

## Effectiveness of Group Guidance on Growth Mindset for Improving Students' Effort Regulation

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### Abstract

The issue of effort regulation among students has negative implications for academic conditions such as declining achievement, anxiety, and stress, necessitating intervention strategies to strengthen effort regulation. Therefore, this study aimed to enhance effort regulation through a growth mindset intervention using an experimental design. Purposive sampling was employed to select 20 students exhibiting low levels of effort regulation. Data collection utilized scales for a growth mindset and effort regulation. The results indicate the effectiveness of group guidance on growth mindset for improving effort regulation in the experimental group compared to the control group. Measurement (time) has an observed effect on enhancing effort regulation. This study clarifies the effectiveness of group guidance on a growth mindset for enhancing effort regulation.

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## INTRODUCTION

The academic demands placed on students often lead to concerns about their ability to cope with such conditions. Some students navigate these challenging situations, while others struggle to do so. Students need resilience to prevent a decline in academic performance due to these pressures.

Those who effectively employ self-regulation strategies during their studies achieve better academic outcomes. Conversely, poor self-regulation can limit their academic success. Self-regulation in learning is a crucial construct in educational psychology. It involves individuals' efforts to control their observable behaviors. Self-regulation in learning has emerged as a significant research area, shedding light on academic success, as it influences motivation, emotions, strategy selection, and effort management, leading to increased self-efficacy and improved academic performance.

Zimmerman (2012) states that individuals choose, organize, and create balanced social and physical environments to optimize their achievements in various activities. One strategy for regulating behavior is effort regulation, which refers to an individual's effort to maintain learning motivation.

According to Pressley et al. (1990) and Weinstein and Mayer Weiner (2003), effort regulation involves learners' ability to control their effort and attention in the face of distractions and uninteresting tasks. Effort regulation is a form of self-management and reflects a commitment to achieving goals despite difficulties and distractions. It is crucial

for academic success as it signifies commitment to targets and ensures continuous use of learning strategies.

Bandura, as explained by Zimmerman (2012), asserts that behavior is an aspect of the person, although not the internal "self" represented by cognition, motivation, and affection. However, individuals can observe, monitor, and attempt to control and regulate their behavior, which is generally considered self-regulatory. Behavior regulation encompasses effort regulation, time and study environment regulation, and help-seeking.

Students must have a positive outlook on their efforts to achieve their learning goals. Students with confidence in their abilities can develop a positive learning attitude. This positive perspective on effort is reflected in one's mindset. There are two types of mindsets: fixed mindset and growth mindset. A fixed mindset is the belief that human traits are static and unchangeable, whereas a growth mindset is the belief that human traits can be developed and substantially changed (Bernecker & Job, 2019).

Yeager and Dweck (2012) conducted additional studies suggesting that students require a mindset that sees challenges as opportunities to be tackled and overcome through hard work, adopting new approaches, gaining knowledge, seeking help from others, and being patient. Likewise, having a growth mindset encourages a favorable outlook toward difficulties, ultimately strengthening one's ability to bounce back.

A psychological strategy introduces a growth mindset intervention to change students' perspectives. By concentrating on changing a core concept, this intervention can be implemented effectively with fewer resources and is not reliant on any particular curriculum or educational setting. The growth mindset intervention emphasizes that pupils' hard work in taking on challenging activities can bend intelligence. Pupils are taught that challenges and hardships are not signs of weakness but chances for personal development. Previous studies have indicated that this message enhances students' performance and grades (Wahidah et al., 2019).

The use of a growth mindset has the potential to enhance academic progress by attending to students' needs throughout the learning process. In a group context, instruction on cultivating a growth mindset provides students with long-lasting and methodical coping strategies for managing stress, eventually improving learning outcomes (Ayers, 2015).

Students with a growth mindset and who exert additional effort are frequently rewarded with success, strengthening their confidence in their ability to improve and succeed (Master, 2015). This optimistic belief enables individuals to perceive challenges as opportunities for personal growth, demonstrating that individuals with a growth mindset exhibit notable resilience. Resilient people tend to view mistakes or failures as opportunities for learning (Brooks & Goldstein, 2004).

This study aims to analyze the effectiveness of group guidance on a growth mindset in improving effort regulation. Specifically, this study tests six hypotheses by (1) Analyzing the effectiveness of group guidance on growth mindset for enhancing effort regulation, (2) Analyzing the differences in the improvement of effort regulation between the experimental group and the control group before and after the intervention; (3) Analyzing the interaction effects of time and group on effort regulation.

## METHODS

This study's population consisted of 256 seventh-grade students from SMP Negeri 40 Semarang. The sampling technique used was purposive sampling, involving 20 students divided into two groups: the experimental and control groups.

The instruments used in this study included the growth mindset scale and the effort regulation scale. The effort regulation scale comprised 27 statements with four answer choices. Reliability testing utilized Cronbach's Alpha formula, yielding an Alpha value of 0.62 for effort regulation.

The data analysis technique employed in this study was multiple regression. The study applied a Switching Replication Design. This design provided the control group with the treatment after the experimental group was measured post-treatment. The experimental group received the treatment in the first phase, while the control group did not. In the second phase, the control group switched roles

to become the experimental group receiving the treatment, and the original experimental group switched to the control group without the treatment. The design included a control group that did not receive treatment, with the same pre-treatment and post-treatment samples, accompanied by replication of the treatment in the control group.

The subjects were randomly assigned to Group A as the experimental group and Group B as the control group. The experimental group received a pretest and a posttest after undergoing the growth mindset treatment. The control group received a pretest and a posttest without the treatment. After the posttest, the control group received the growth mindset treatment.

## RESULTS AND DISCUSSION

The pretest data obtained through the effort regulation scale revealed an average score of 63.20 for the experimental group, while the control group scored 64.80. After the intervention of group guidance on growth mindset, the posttest effort regulation scores were 69.30 for the experimental group and 64.80 for the control group. Following the follow-up measurement, the effort regulation score for the experimental group was 73.20, whereas the control group scored 68.20.

This study conducted a hypothesis test using repeated measures mixed MANOVA in SPSS (Statistical et al.) version 25.0 for Windows. The test result is presented in the following table.

Table 1. Mixed Manova Analysis Result

Effort Regulation			
Effect	F	df	p

Time	29.47	2.36	<0.01
Group	6.85	1.18	<0.01
Time*group	8.84	2.36	<0.01

Based on Table 1, it can be seen that there is an effect of the group guidance intervention on growth mindset for improving effort regulation, as indicated by ( $F(1, 18) = 6.85, p < 0.01$ ). This demonstrates the intervention's effectiveness in enhancing effort regulation. The measurement effect (time) on improving effort regulation is also evident from ( $F(2, 24) = 29.47, p < 0.01$ ), indicating a significant impact of time on effort regulation.

Additionally, the mixed MANOVA analysis results show an interaction effect between the group guidance intervention on growth mindset and the measurement (time) on improving effort regulation, as seen from ( $F(2, 36) = 8.84, p < 0.01$ ). This confirms the interaction effect between the intervention and time on enhancing effort regulation.

According to Table 2, the results of testing the time effect on effort regulation show an increase in effort regulation between T1 and T2 ( $MD = -3.050, p > 0.01$ ), between T1 and T3 ( $MD = -6.700, p < 0.01$ ), and between T2 and T3 ( $MD = -3.650, p > 0.01$ ). Therefore, it can be concluded that the effect of the group guidance intervention on the growth mindset for improving effort regulation is permanent or sustained over the follow-up period.

Table 2. Pairwise Comparison Results

Time	MD	SE	p
Effort Regulation			
T1-T2	-3.050	.736	> 0.01
T1-T3	-6.700	1.031	< 0.01
T2-T3	-3.650	.829	> 0.01

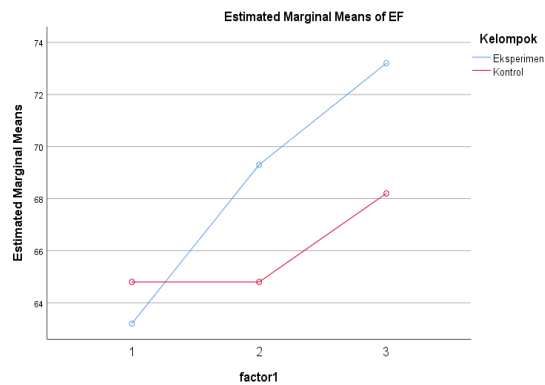


Figure 1. Plot Diagram of Experimental and Control Groups in Improving Effort Regulation

Based on Figure 1, the interaction pattern between group guidance intervention, growth mindset, and measurement (time) is evident from comparing effort regulation levels in the experimental and control groups. The experimental group's effort regulation levels were higher than the control group's, particularly at T2 and T3.

This indicates that the experimental group benefited most significantly in terms of increased effort regulation at T2 and T3 compared to the control group. Considering the group effect, the measurement (time) effect, and the interaction effect between the group guidance on growth mindset and the measurement (time) on effort regulation, it is evident that the group guidance on growth mindset is practical and beneficial in enhancing students' effort regulation.

## DISCUSSION

This study aimed to determine the effectiveness of group guidance on a growth mindset for improving effort regulation. Overall, the results indicate that growth mindset counseling effectively enhances effort regulation.

The growth mindset concept can improve academic progress, as students' needs are met when learning practices incorporate growth mindset principles. Group guidance on a growth mindset provides students with long-term and consistent methods to manage stress, enhancing learning (Ayers, 2015).

The growth mindset intervention conducted by Paunesku et al. (2015) with high school students in the US demonstrated its impact on changing students' beliefs about learning tasks. Students perceived these tasks as valuable for learning and development. Additionally, they learned that the human brain, like a muscle, grows and strengthens with continuous practice. For students at high risk of dropping out (those with a GPA of 2.0 or below or failing one or more core subjects), the growth mindset intervention significantly improved their grades. This study demonstrates that a growth mindset can be learned to change students' beliefs, particularly among those with low academic achievement (Rattan et al., 2015).

In implementing character education, there is a need for a growth mindset or a developing mindset in shaping children's character. A mindset essentially encompasses a set of beliefs or a way of thinking that influences one's behavior and attitude, ultimately determining one's life success. Focusing on development and thinking about challenges and efforts, individuals with a growth mindset exhibit several characteristics: they believe that intelligence, talents, and traits can be developed through effort; they are willing

to accept challenges and exert sincere efforts; they maintain a positive outlook when facing failure and toward effort regulation; they do not give up easily; and they are prepared to face challenges to create something better. Yeager and Dweck (2012) found that a growth mindset fosters stability and strength.

Furthermore, this research addresses recommendations from Blau et al. (2020) and Kauffman (2015), which emphasize the emerging demands for increased self-control and effort among students, as well as the need for educators to find appropriate methods to assist students in the learning process (Cho & Jonassen, 2009; Kizilcec & Halawa, 2015; Mullen & Tallent-Runnels, 2006; Wong et al., 2019). Research on growth mindset asserts that mindset can influence students' perceptions of the extent of effort required (Mrazek et al., 2018). Therefore, this study will discuss the influence of a growth mindset, including self-regulated learning abilities encompassing effort regulation and teacher characteristics such as scaffolding abilities that affect the learning process, especially in distance learning contexts.

Based on previous research findings, issues related to effort regulation and academic resilience among students remain prevalent in schools today, necessitating special attention, particularly from school counselors. Students' varying levels of effort regulation and academic resilience are closely linked to their academic outcomes. Effort regulation and academic resilience have produced favorable outcomes and substantial consequences for enhancing academic

success. Research also suggests that students' motivation impacts their school presence, completion of school assignments, and involvement, ultimately decreasing dropout rates and improving academic achievement (Servet & Çelik, 2021).

Interventions focus on growth mindset and seek to alter students' mindsets. These interventions address a fundamental belief and can be quickly implemented using concise materials independent of specific content or school environments. By highlighting that intelligence can be developed through effort, these interventions communicate to students that challenges and difficulties offer growth opportunities rather than signs of inability. Past studies have shown that such teaching assists students in enhancing their grades and accomplishments.

## CONCLUSION

The study suggests that group guidance intervention substantially promotes a growth mindset to improve student effort regulation. Additionally, evidence indicates that the passage of time also enhances effort regulation among students. Furthermore, there is an observed interaction effect between group guidance intervention and the passage of time in enhancing student effort regulation.

The research findings suggest that it would benefit school counselors and educators to create group training programs focused on a growth mindset to tackle issues related to students' struggles with regulating their efforts. These findings can be used as a reference point

for future researchers who aim to address the limitations identified in this study. It is important to note that this study specifically targeted 7th-grade students in junior high school (SMP) with gender diversity, and outcomes may vary in similar studies involving higher educational levels, such as senior high school (SMA) students.

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