

Empowering Teacher in the Era of Information Technology through Self-Regulation Strategy

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ABSTRACT

The pandemic has significantly transformed education, particularly in the realm of learning technology. Teachers now face the challenge of preparing lesson materials and innovating to keep pace with rapidly evolving technology while also managing student characteristics, parental expectations, and school responsibilities. The advancement of technology provides teachers with access to a wealth of information, necessitating the need to sift through and utilize accurate data to achieve educational goals. To support teachers in adapting to these changes and improving their teaching performance, this research explores the effectiveness of a self-regulation program using Mental Contrasting with Implementation Intention (MCII). The MCII program, which includes 10 items divided into three parts, was implemented with five kindergarten teachers each with over two years of experience. Evaluation data collected through descriptive qualitative analysis revealed that the program helped participants redefine their roles as educators and effectively address challenges. The study underscores the potential of self-regulation strategies in enhancing teaching practices and addressing educational challenges.

Keywords: Empowering teacher, self-regulation, self-reflection, information technology, learning technology.

1. INTRODUCTION

Faturrahman (2012) states that the function of education is the root in developing abilities and forming dignified character and national civilization in order to educate the nation's life. Education is important for everyone. One place of education that is widely used is the school. The educational process as a process of individual interaction with the social and physical environment is described as the interaction between teachers and students. Even though it takes place interactively, many determinants in the educational process are held by teachers because teachers are considered to understand and have experience in carrying out the educational process in various patterns (Kadir, 2016).

According to Peters (1963), there are three duties and responsibilities of the teacher; teacher teaches the lesson, teacher plans and implements teaching and teacher is required to have a set of knowledge and technical teaching skills. The teacher as a guide, namely the teacher provides assistance to students in solving the problems they face. According to Sudjana (2011), the task of a supervisor is an educational aspect, because it is not only related to the delivery of knowledge, but also involves the development of personality and the formation of student values. The teacher as class administrator, the teacher must have documentaries skills and orderly administration. In its development, teachers are required to be able to develop teaching materials in accordance with current developments and be able to innovate following increasingly rapid technological changes. Current technological developments open up a lot of access to information for teachers which influences the learning process provided, especially in terms of filtering the right and

needed information in accordance with the goals to be achieved. Furthermore, the pandemic brought many big changes in the world of education, especially in the development of learning technology. Entering this transitional period, teachers are required to be able to develop teaching materials and be able to innovate following increasingly rapid technological changes.

Teachers need help in reflecting on the learning process that occurs and making future program solutions. This helps the teacher in managing each learning process that will be carried out. Pozo-Rico et al. (2020) conducted research on the effectiveness of training programs for elementary school teachers regarding stress management, the use of Information and Communication Technology (ICT), and Emotional Intelligence (EI). The results showed that the 14-week teacher training program was effective in helping teachers deal with stress. One of the training programs that can be carried out is self-regulation training. Self-regulation is an act of self-regulation or self-regulated learning refers to the process that individuals use to focus their thoughts, feelings, and actions, to achieve their goals (Zimmerman in Schunk 2000).

The development of this research focuses on enhancing teacher self-regulation through targeted interventions. Effective self-regulation not only helps teachers manage their own thoughts, feelings, and behaviors but also positively influences their interactions with others, especially in relation to goal setting. Karamooz and Narafshan (2017) emphasize that goal setting is a crucial component of self-regulation. Building on this, Duckworth et al. (2001) developed the Mental Contrasting with Implementation Intentions (MCII) strategy, which is instrumental in achieving goals. This approach involves two key stages: first, setting clear and committed goals by envisioning a desirable and attainable future, and second, planning and executing relevant behaviors to reach those goals (Kizilec, 2017). The MCII strategy, as a self-regulation intervention, translates positive future-oriented thoughts into actionable behavioral changes (Duckworth, 2013). This research aims to implement and evaluate the MCII strategy to assist teachers in organizing their learning processes and improving their teaching performance, aligning with the purpose of empowering educators to better handle the challenges posed by the rapid advancement in learning technology.

2. LITERATURE REVIEW

Self-regulation is an act of self-regulation (or self-regulated learning) which refers to the process individuals use to focus their thoughts, feelings, and actions to achieve their goals (Zimmerman in Schunk 2000). Zeidner et al. in Karamooz and Narafshan (2017) said that self-regulation involves cognition, affection, motivation, and behavioral components that provide individuals with the capacity to adjust their actions and goals in order to achieve what is desired in changes in an environment around us.

According to Schraw et al. (2006), self-regulation includes three main components, namely: (a) cognition, which includes simple strategies, problem solving, and critical thinking. (b) metacognition, consisting of 2 general components, namely knowledge of cognition and regulation of cognition. Each component has subcomponents such as declarative, procedural, conditional knowledge and planning, monitoring, and evaluation. (c) motivation, the motivation component consists of 2 subcomponents, namely belief and perception. When compared between intrinsic and extrinsic motivation, intrinsic motivation is more important in the formation of natural human constructs.

Cycle of rotation Self-regulation is a cyclical or rotational process because these factors will continue to change during the learning period and need to be monitored. This monitoring will lead to changes in individual strategies, cognition, affection, and the behavior itself (Schunk, 2012). This cycle consists of 3 phases, namely (1) forethought, which is the phase that precedes

the initial performance and tends to process ideas before behavior occurs. Individuals can set goals, engage in strategic planning, maintain self-efficacy to achieve their goals. (2) performance or volitional control, is a phase that processes during learning that can affect the teacher's affection and attention. Performance control involves implementing learning strategies that can provide motivational and learning effects. (3) self-reflection, is the last phase and occurs after the performance takes place and usually people respond to the efforts that have been made. Individuals engage in self- evaluation and make attributions for their appearance.

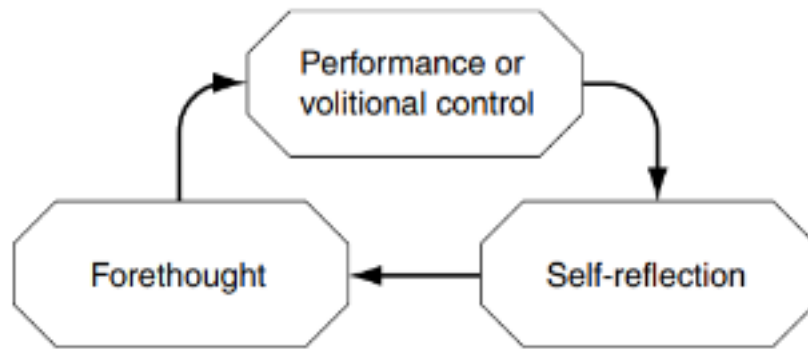


Figure 1. Self-Regulation cycle phases (Schunk, 2012).

2.1 Teacher Self-Regulation

Self-regulation of teachers can be defined as the ability of teachers to be able to regulate their thoughts, feelings and actions in the learning process. This is closely related to how the teacher organizes and organizes the learning process such as lesson planning, preparation of learning administration, application of learning methods, student arrangements, and interactions with students or parents. This can affect teacher performance when teaching. Self-regulation is proven to reduce teacher fatigue and can create a better work environment for teachers (Pitarinen et al. in Pyhalto, 2020). Rupperecht et al. (2017) say that teachers who display healthy self-regulation not only show better health outcomes compared to teachers with less healthy patterns, but their instructional quality is also rated significantly higher by their students.

Previous research has developed a self-regulation strategy called MCII. The MCII intervention promotes goal attainment by combining two complementary self-regulation techniques (Kizilcec et al., 2017), namely: (a) mental contrast (MC), this technique directs goal setting and how our commitment is formed within it. (b) implementation intention (II), this technique leads to the formation of intentions in achieving goals through the formation of strategic plans to overcome obstacles.

2.2 Definition of Teacher

Teachers are educators and teachers in early childhood education through schools or formal education, basic education, and secondary education (Wikipedia, 2020). The definition of a teacher is a person who educates, conducts teaching, provides guidance, adds physical or non-physical training, provides assessments and evaluates related to one science or more to all students (Heri, 2019).

According to Peters taken in Sudjana (2002), there are three duties and responsibilities of the teacher, namely: (a) the teacher as a teacher, the teacher plans and implements teaching and is required to have a set of knowledge and technical teaching skills. (b) the teacher as a guide, the teacher provides assistance to students in solving the problems they face. According to Sudjana (2011), the task of a supervisor is an educational aspect, because it is not only related to the delivery of knowledge, but also involves the development of personality and the formation of student values. (c) the teacher as class administrator, the teacher must have documentaries skills and orderly administration.

3. RESEARCH METHODOLOGY

The participants in this study were educators with more than two years of teaching experience and at least a bachelor's degree. As shown in Table 1, all participants were employed as Kindergarten (TK) teachers and fell within the age range of 25 to 45, chosen to reflect a phase of heightened professional productivity. The research utilized a qualitative approach, employing MCII (Mental Contrasting with Implementation Intentions) training. A Google Form questionnaire was employed to evaluate the teachers' perceptions regarding the influence of MCII training on their preparedness for navigating the learning environment in today's era of information technology.

Table 1: Demographic Details of the Respondents

| Participant | Gender | Age | Years of Service | Education |
|--------------------|---------------|--------------|-------------------------|------------------|
| AJP | Female | 30 years old | 6 years | S1 |
| CT | Female | 33 years old | 6 years | S1 |
| EV | Female | 39 years old | 15 years | S1 |
| IS | Female | 34 years old | 7 years | S1 |
| LS | Female | 42 years old | 12 years | S1 |

3.1 RESEARCH DESIGN

The MCII program, adapted from Duckworth et al. (2013), was structured into three parts. The first two parts each consisted of four questions, while the third part contained two questions. The training began with an introductory session to establish rapport and explain the MCII program's technical aspects.

In the first part, participants evaluated their level of interest and the importance of the provided topics. They also identified two positive outcomes and two potential obstacles related to these topics. The second part required participants to rewrite and elaborate on the positive outcomes and obstacles mentioned earlier, helping them visualize these aspects more clearly. In the third part, participants developed an "if-then" plan to address each identified obstacle and specified when and where they would implement these plans.

The MCII program was delivered over eight days, from May 24 to June 7, 2021. Each session occurred after morning prayers and teacher briefings to ensure teachers were in a neutral and ready state. The training addressed various aspects of teachers' roles and responsibilities, including learning objectives, student interactions, administrative tasks, participant evaluations, communication with parents, co-worker interactions, relationships with superiors, and professional development.

As depicted in Table 2, the meetings were conducted from 07:30 to 08:20, with an average duration of 15 to 20 minutes each. Participants demonstrated attentive and cooperative behavior throughout the training sessions, and all participants consistently attended every meeting.

Table 2 Schedule of MCII Program Interventions for EC

| Date | Time | Topic |
|------------------------|---------------|-------------------------------------|
| Monday, 24 May 2021 | 07:19 – 07:49 | Learning objectives |
| Tuesday, 25 May 2021 | 07:52 – 08:12 | Relationship with Students |
| Thursday, 27 May 2021 | 07:54 – 08:09 | Class administrations |
| Monday, 31 May 2021 | 07:54 – 08:16 | Evaluation of students |
| Wednesday, 2 June 2021 | 07:50 – 08:07 | Communication with parents |
| Thursday, 3 June 2021 | 07:35 – 07:55 | Interactions with fellow colleagues |
| Friday, 4 June 2021 | 07:47 – 08:02 | Relation with superiors/principal |
| Monday, 7 June 2021 | 07:52 – 08:12 | Teacher training/development |

The program was carried out for 2 weeks which was divided into 8 meeting sessions. Meeting sessions are held for approximately 15-20 minutes. The first session took approximately 30 minutes because it was new instructions for the participants. The researcher explained in detail and assisted the participants in answering each number. For the next meeting, the participants were familiar with the instructions given and worked faster than the first day. For the 8 topics given according to the planning carried out by the researcher, namely topics related to the teacher's work process: learning objectives, relationships with students, class administration, evaluation of students, communication with parents, interactions with fellow colleagues, relations with superiors/principal, and teacher training/development.

4. RESULTS AND DISCUSSIONS

Based on the intervention and evaluation results, participants expressed relief and satisfaction after completing the MCII program. They found the program valuable for problem-solving, self-evaluation, reigniting their passion for teaching, and reflecting on their role. Participants generally understood the instructions well, though three had no difficulties, one experienced occasional issues, and one faced significant challenges. Among the eight topics covered, relationships with students were deemed easiest by three participants, who enjoyed these interactions. One participant found administrative tasks straightforward due to their routine nature, while another found teacher coaching easiest, having already mastered related questions. Conversely, two participants struggled with class administration, citing procrastination and dislike. One found the coaching topic challenging due to difficulty identifying relevant barriers, another struggled with co-worker relationships due to personal friction, and a third found interactions with superiors difficult due to concerns about how their responses might impact their job.

In the MCII program, which is divided into three parts with varying numbers of questions, participants engage in a self-regulation cycle. The first part involves assessing preferences and the significance of the given topic, identifying positive outcomes and obstacles. The second part requires participants to describe these outcomes and obstacles in detail, marking the beginning of the goal-setting stage. The third part focuses on creating an if-then plan to address these obstacles, guiding participants through the performance and reflection stages. Here, teachers critically analyze their obstacles and develop strategies to overcome them. For instance, if facing

procrastination, participants might plan to seek support from peers or improve communication with parents to tackle challenges related to student learning.

Post-intervention evaluations revealed that participants were generally satisfied with the MCII program. They appreciated how the program helped them find solutions to various teaching challenges, evaluate their work environments, and reignite their passion for teaching. This aligns with Lazarus's (1984) notion of cognitive appraisal and Maryam's (2017) concept of positive reappraisal, emphasizing the benefits of self-evaluation and personal growth. Duckworth et al. (2011) support these findings, indicating that Mental Contrasting and Implementation Intentions enhance goal commitment and achievement. Overall, participants valued the program for its role in self-improvement and deepening their commitment to teaching.

5. CONCLUSION

Zimmerman (2000) defines self-regulation (or self-regulated learning) as the process by which individuals direct their thoughts, feelings, and actions to achieve their goals. While the MCII program intervention designed for this study focused on planning, it did not extend to the action phase, which is crucial for achieving goals. Due to time constraints, teachers were unable to implement and monitor their plans, highlighting a key limitation in the study.

Teacher professionalism, which develops with experience, plays a significant role in managing job responsibilities. Hoover (2021) links teacher professionalism and socio-emotional skills to lower burnout levels. Participants in this study, with 6 to 15 years of experience, demonstrated a strong commitment to their roles, particularly evident in their positive views about their students. This alignment with LaRusso & Smith's (2021) findings suggests that teacher empathy reduces burnout, underscoring the importance of job satisfaction and student relationships in mitigating stress.

Post-program evaluations revealed that participants found the MCII program valuable for reflecting on their work and developing strategies to overcome obstacles. According to Schunk (2012), self-reflection, the final phase of the self-regulation cycle, typically follows performance. Although the MCII program did not statistically show effectiveness, participants engaged in reflection and positive reappraisal, indicating perceived benefits.

5.1 Recommendations For Future Research And Practical Implementation

Future research should extend the MCII program's duration to give participants adequate time to implement their plans before advancing to new topics. Additionally, including a diverse range of educational levels can provide insights into how varying workloads and responsibilities affect the program's effectiveness. The MCII program offers teachers a valuable self-help tool for evaluating their work, reflecting on their experiences, and crafting actionable plans to meet their goals. Teachers are encouraged to use this program to improve their focus and professional growth. For school principals, the MCII program can be an effective supervision tool, aiding in the assessment and support of teachers by addressing their work evaluations and obstacles. This enables principals to provide tailored feedback and support based on individual needs.

REFERENCES

- Bakker, A. B. & de Vries, J. D. (2020). Job Demands-Resources Theory and Self-Regulation: New Explanations and Remedies for Job Burnout. Routledge Taylor & Francis Group. *ANXIETY, STRESS, & COPING* <https://doi.org/10.1080/10615806.2020.1797695>.
- Duckworth, A. L., Grant, H., Loew, B., Oettingen, G., & Gollwitzer, P. M. (2011). Selfregulation strategies improve self-discipline in adolescents: Benefits of mental contrasting and implementation intentions. *Educational Psychology, 31*(1), 17–26. <https://doi.org/10.1080/01443410.2010.506003>.
- Duckworth, A. L., Kirby, T. A., Gollwitzer, A., & Oettingen, G. (2013). From fantasy to action: Mental contrasting with implementation intentions (MCII) improves academic performance in children. *Social Psychological and Personality Science, 4*(6), 745-753.
- Ekawanti, S. & Mulyana, O. P. (2016). Regulasi Diri dengan Burnout pada Guru. *Jurnal Psikologi Teori dan Terapan, Vol. 6, No. 2*, 113-118, ISSN: 2087-1708.
- Fasikhah, S. S. & Fatimah, S. (2013). *Self - Regulated Learning dalam Meningkatkan Prestasi Akademik pada Mahasiswa*. ISSN: 2301-8267 Vol. 01, No.01, Januari 2013.
- Gawrilow, C., Morgenroth, K., Schultz, R., Oettingen, G., & Gollwitzer, P. M. (2013). Mental contrasting with implementation intentions enhances self-regulation of goal pursuit in schoolchildren at risk for ADHD. *Motivation and Emotion, 37*(1), 134-145. <https://doi.org/10.1007/s11031-012-9288-3>.
- Heri. (2019). *Pengertian Guru: Definisi, tugas, dan Peran Guru dalam Pendidikan*. <https://salamadian.com/pengertian-guru/>, pada tanggal 29 November 2020 pukul 18.15 WIB.
- Kadir, Syamsudin. (2016). *Menelisik Tugas dan Tanggungjawab Guru*. <https://akarsejarah.wordpress.com/2016/01/14/menelisik-tugas-dan-tanggungjawab-guru/>, diakses pada 19 Oktober 2020 pukul 14.00 WIB.
- Karamooz, M., & Narafshan, M. H. The Relationship between Self-Regulated Strategies and Burnout: A Teacher Analysis in the EFL Context of Iran. Scholink. *Studeis in Linguistic and Literature. Vol 1, No 2* (2017). DOI: <https://doi.org/10.22158/sll.v1n2p186>.
- Kizilcec, R. F., & Cohen, G. L. (2017). Eight-minute self-regulation intervention raises educational attainment at scale in individualist but not collectivist cultures. *Proceedings of the National Academy of Sciences, 114*(17), 4348-4353.
- Kramarski, B. & Kohen, Z. (2016). *Promoting Preservice Teachers' Dual Self-Regulation Roles as Learners and as Teachers: Effects of Generic vs Specific Prompts. Metacognition Learning*. DOI 10.1007/s11409-016-9164-8.
- Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer publishing company.
- Ma, Y., Wang, F. & Cheng, X. Kindergarten Teachers' Mindfulness in Teaching and Burnout: *The Mediating Role of Emotional Labor. Mindfulness 12, 722–729* (2021). <https://doi.org/10.1007/s12671-020-01538-9>.
- Oettingen, G., Kappes, H. B., Guttenberg, K. B., & Gollwitzer, P. M. (2015). Self-regulation of time management: Mental contrasting with implementation intentions. *European Journal of Social Psychology, 45*(2), 218-229. DOI: 10.1002/ejsp.2090.
- Papalia, D. E., Olds, S. W., Feldman, R. D. (2008). *Human Development*. Tenth Edition. Mc-Graw Hill. New York.
- Pyhältö, K., Pietarinen, J., Haverinen, K. et al. (2021). Teacher burnout profiles and proactive strategies. *Eur J Psychol Educ 36*, 219–242. <https://doi.org/10.1007/s10212-020-00465-6>.
- Pozo-Rico, T., Gilar-Corbí, R., Izquierdo, A., & Castejón, J. L. (2020). Teacher training can make a difference: tools to overcome the impact of COVID-19 on Primary schools. an experimental study. *International Journal of Environmental Research and Public Health, 17*(22), 8633.
- Rahm, T., Heise, E. (2019). *Teaching Hapipiness to Teachers - Development and Evaluation of a Training in Subjective Well-Being*. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2019.02703>.

- Rupprecht, S., Paulus, P., & Walach, H. (2017). Mind the Teachers! The Impact of Mindfulness Training on Self-Regulation and Classroom Performance in a Sample of German School Teachers. *European Journal of Educational Research*, 6(4), 565-581.
- Schunk, Dale H. (2012). *Learning Theories; An Educational Perspective*. Allyn & Bacon. Boston, USA.
- Wikipedia. (2020). Guru. <https://id.wikipedia.org/wiki/Guru>, pada tanggal 29 November 2020 pukul 18.00 WIB.