online learning is very necessary in order to increase student involvement in learning (Yulhendri et al., 2022) and it also directly affect social presence and learning engagement in online environments (Miao, Chang, & Ma, 2022). In the centre of the student-interaction in the online teaching, teachers are mainly the initiators of the online interaction (Liu, Zhang, & Zhao, 2022). Teachers play a very important role that they should encourage social interaction and collaborative learning among students to foster learning in an online learning environment (Lagat & Conception, 2022).

### ***Students' SR in Three Types of Online Interaction and Academic Achievement***

To determine the relationships between the students' self-regulation of online interaction and their academic achievement, statistical analysis was conducted. As described in the Methodology, only the GPA from the 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> semester students were correlated with their data from the questionnaire. The results of the correlation analysis showed the value of  $r = .104$  and  $p = .169$ .

Table 5. Correlation between students' SR in three types of online interaction and academic achievement

	Academic Achievement	
	Pearson Correlation	0.104
<b>SR in Online Learning</b>	Sig (2-tailed)	0.169
	N	175



The positive value of correlation coefficient between the students' self-regulation of online interaction and their academic achievement suggested a positive relationship, which meant that the more the students had the interaction in the three types of online interaction (student-teacher, student-peer, and student-material), the better their academic performance. However, the correlation was not significant. In other words, the students' self-regulation of online interaction positively influenced, but not significant towards the students' academic achievement. This finding was also reported in the authors' other publication (Ritonga et al., 2021) and other previous studies as well (e.g., Edi, 2016; Alafghani & Purwandari, 2019). Other factors such as teachers' support and learner self-efficacy jointly influenced learners' online self-regulated learning, in which self-efficacy has a significant direct effect on learners' online self-regulated learning (Zhou et al., 2022).

### CONCLUSION AND SUGGESTION

The findings of this present study are conformed with what was reported by previous studies that as a learning agent, students are expected to take responsibility and actively engage in their self-regulation of learning which are reflected in in these three types of interaction: between student and content, between student and teacher, and between student and student. In student and content interaction, students should engage in SR by taking responsibility for understanding their learning content and steering their learning process. SR in interaction between student and instructor refers to students' active efforts to interact with the instructor in online learning settings. In student and instructor interaction, students can ask the instructor questions or initiate communication about their concerns. If students do not actively interact with the instructor, the latter may not know what students want to do, what topics require additional explanation or support or what challenges they encounter. If instructors have very limited clues about students' needs, they can provide only very limited assistance. Interaction between student and student, which involves reciprocal action, for example, among individual students or members of small groups. In typical online learning, students introduce themselves on discussion boards, engage in formal or informal interaction through various technologies: class discussion forums, social media, email, asynchronous or synchronous chatting, video conferencing or audio conferencing. However, this study reported a weak and positive correlation between the students' self-regulation in the three online interactions; however, it was not significant. Further investigation can be conducted to see whether there are other factors that may significantly correlated with the students' online interaction within the context of the study as reported by previous studies.

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