



Examining the Effect of Self-Regulation and Psychological Capital on the Students' Academic Coping Strategies during the Covid-19 Pandemic

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The covid-19 pandemic has transformed the teaching and learning process from offline to online and it has challenged all stakeholders, teachers, students, and parents. One of the key variables that work in dealing with the challenge of online teaching and learning is known as the academic coping strategies (ACS). Some studies have confirmed that academic coping strategies positively contribute to students' learning outcomes and students' ability to deal with their academic pressure. Besides, other factors that influence the students' academic coping skills are the students' self-regulation and students' psychological capital. Therefore, the main aim of this research is to examine the correlation between (1) self-regulation and the academic coping strategies; (2) the self-regulation and psychological capital; (3) the psychological capital and the academic coping strategies; and (4) the self-regulation and the academic coping skills through the psychological capital. This research applied the correlational multifactor which took samples from 518 high school and vocational school students. The instruments employed in this research were a personal data information form, self-regulation scale, psychological capital scale for academic purposes, and academic coping strategies scale. The data were analyzed by using the path analysis in AMOS 23. This research revealed that self-regulation directly affects the students' academic coping strategies and psychological capital during online learning in a covid-19 pandemic. The pedagogical finding of this study can improve the quality of learning during the covid – 19 pandemics which is expected to be applicable not only in Indonesia but also in other countries, particularly in southeast

Keywords: self-regulation, psychological capital, academic coping strategies, online learning, pandemic Covid-19

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INTRODUCTION

The learning process during the Covid-19 pandemic has become one of the most important issues to discuss as reflected in myriad studies that addressed the same phenomenon (Irawan et al., 2020; Morgan & Jacobs, 2020). Those studies were aimed at solving problems experienced by learners and educators during distance learning by developing many learning strategies and methods, identifying the psychological condition of the teachers and students during this pandemic, and experimenting with various learning media that might be usable during this pandemic.

Problems encountered by learners during online learning are not only related to students' physical condition such as fatigue and exhaustion, (Oktawirawan, 2020; Allo, 2020) but they can also lead the students to some psychological issues such as experiencing insomnia, worrying too much about missed deadlines, which potentially lead the students to stress (Aryansah & Sari, 2021). Furthermore, learning stress can be defined as a certain condition in which the students experience physiological and psychological stresses caused by certain requirements given throughout the learning process such as working with tasks, attending online classes platforms that students are less familiar with, or some other pressures alike. Learning stress occurs because of some factors such as physical demands, task demands, role demands, and interpersonal demands (Beltrán-Velasco et al., 2019; Lazarevic & Bentz, 2021). Stress involves responses to the source of stress, hence any means of responding to stress are associated with the term coping. Given that situation, stress and coping often occur at the same time (Labrague et al., 2017).

Furthermore, coping strategies in learning simply refer to any abilities required to deal with academic demands. Managing stress with coping strategies can be helpful for students in dealing with both physical and psychological problems and challenges during the learning process. Mujahidah & Astuti (2019) define the coping strategy as a method that can be implemented in controlling any emerging phenomena deemed as problems and challenges. Therefore, students with a good coping strategy tend not to suffer from learning stress and vice versa (Pascoe et al., 2020).

In addition to that, some determinants are believed to potentially influence academic coping strategies. Evans & Kim (2013) and Bazzazian & Besharat (2012) explain that individuals who have good control over themselves tend to have good coping strategies. This variable is also known as self-regulation. While self-control itself simply refers to one's strategy to manage emotion and behavior related to environmental changes. Accordingly, it can be assumed that the more capable the individuals of controlling themselves are, the better their coping strategies will be, and vice versa. Students with high self-regulation will be strong not only in personal and emotional management but also in developing a positive social relationship with their environment and it supports lifelong learning (Kustyarini, 2020; Salleh et al., 2019)

In addition to self-regulation, another variable that tends to influence the coping strategy is psychological well-being (Rammohan et al., 2002; Sagone & Caroli, 2014). Psychological well-being can simply be construed as a condition in which a person has a

positive attitude towards themselves and others. Based on the given definition, it can be concluded that the higher a person's positive attitude towards themselves and others is, the higher his coping strategy tends to be.

Another aspect influencing somebody's positive attitude to themselves or others is the psychological capital (Liran & Miller, 2019; Sameer, 2018). Psychological capital refers to someone's ability to form their independence, optimism, hope, and tenacity to express their personal satisfaction externally and internally. Somebody with psychological capital tends to have good psychological well-being expressed through their positive attitudes like independence, optimism, hope, and positive confidence (Darvishmotevali & Ali, 2020; Liran & Miller, 2019; Sameer, 2018; Wang et al., 2018). Thus, it can be concluded that someone with independence, optimism, hope, and positive personal confidence tend to behave positively toward themselves and others.

Besides that, the study by Baloran (Baloran, 2020) showed that student's coping strategies during the Covid 19 pandemic tend to be different from before the pandemic. It is because there is an increase in the stress they experience related to the spread of the virus and the total change in the learning activities (from offline to online (Logel et al., 2021). Coping strategies in the Covid 19 pandemic are necessary because of the high stress due to lack of sleep, emotional support and mental, and social interest (Baloran, 2020; Logel et al., 2021; Nurunnabi et al., 2020).

Regarding this issue, there have been countless studies that discuss the correlation between self-regulation and the coping strategy, as well as the psychological capital and the coping strategy. However, studies that examine the relationship between self-regulation, psychological capital, and coping strategy often remain underdeveloped. Therefore, this research was aimed at filling the gaps between the three above-mentioned variables. Throughout this research, the links between the three mentioned variables are going to be examined. More particularly, this research focuses on examining whether or not the psychological capital influences the coping strategy through self-regulation, and whether or not the self-regulation affects the coping strategy through psychological capital. Additionally, this study also seeks to know which of the two variables (i.e., psychological capital or self-regulation) maintains more domination on the coping strategies.

METHOD

Research design

The research implemented the correlational multifactor which was aimed at finding some causal correlation between the independent and the dependent variables. Thus in this research, self-regulation, psychological capital, and academic coping strategies are carefully examined as the main variables.

Samples

The population of this research was a group of first and second-grade high school students in Sulawesi Selatan during the academic year 2019/2020. The samples were

collected using the proportional stratified random sampling in which parts of the population were identified based on similar characteristics (Bhardwaj, 2019).

Furthermore, the samples were generated through the following steps: (1) obtaining the number of high school students from each city and district in Sulawesi Selatan province; (2) from the data, the authors selected some cities and districts (i.e., Makassar, Maros, Bulukumba, Gowa, Bone, Pare-pare and Palopo); (3) among the selected cities and districts, the authors picked high schools that shared similar characteristics with the respondents. From there, the authors found out that there were 150,342 high school students in Sulawesi Selatan, which then were drawn using the Slovin's method (Susanti et al., 2019) with a probability value of .05. Finally, the authors ended up with 599 students; consisting of 280 females and 319 males. Their ages ranged from 16 to 18 (i.e., 201 of them attended the 1st grade; 196 attended the 2nd grade, and 202 attended the 3rd grade).

Instruments

1. Personal Data Questionnaire

A personal data form was specifically developed by the authors to collect some information on the samples' descriptive characteristics. The form included questions about their age, sex, grade, and academic achievements.

2. Adolescent Self-Regulation Inventory (ASRI)

Developed by Moilanen (Moilanen, 2007), ASRI was particularly designed to measure the adolescent's self-regulation, including the short-term and long-term regulation. It consists of 27 questions offering 5 possible options namely very appropriate, appropriate, doubtful, unsuitable, and utterly unsuitable. The results of the adaptation developed by the authors are presented in Table 1.

Table 1
The results of confirmatory factor analysis (CFA) on ASRI scale

Instrument	N	Reliability Test		Validity Test				
		McDonald's	Cronbach's	RMSEA	GFI	CMIN/DF	CFI	TLI
ASRI	518	0.844	0.829	0.079	0.983	695.521/351	0.972	0.893
ST		0.897	0.887					
LT		0.877	0.793					

McDonald > 0,60 (Reliable)
Cronbach alfa > 0.60 (Reliable)
RMSEA ≤ 0,08 (Accepted Model)
GFI (Goodness of Fit)= 0 (poor fit)- 1,0 (perfect fit)
CMIN/DF ≤ 2,0 (Accepted Model)
CFI ≥ 0,95 (Accepted Model)
TLI ≥ 0,95 (Very Good Fit)

ASRI instrument had been used in some earlier studies like Afshari et al, (Afshari et al., 2017) about long-term self-regulation as a mediator variable in academic achievement and the perceived role of the task. Besides that, the ASRI instrument was also used in the study conducted by (Yavuz & Yüksel, 2021) about the role of emotional regulation

in terms of the correlation between executive functions and self-regulated of skilled and unskilled students.

3. Psychological Capital Questionnaire

The psychological capital questionnaire in the academic context (PCQ-12) was developed by Martínez et al. (Martínez et al., 2019) who modified the PCQ that was originally created by Luthans et al. in the field of industrial psychology. The PCQ model was initially designed to measure the worker's well-being, behaviors, and work performance. Whereas in the academic context, the PCQ-12, developed by Martínez et al., was created to measure self-efficacy, hope, resilience, and optimism. The instrument consists of 24 items with 5 options namely highly appropriate, appropriate, doubtful, inappropriate, highly inappropriate. The components of self-efficacy were reflected in 6 items; hope was measured in 6 items; resilience was measured in 5 items with 1 reversed item; and optimism was measured in 4 items with 2 reversed items. The results are described in Table 2.

Table 2
The results of confirmatory factor analysis (CFA) on PCQ-12 scale

Instrument	N	Reliability Test		Validity Test				
		McDonald's	Cronbach's	RMSEA	GFI	CMIN/DF	CFI	TLI
PCQ	518	0.878	0.875	0.041	0.970	532.87/276	0.96	0.916
E		0.858	0.848					
H		0.870	0.863					
R		0.917	0.998					
O		0.811	0.799					

McDonald > 0,60 (Reliable)
Cronbach alfa > 0.60 (Reliable)
RMSEA ≤ 0,08 (Accepted Model)
GFI (Goodness of Fit)= 0 (poor fit)- 1,0 (perfect fit)
CMIN/DF ≤ 2,0 (Accepted Model)
CFI ≥ 0,95 (Accepted Model)
TLI ≥ 0,95 (Very Good Fit)

PCQ instrument had been applied in some previous studies like (Sanchez-Cardona et al., 2021) about the learning goal orientation and psychological capital among students: A pathway to academic satisfaction and performance. Besides that, it was also used in the study of (Martínez et al., 2019) about the Antecedents of academic performance of university students: Academic engagement and psychological capital resources, and (Zuberbühler et al., 2021) about the Development and validation of the coaching-based leadership scale and its relationship with psychological capital, work engagement, and performance.

4. Academic Coping Strategies Scale (ACSC).

The ACSC was developed by Sullivan (Sullivan, 2010) to measure students' strategies in solving problems or in dealing with their academic stress using the approach factor (AP), the avoidance factor (AV), and the social support factor (SP). The ACSC consists

of 56 questions offering 5 options namely always, usually, seldom, barely, and never. The approach factor consists of 23 items; the avoidance factor consists of 19 items; and the social support factor consists of 14 items. The results are reported in Table 3.

Table 3
Results of CFA test on ACSC scale

Instrument	N	Reliability Test		Validity Test				
		McDonald's	Cronbach's	RMSEA	GFI	CMIN/DF	CFI	TLI
ACSC	518	0.889	0.854	0.077	0.938	2548.63/1540	0.897	0.882
AP		0.881	0.878					
SP		0.892	0.891					
AV		0.816	0.812					

McDonald > 0,60 (Reliable)
Cronbach alfa > 0.60 (Reliable)
RMSEA ≤ 0,08 (Accepted Model)
GFI (Goodness of Fit)= 0 (poor fit)- 1,0 (perfect fit)
CMIN/DF ≤ 2,0 (Accepted Model)
CFI ≥ 0,95 (Accepted Model)
TLI ≥ 0,95 (Very Good Fit)

ACSC instrument was applied in various former studies like (Kirikkanat & Soyer, 2018) about the path analysis model pertinent to undergraduates' academic success: examining academic confidence, psychological capital, and academic coping factors. Besides that, the study of (Umar et al., 2021) about different academic coping strategies facing online learning during the covid-19 pandemic among the students in the counseling department also used it.

Based on the adaption of those three instruments, data were collected using google Forms completed with instructions to fill in the instruments. Before respondents filling in them, informed consent was given to ask about their readiness and to explain the confidentiality of their data which would be only used for the study purpose. The informed consent guarantees that all respondents filled in the instrument without any compulsion and they were sure about the security of their data.

Statistical Analysis

To examine the predictive role of self-regulation and psychological capital of students' ability to develop academic coping strategies, the authors performed the so-called path analysis. The path analysis is one of the structural equation models (SEM) that is observable using the SPSS AMOS 23 for Windows. The SEM refers to a statistical method utilized to comprehensively investigate the interrelationship among multiple variables (Thakkar, 2020). The processes include (1) the measurement model which covers the latent variables (theoretical factor) and the observed variables/indicators, and (2) the structural model which compresses the relationship among the latent variables (Thakkar, 2020).

The path analysis investigates both the direct and indirect hypothetical causal relationships among variables (Blunch, 2012). With the SEM analysis, the authors

examined the direct, indirect, and total interactions among variables. In this case, the psychological capital was made a moderator variable because it was deemed to have met the requirements of a moderator variable; i.e., (1) the direct path, in which the independent variables have some significant effects on the dependent variables (the dependent variable should be statistically significant); (2) the indirect path, in which the independent variables produce some indirect effects toward the dependent variables; and (3) the total effect, in which files of both the direct and indirect paths should be analyzed.

This research applied a two-step modeling approach which included the following processes: (1) a measurement model that was evaluated based on its sufficiency, and formed by an acceptable value from the conformity index (the level of suitability between the theoretical model and the research data); (2) then its structural model. Moreover, regarding the results of the self-regulation effect test, data of the psychological capital on students' ability to develop academic coping strategies by implementing the path analysis are presented in figure 1.



Figure 1
Path model with significant path coefficient

Table 4
Direct relationship between variables

Direct Relationship	Path Coefficient	Standard Error	R-Square (The Coefficient of Determination)	P-Value
Self-Regulation towards academic coping strategies	0,858	0,097	0,271	***
Self-Regulation towards Psychological Capital	0.679	0,049		***
Psychological Capital towards Academic Coping Strategies	0,225	0,074	0,24	**

*** = P-Value < 0,001
 ** = P-Value < 0,01
 * = P-Value < 0.05

To examine the direct effects of the self-regulation on the academic coping strategies, the authors applied a further test by applying the Sobel Test with the Equation Sobel Test model. It can be seen in Table 5.

Table 5

Indirect effects of the self-regulation on the academic coping skills in the Sobel Test

Indirect Relationship		Z Sobel	Criteria
Self-Regulation - Psychological Capital - Academic Coping strategies	0.071	2,87540366	Z sobel > 1,96 (Direct relationship is significant)

Sobel Test Equation: $z\text{-value} = a*b/\text{SQRT}(b^2*s_a^2 + a^2*s_b^2)$

FINDINGS

Hypothesis 1: The self-regulation positively and significantly affects students' ability in developing academic coping strategies

Based on the data set shown in Table 4, the self-regulation positively affects the students' ability to develop academic coping strategies with the path coefficient value of .850, SD = .097, R-Square = .271 and $p < .001$. The results of the analysis indicate that students who have good self-regulation ability also have good skills to develop coping strategies, particularly when dealing with the learning process during the Covid-19 pandemic.

Hypothesis 2: The self-regulation positively and significantly affects the students' psychological capital in the academic domain

Based on the information presented in Table 4, the self-regulation positively affects the students' psychological capital with the path coefficient value of .679, SD = .049, R-Square = .271 and $p < .001$. The results of this analysis indicate that students' who have good self-regulation ability also have good psychological capital in the academic domain, especially when it comes to the learning process during the pandemic.

Hypothesis 3: The psychological capital positively affects the students' ability to develop academic coping strategies

Referring to the information provided in Table 4, it can be seen that the psychological capital positively affects the students' ability to develop academic coping strategies with the path coefficient value of .225, SD = .074, R-Square = .24 and $p < .01$. The results of this investigation indicate that students who have high academic psychological capital also have excellent ability to develop coping strategies, particularly when experiencing the learning processes in the midst of the Covid-19 pandemic.

Hypothesis 4: The self-regulation has some indirect positive effects on the students' ability to develop academic coping strategies through the psychological capital

As informed in Table 5, the self-regulation ability has some indirect positive effects on the students' ability to develop academic coping strategies through the psychological capital as seen from the Z Sobel value at 2.87. The results of this investigation indicate that the higher the students' self-regulation ability is, the better their ability to develop academic coping strategies gets through the enhancement of the psychological capital.

Besides, other possible efforts to develop academic coping strategies can be made by developing the students' psychological capital in the academic area.

As informed in Table 5, the correlation between self-regulation and the academic coping strategies has bigger path coefficients (coef. = .858) compared to the path coefficient between the psychological capital and the academic coping strategy (coef = .225). Accordingly, it can be concluded that developing academic coping strategies along with self-regulation is much more effective than developing self-regulation through psychological capital.

DISCUSSION

The academic coping strategy variable has been proven effective in providing positive effects on the enhancement of the learning achievement in both university (Britt et al., 2016; Gustems-Carnicer et al., 2019; Perera et al., 2015); and high school levels (Amemiya & Wang, 2018). Additionally, the academic coping strategy also becomes the key variable to lower, minimize, and tolerate the stress level experienced by many individuals (Gustems-Carnicer et al., 2019), and to avoid low academic achievements (Boon, 2011), also to improve mindfulness on the learning process (Skelly & Chichon, 2021). Academic achievements are able to help learners endure adversity and well-being (Fomina et al., 2020) because they have set both short-term and long-term objectives (Wrosch & Scheier, 2020). Both the short-term and long-term objectives that the learners have set can motivate them to be more optimistic and encourage them to achieve all of those objectives (Hernawati & Eriany, 2020; Wrosch & Scheier, 2020).

Another finding of this research informs us that the psychological capital positively and significantly influences the academic coping strategy. According to the psychological capital questionnaire (PCQ), it is exposed that positive attitudes such as optimism, hope, resilience, and self-efficacy (Luthans et al., 2007) positively contribute to students' motivation in solving their academic demands (Fomina et al., 2020). Therefore, it positively contributes to students' ability to develop a set of strategies when dealing with their academic demands (problem-focused coping) (Kirikkanat & Soyer, 2018; Ødegård, 2019), and their ability to demonstrate positive values toward any unwanted or undesired events (emotional-focused coping) (Hsieh et al., 2012; Sullivan, 2010). Also, positive attitudes such as self-efficacy, optimism, and hope have some effects, however, they are not significant enough to help students cope with their academic demands. Therefore, self-regulation is required to solve problems.

The last finding of this research reveals that the self-regulation insignificantly affects the academic coping strategies through the psychological capital. The results expose that students with high self-regulation have decent positive attitudes. It is in line with the claim saying that positive attitudes can help students deal with their academic demands (Kirikkanat & Soyer, 2018). Students with high self-regulation positively promote good academic achievement (Bahri et al., 2020; Zetriuslita et al., 2020). Furthermore, it is also found that students with high self-regulation potentially have good academic coping strategies because students whose great self-regulation ability are able to control themselves properly when trying to achieve their short-term and long-term objectives (Baumeister & Vohs, 2018; Sullivan, 2010). It can be detected by looking at students'

ability to independently plan their objectives, including their ability to develop problem-solving skills related to the academic domain (Khan et al., 2016). Moreover, it is also revealed that the components of the psychological capital such as optimism, hope, self-efficacy, and resilience are insufficient unless they are supported with self-regulation and self-orientation abilities. Besides, the self-regulation has more significant direct impacts on the academic coping strategies because students whose good self-regulation can properly recognize their strengths and weaknesses so that they turn to be more skillful in terms of self-evaluation and self-improvement strategies; all of which will be so helpful to accommodate their academic demands.

CONCLUSION

Based on the findings and discussion attributed to the study purposes, it can be deduced that: 1) the self-regulation directly affects the students' academic coping skills during the Covid-19 pandemic. The self-regulation is related to students' abilities to control their thoughts, feelings, and behaviors. Thus students whose good self-regulation are able to develop great skills to adapt and survive the learning difficulties throughout the Covid-19 pandemic. 2) The self-Regulation has direct effects on the students' psychological capital. Students whose good self-regulation manage to develop some independent behaviors. These independent behaviors subsequently promote a number of affective elements such as feelings of enthusiasm, optimism, self-efficacy, and endurance to withstand the challenges of online learning throughout the Covid-19 pandemic; 3) the psychological capital has direct effects on students' academic coping strategies. Positive attitudes in the psychological capital component positively contribute to students' ability to develop strategies for solving their academic predicaments during the Covid-19 pandemic. In this case, they implemented the problem-focused coping and emotional-focused; 4) The self-Regulation indirectly influences the students' academic coping strategies through the psychological well-being. The students' self-regulatory capacity is characterized by their ability to manage and direct themselves to achieve their projected short-term and long-term goals, thus encouraging themselves to solve their own academic issues, especially during the Covid-19 pandemic. Although the SRL has indirect effects on the ACSC through the PCQ, the components of psychological capital variables such as optimism, hope, self-efficacy, and resilience are not adequate without self-management and self-direction.

This study was limited only to the correlation of three variables including self-regulation, psychological capital, and academic coping strategies. Other variables like gender, sociodemography, and culture also influence the students' academic coping strategies. Therefore, further studies should investigate the three variables evaluated in the current study and correlate them with other variables like gender, culture, and sociodemography considering that Indonesia is a multicultural country so that there should be more respondents from different tribes and provinces in Indonesia involved

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