

## Enhancing Self-Regulation through the Growth Mindset Stimulation

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**Abstract.** Self-regulation is highly needed during pandemics learning. It supports students with appropriate actions, thoughts, and feelings in learning. Embedding self-regulation in the class will anticipate the learning loss. The objective of this research is to enhance self-regulation through growth mindset stimulation specifically through the implementation of an e-module. This research is applying a research & development method. The research was conducted with samples of 126 students from the 7<sup>th</sup> grade of junior high school. Students mindset were measured with mindset checkup (Brainology), while student's self-regulation was identified based on the Learning and Study Strategies Inventory (LASSI) test. The result of the study shows that the stimulation given from the growth mindset is effective to enhance self-regulation. Students' attitude toward their learning is improving due to the growth mindset stimulation.

Keywords: self-regulation, growth mindset, research and development, pandemic COVID-19

### 1 Introduction

Pandemic COVID-19 has officially affected learning around the world. Students are demanded to be independent learners during distance learning, which eventually fosters the need of having self-regulation. Self-regulation is definitely one of the prime factors that support students within distance learning. Students with low skills in self-regulation will encounter problems in learning, for instance, late assignment submission, low motivation, and procrastination.

The ability to regulate cognitive, affective and learning behaviour is called self-regulation. Self-regulation is a process that assists students in managing their thoughts, behaviours, and emotions in order to successfully navigate their learning experiences. This process occurs when a student's purposeful actions and processes are directed toward the acquisition of information or skills (Zumbrunn, Tadlock, Roberts, 2011). Exposing self-regulation in the learning process can promote students activeness and responsibility for their learning. It happens because students set goals for themselves, and are determined to monitor their learning process and progress.

Further research from Mrazek et al. (2018) suggests that fostering self-regulation needs to be initiated by acquiring a proper mindset. Students' beliefs about their academic capabilities is an essential role that driving achievements in learning. The students' beliefs about themselves, their feelings about success, or their habits of self-regulate are essential to improve the students' academic performance. According to Dweck (2006), there are two mindsets that drive learners' motivation: fixed mindset and growth mindset. The fixed mindset believes that the basic qualities, such as intelligence or talent, are simply fixed traits. Fixed mindset people spend their time documenting their intelligence or talent instead of developing them. They also believe that talent alone creates success without effort. Fixed mindset considers effort in a negative light where effort indicates low ability or competence.

Consequently, competent people do not need to display high levels of effort. Meanwhile, in a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work and talent are just the starting point. This view creates a love of learning and resilience that

is essential for great accomplishment. According to the growth mindset, effort is seen as a virtue that helps people to develop their competence. Those with growth mindset perceive high levels of effort as an indication that they can enhance their ability (Mrazek et al., 2018).

Instilling growth mindset in the classroom practice is considered significant to enhance self-regulation skills. There are many benefits gained from installing growth mindset in the classroom. It increases student's resilience, motivation, and learning strategy. Kiger (2017) elaborates research on growth mindset in the classroom, where growth mindset is believed as a great stimulus to improve student problem solving and peer cooperation skills. Growth mindset also triggers motivation and learning-oriented attitude leading to successful achievement. Students with a growth mindset tend to adopt a mastery orientation when approaching academic tasks (Dweck & Leggett, 1988).

Utilizing technology i.e., e-module to instill a growth mindset is promoted in this research. Technology is the potential tool to facilitate instruction in ways that formerly were unimaginable. During Pandemic COVID-19, technology becomes more common at schools, thus mastering digital literacy becomes crucial (Schunk, 2012). The development of digital literacy through e-module provides various forms of learning, and enriches content resources and the learning environment. It leads to better and deeper learning. Recently, schools use digital media innovatively. Teachers are empowered to be confident and skillful to work with digitalized instructional. A digital culture for learning will enhance communication skills, as well as the ability to think critically and creative problem-solving: a culture of sharing (Søby, 2015).

This research highlights on the potential strategy to enhance self-regulation through growth mindset stimulation. The stimulation itself elaborates the uses of e-module as digital literacy to install students with proper mindset that eventually drive the students to have better self-regulation in the class.

## 2 Method

Research and Development (R & D) method with 4D model, i.e., Define, Design, Development, and Dissemination is conducted. Research and development is done to create new products, i.e. thematic modules that are tested. Questionnaires are applied in this research as the data collection technique. The data collected from the questionnaire is then analyzed quantitatively using a percentage.

### 2.1 Participants

The research takes place in Regina Pacis Junior High School in Surakarta. The data are collected from the 7th grade with the total number of students is 126. This research is focusing only on the 7th grade students considering that students need to possess bigger effort to make positive adjustments i.e. self-regulation skill and growth mindset to their new school, so that learning can be effective. Improving academic success across the transition to junior high school is essential. Social– psychological interventions, which change how adolescents think or feel about themselves and their schoolwork and thereby encourage students to take advantage of learning opportunities in school need to be emphasized (Walton & Wilson, 2018).

### 2.2 Data Collections and Instruments

There are some instruments used to collect data: 1) questionnaire on student strategies to manage their learning (indicating self-regulation) 2); validation sheet on students' mindset (Brainology); 3) interview result.

The study begins with the distribution of a sample questionnaire to 126 students. This study aims to discover students' learning practices, assess their mentality, and determine their impact on learning. The Learning and Study Strategies Inventory (LASSI) is applied to identify self-regulation quality. The LASSI is an example of a diagnostic tool for identifying strengths and deficiencies in students' cognitive, behavioral, and attitude approaches to their studies. There are 8 strategies acknowledged in self-regulation, which are goal setting, planning, self-motivation, attention control, flexible use of strategies, self-evaluation, help-seeking, self-monitoring.

Moreover, Mentality Works, Inc., [www.mindsetworks.com](http://www.mindsetworks.com), is the source of the mindset quiz. It includes determining whether you have a fixed mindset, a growth mindset, or a mixed mindset.

### 3 Result and Discussions

This part exhibits the result of the students’ mindset and their self-regulation skills in managing their learning strategies. Based on the Mindset check-up, 57 % students were categorized as mixed mindsets as shown in table 1.

Table 1: Students’ Mindset

	<i>Mindset</i>		
	<i>Growth Mindset</i>	<i>Fixed Mindset</i>	<i>Mixed Mindset</i>
SMP RP	40%	3%	57%

The student’s mindset apparently affects their strategy in regulating their learning. Having more students who are dominantly mixed mindsets, it influences the way the students control and monitor their learning. As a result, they lack of discipline and less motivation to learn.

The Learning and Study Strategies Inventory (LASSI) identified the student’s low quality in regulating their learning. Table 2 identifies the low strategies of self-regulation skill in attitude scale, motivation scale, anxiety scale, and concentration scale.

Table 2: The Lowest LASSI Result

<b>Categorization</b>	<b>Indicators</b>	<b>Score</b>
Attitude	I only study the subjects that I’m interested on.	75
Motivation	I tend to work on the easy part only whenever I have difficult tasks	64
Anxiety	I tend to feel nervous and afraid to fail whenever I work on a test	62
Anxiety	Whenever I do a test, I often feel worried that I couldn’t pass my test	71
Concentration	I concentrate fully when studying that I ignore others or my surrounding	75

The results of mindset check-up and LASSI test reveals the need for enhancing self-regulation through firstly infusing a proper mindset. Managing appropriate mindsets determine the success of students’ skill in regulating their learning. Mindset and skill are interconnected to promote long-term learning and to support academic tenacity (Dweck, Walton, Cohen, 2014). Further, a research study from Mrazek, Ihm, Molden, & Mrazek M. (2018) confirms that expanding minds through growth mindset influences self-regulation.

Students with growth mindset show stronger effort and perseverance during their learning process that eventually they become more successful in learning. Table 3 confirms that students with growth mindset set their orientation in learning goals, not in performance goals. Therefore, they could manage themselves through challenges and obstacles.

Tabel 3: Goals Orientation

<i>Theory of intelligence</i>	<i>Goal preference</i>	<i>Perceived Ability</i>	<i>Response Style</i>
<i>Entity (fixed mindset)</i>	<i>Performance</i>	<i>High</i>	<i>Mastery</i>
		<i>Low</i>	<i>Helpless</i>
<i>Incremental (growth mindset)</i>	<i>Learning</i>	<i>High</i>	<i>Mastery</i>

Infusing growth mindset empowers students to be successful independent learners who are highly motivated in building distinctive patterns of learning and self-organization in managing their learning. In this research, the growth mindset stimulation to enhance self-regulation is promoted with an e-module. The e-module is developed with 4D models (Define, Design, Develop, Disseminate). The e-module focuses on the exposure of growth mindset to build students’ awareness in displaying growth

mindset in their daily performance. The materials and activities in the e-module are designed interactively that it enables the students to step-by-step display growth mindset and self-regulation.

The strength point of the e-module is the interactive communication between student (user) and teacher. The structured materials, the proper language used for the audience, the reflective tasks, and the tool that is user-friendly were managed properly in the e-module designed. The e-module validation was carried out by experts to measure the product eligibility before implementing it in the learning.

At the end of the research, the students embedded growth mindset so they could display progress in their self-regulation. Indicators of the students' progress in self-regulation is accordance to self-regulation phase as shown by figure 1.

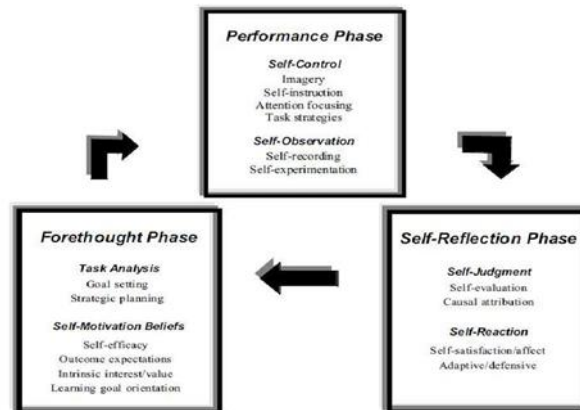


Figure 1: Self-regulation phase

#### 4 Conclusion

Pandemic learning requires self-regulation as the framework. Self-regulation leads students to be independent learners, and manage their learning properly to have academic success. Enhancing self-regulation during online learning is a contextual need that must be fulfilled. In this view, an appropriate mindset is a key component to building a good learning strategy (self-regulation). Growth mindset drives students to have persistence, courage, and enthusiasm in learning. Therefore, embedding growth mindset stimulation with the application of an e-module is suggested in this research. Growth mindset stimulation needs to be exposed regularly in a form of interactive teaching aid. Consequently, the awareness to be progressive emerges. Having growth mindset stimulation, it enhances the self-regulation skill.

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