

Formation of Self-Discipline through Self-Regulation for Learning Achievement

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Abstract: This literature study examines the process of self-regulation in transforming compliance with school rules originating from external pressure into behavioral regularity emerging from personal awareness, and its impact on the effectiveness of student learning outcomes. Using a qualitative approach with content analysis method, this study synthesizes relevant literature to build a theoretical framework on how self-regulation facilitates the internalization of disciplinary values. The findings reveal that self-regulation occurs through a series of interconnected stages including goal setting, strategy planning, self-monitoring, evaluation, and adjustment. The success of this process is determined by internal motivation, appropriate environmental support, positive direct experiences, and healthy emotional management. Strong self-regulation directly impacts learning outcome effectiveness through improved cognitive strategies, strengthened intrinsic motivation, enhanced time and environment management, and developed capacity to constructively cope with failure. Learning outcomes achieved through self-regulation processes are characterized by lasting understanding, knowledge transfer ability, and the formation of lifelong learning dispositions. Schools and teachers play strategic roles in strengthening self-regulation through curriculum design that supports autonomy, formative feedback, role modeling, and collaboration with parents. This study contributes theoretically by positioning self-regulation as the central mechanism bridging external influences and internal disposition formation.

Keywords: Academic Achievement; Behavioral Awareness; Discipline Internalization; Goal Setting; Learning Outcomes.

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1. Introduction

Discipline is a key pillar in the educational process, determining student success, both in academics and character development. In various educational studies, discipline is often viewed as the initial foundation for developing the competence and responsibility of future generations (Mardikaningsih et al., 2021). Every school has rules and regulations designed to create an orderly and conducive learning environment (Musthofa & Darmawan, 2024). Students are introduced to various rules from the outset, from the requirement to arrive on time, dress neatly, complete assignments, to respecting teachers and others (Niswatin & Darmawan, 2025). In the initial stages, compliance with these rules is generally external. Students comply with the rules because of teacher supervision, fear of punishment, or the desire for praise. This type of compliance, while important for maintaining short-term order, is fundamentally flawed. It only persists as long as there is an external threat or incentive.



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When supervision is lax or when there are no imminent consequences, compliance easily breaks down. This situation demonstrates that education is not sufficient to simply emphasize rules; it also needs to instill awareness within students (Rojak, 2021; Masfufah & Darmawan, 2023).

The ideal educational process does not stop at mere external obedience. A higher goal is the development of discipline stemming from students' internal awareness, where they obey rules not out of fear of punishment, but because they understand the value and benefits of those rules. This is known as self-discipline. Students with self-discipline will maintain their own behavior even when no one is watching. They arrive on time because they value time, complete assignments because they feel responsible, and behave politely because they believe that everyone deserves respect (Musyaibin & Darmawan, 2024). The development of this awareness is also related to the development of superior personality, which is built through a focused educational process (Nuraini et al., 2024). This shift from external obedience to internal discipline is one of the most important developmental tasks that schools must facilitate. This process doesn't happen automatically with age but requires guidance and a supportive environment (Naser & Darmawan, 2024). Schools that consistently foster positive values and habits tend to be more successful in fostering personal responsibility in students (Shidiq et al., 2024).

Self-regulation is a key concept in understanding this shift. Self-regulation refers to a person's ability to consciously direct their thoughts, feelings, and actions toward achieving predetermined goals. Self-regulation enables students to not simply react to external stimuli but to actively manage their behavior based on internalized standards. This ability is crucial in preparing students to face the challenges of increasingly dynamic learning environments and the workplace (Mendonca et al., 2021). This process involves a series of stages, from goal setting and progress monitoring to outcome evaluation and strategy adjustments as needed. Students who are able to regulate themselves well are less easily swayed by circumstances. They possess a stable internal compass, which keeps them on track even when faced with external temptations or pressures. *Regulasi diri juga berkaitan erat dengan kemampuan belajar mandiri yang perlu dilatih sejak dini* (Mubarok & Darmawan, 2025).

Schools, as educational institutions, have a strategic role in developing students' self-regulation (Boekaerts & Corno, 2005). Various elements within schools, from the curriculum and learning methods to assessment systems and student development policies, can be designed to support the internalization of disciplinary values (Darmawan, Maghfiroh, & Romadhoni, 2026). Teacher professionalism and exemplary discipline also significantly influence student behavior (Mubasysyir & Darmawan, 2024). Teachers are not simply enforcers of the rules, ready to punish any violations. They need to be facilitators who help students understand the meaning behind each rule, train them to set realistic learning goals, guide them in monitoring their own progress, and provide feedback that builds awareness. A supportive school environment, where students feel safe to explore and make mistakes, is also crucial for the growth of self-regulation (Ursache et al., 2012). An appropriate teaching style and positive interactions have been proven to increase student motivation and engagement in learning (Mudzakkir & Darmawan, 2024). When students fear being punished every time they make a mistake, they tend to be outwardly obedient, but never develop internal awareness.

The effectiveness of learning outcomes is ultimately determined by the extent to which students possess strong self-discipline (Gorbunovs et al., 2016). Quality learning outcomes cannot be achieved simply by studying for exams or completing assignments for fear of being scolded by the teacher. It requires consistent effort over time, the ability to stay focused despite numerous distractions, and a willingness to continuously improve based on feedback. All of this requires mature self-regulation. Research shows that learning discipline is directly related to improved student learning outcomes (Mubarok & Darmawan, 2025). Students who are able to self-regulate will study regularly, manage their time well, seek additional learning resources when experiencing difficulties, and periodically evaluate their learning strategies. They don't rely on external encouragement to move forward. They have an internal driving force. Digital literacy and the appropriate use of learning media can also strengthen academic achievement if accompanied by good self-regulation (Lee et al., 2015; Rizal & Darmawan, 2024; Chen et al., 2025; Fajar et al., 2025). Understanding how self-regulation transforms external compliance into behavioral regularities that emerge from personal awareness is crucial, both for the development of educational psychology theory and for improving student development practices in schools (Gani, 2025).

Another equally important issue is the weak link between discipline development and learning outcomes. Discipline is often treated as a separate domain, separate from the academic learning process. However, assignment methods and social interactions in the classroom significantly influence students' levels of learning engagement and responsibility (Rahmawati & Darmawan, 2024). There is dedicated time for character development, dedicated teachers handle disciplinary issues, and specific sanctions are imposed for violations of rules. Classroom learning proceeds independently without much integration of self-regulation development into daily activities. As a result, students are not trained to use self-regulation skills related to real learning. Parental support and the family environment also play a significant role in developing consistent study habits (Nugraemi & Usman, 2019; Rahmadiyah & Darmawan, 2025; Zahid et al., 2025). They may memorize the rules of discipline but are unable to manage their study time at home. They may fear the guidance counselor but lack strategies to overcome the temptation to play games when they should be studying. This gap between discipline development and academic learning results in suboptimal learning outcomes. Students who formally adhere to school rules do not necessarily develop the good study habits necessary for high achievement.

The demands of the modern world place increasing importance on independence and personal responsibility. Today's education is required to prepare students to face social change and rapid technological developments (Khairi, 2023; Zahid et al., 2025). In the information age, with all its easy access and temptations, individuals are required to manage themselves without relying on external supervision. The workplace no longer provides superiors to constantly supervise, nor do universities provide lecturers to constantly remind them. Inequality in educational access across various regions also requires students to have a stronger sense of self-efficacy and self-regulation (Rojak & Khayru, 2022). In such a situation, graduates who are accustomed to simply obeying rules for fear of punishment will face significant difficulties. Those who succeed are those with strong self-regulation, who are able to set goals, manage their time, and maintain commitments even when there is no one to supervise them. As institutions preparing young people for the future, schools need to ensure that their educational processes not only produce short-term compliance but also foster long-

term self-regulation. Examining how the internalization of discipline occurs is crucial for designing education that is relevant to the demands of the times.

The development of digital technology, particularly social media and online games, presents new challenges for students' self-control. Digital literacy is an urgent need to enable students to use technology wisely and productively (Ismail et al., 2024; Rizal & Darmawan, 2024; Thelma et al., 2024). The temptation to procrastinate, access social media while doing assignments, or stay up late playing games is strong and psychologically designed to make users addicted. In situations like this, reliance on external control from schools or parents becomes increasingly inadequate. The school environment and parental attention remain crucial factors in forming healthy technology habits (Irfan et al., 2024; Umroh & Darmawan, 2024). Students spend significant time outside the reach of adult supervision. They carry their devices everywhere, including their bedrooms, providing constant access to temptation. The only defense that can protect them is strong self-regulation. The ability to recognize temptation, remember long-term goals, and resist immediate gratification are crucial life skills. Non-formal education and community involvement can also help strengthen the character and self-regulation of young people (Hariani & Wardoyo, 2024; Warin, 2022). Research on behavioral regulation related to education is becoming increasingly urgent, as a foundation for developing development programs capable of equipping students with these skills.

Many schools still face a fundamental problem in fostering student discipline: the inability to internalize regulatory values into personal awareness. Students tend to comply only when there is teacher supervision or when the threat of punishment looms. Once supervision is lax, deviant behavior begins to emerge. This phenomenon is also influenced by the social environment and stereotypes that develop in the students' communities (Hariani & Masnawati, 2022; Sajjapong et al., 2022). Students skip school when teachers are absent, cheat on tests when supervisors are absent, or litter when no one is looking. These situational patterns of compliance indicate that school rules are not perceived as valuable, but rather as external obstacles to be avoided. The root of the problem lies in a coaching approach that focuses too much on enforcing rules and imposing sanctions, without systematic efforts to develop self-regulation. Counseling and character-building approaches can actually provide a bridge to instilling internal awareness in students (Rojak et al., 2024). Schools spend more energy detecting violations and punishing perpetrators than on guiding students to understand the meaning behind the rules and training them to manage their own behavior.

This study aims to conduct a literature review to comprehensively analyze the self-regulation process that transforms compliance with external school rules into behavioral regularities that emerge from personal awareness. This study will identify the stages of self-regulation involved in the internalization of disciplinary values, as well as the factors that facilitate or hinder this process. Furthermore, this study aims to examine the relationship between strengthening self-regulation and the effectiveness of student learning outcomes by analyzing how self-regulation skills contribute to consistent learning effort, time management, and academic achievement. The theoretical contribution of this study is to formulate a conceptual framework regarding the mechanism of transformation from external to internal discipline through self-regulation. Practically, the results of this study are expected to serve as a reference for developing student development programs, designing curricula that integrate self-regulation development, and improving the quality of teacher guidance to help students build strong self-discipline.

2. Research Methods

This study chose a qualitative approach, relying on literature as its backbone. Creswell (2014) emphasized that a qualitative approach allows researchers to delve into the meanings individuals or groups attach to a social or humanitarian issue. This means that searching for books, journals, and scientific publications is the primary source for gaining understanding. This method was chosen because it is most suitable for thoroughly examining the process of someone changing from mere compliance due to external pressure to discipline born from within. Research data was extracted from various academic reading materials such as textbooks, journal articles, and research publications that specifically discuss self-regulation, internalization of values, student discipline, and their relationship to learning outcomes. The process began with searching for and collecting relevant sources on the topic, then neatly documenting them for analysis.

To process the data, this study employed Krippendorff's (2004) content analysis technique, which offers a systematic framework for analyzing texts in depth and in a structured manner. The procedure involved several stages. First, the literature was read repeatedly until its content and meaning were fully understood. Second, important pieces of information related to the research questions were separated and condensed without losing their essence, a process called data condensation (Sandelowski & Barroso, 2007). Third, these pieces were grouped by themes such as the internalization process, factors supporting self-regulation, and its relationship to learning outcomes. Fourth, from these groupings, the core findings were formulated, which served as the research answers. To ensure reliable results, researchers chatted and discussed with colleagues to test the credibility of their findings, or in Lincoln and Guba's (1985) terms, called peer debriefing, plus creating clear research records so that the process could be traced (audit trail). With this systematic approach, research is expected to build a complete understanding of how self-regulation can transform compliance due to rules into orderly habits that emerge from self-awareness, a process that Ryan and Deci (2000) in self-determination theory explained as a journey from external regulation to integrated regulation.

3. Results and Discussion

The Dynamics of Self-Regulation in the Transformation from External Compliance to Internal Discipline

Self-regulation is an individual's ability to consciously direct, control, and evaluate their thoughts, emotions, and behavior in order to achieve predetermined goals. Self-regulation is evident in how a person plans actions, monitors the process, and evaluates the results to make improvements. In learning behavior, self-regulation also reflects an individual's ability to independently manage their learning process, including setting learning goals, selecting appropriate strategies, maintaining motivation, and controlling various distractions that can hinder the achievement of those goals. Thus, self-regulation is not only related to the ability to control behavior but also encompasses the ongoing process of planning, monitoring, controlling, and self-evaluating so that individuals can achieve their desired goals effectively and consistently. This process enables an individual to shift from behavior initially influenced by external control to behavior driven by internal awareness and responsibility. Self-Regulation Indicators can be measured as follows:

a. Goal Setting

An individual's ability to set clear goals as a direction for behavior. Individuals with good self-regulation are able to determine desired targets and understand the steps to achieve them.

b. Strategic Planning

The ability to develop strategies or methods to achieve goals. This includes selecting learning methods, managing time, and prioritizing activities.

c. Self-Monitoring

The individual's ability to monitor and be aware of the ongoing process. The individual checks whether their actions are in accordance with the established plans and goals.

d. Self-Control

The ability to control impulses, emotions, or distractions that can hinder goal achievement. The individual is able to stay focused and resist distractions.

e. Self-Evaluation

The ability to assess the results of actions taken. The individual compares the results achieved with the initial goals and reflects on them for improvement.

Study discipline is an individual's consistent attitude in carrying out study activities regularly, adhering to study rules or schedules, and demonstrating responsibility for academic assignments. Study discipline is reflected in an individual's ability to manage their study behavior in a focused manner, utilize study time effectively, and complete academic obligations responsibly. In Educational Psychology, learning discipline is understood as a form of behavioral control that encourages individuals to remain focused on learning activities despite various distractions or obstacles. Individuals with good learning discipline tend to be able to maintain consistency in learning, adhere to learning rules, and demonstrate perseverance in completing assigned tasks. Learning discipline is a crucial factor supporting individual success in the learning process. This attitude is reflected in an individual's ability to carry out learning activities regularly, comply with applicable rules, and demonstrate responsibility for academic assignments. To understand learning discipline more measurably in research, several indicators are needed to describe disciplined behavior in learning activities. These indicators of learning discipline include the following:

a. Compliance with Learning Rules

The individual's ability to follow rules or regulations related to the learning process, such as adhering to schedules, regulations, and learning instructions.

b. Consistency in Learning

The individual routinely engages in learning activities without constant reminders or coercion from external parties.

c. Learning Time Management

The ability to manage time effectively between study, rest, and other activities so that learning activities continue to run smoothly.

d. Responsibility for Assignments

The individual demonstrates sincerity in completing assignments, homework, or academic obligations on time.

e. Perseverance in Learning

The ability to maintain learning efforts despite facing difficulties or obstacles.

Table 1. Conceptualization of Self-Regulation and Learning Discipline.

| Variable | Operational Definition | Indicator |
|----------------------------|---|--|
| Self-Regulation | An individual's ability to consciously direct, control, and evaluate their thoughts, emotions, and behavior to achieve predetermined goals. | 1. Setting learning goals |
| | | 2. Planning learning strategies |
| | | 3. Self-monitoring during the learning process |
| | | 4. Self-control over distractions |
| | | 5. Self-evaluation of learning outcomes |
| Learning Discipline | An individual's consistent attitude in carrying out learning activities regularly, adhering to study rules or schedules, and demonstrating responsibility for academic assignments. | 1. Compliance with study rules |
| | | 2. Consistency in study activities |
| | | 3. Study time management |
| | | 4. Responsibility for academic assignments |
| | | 5. Persistence in study |

Self-regulation is a concept that explains how a person is able to control their thoughts, emotions, and behavior to achieve predetermined goals. This self-management ability is often associated with an individual's effectiveness in achieving goals sustainably (Darmawan, 2024). Self-regulation serves as a bridge between compliance with external school rules and internal discipline born of personal awareness. This process does not occur instantly, but rather through a series of interrelated stages. Students may initially comply only because a teacher is supervising them or because they fear punishment. However, over time, through guidance and experience, they begin to understand the reasons behind the rules. This understanding forms the foundation for growing internal motivation to behave according to the rules, not because of external pressure, but because of a personal belief that such behavior is good and correct (Ramle, 2021).

The first stage in the self-regulation process is goal setting. Students need to have a clear picture of what they want to achieve, both in the short and long term. Setting clear goals has been shown to help students focus and direct their learning (Konrad et al., 2014; Maharani & Darmawan, 2024; Martins van Jaarsveld et al., 2025). These goals can include specific grade targets, regular study habits, or disciplined behaviors they want to master. Teachers play a crucial role in helping students formulate realistic and meaningful goals. When students actively participate in setting their own goals, they feel a sense of responsibility for them. This sense of ownership becomes a powerful driving force. Attention and motivation from parents can also strengthen students' commitment to their goals (Darmawan, Oktavia, & Albaar, 2026). Unlike goals set unilaterally by teachers or schools, goals born from self-awareness are more likely to be pursued with greater dedication because students feel that the goals are their own, not imposed by external pressures (Khayru, 2023).

Once goals are set, the next stage is strategic planning (Chang, 2006). Students need to design concrete steps to achieve those goals. The ability to plan learning strategies is also related to independence and available learning facilities (Imanuddin & Darmawan, 2024). For example, if the goal is to improve discipline in completing assignments, they need to plan when to study, how to divide their time between subjects, and what to do if they encounter difficulties. At this stage, students begin to learn to anticipate obstacles and prepare solutions. This planning ability is crucial because it demonstrates that they are not simply reacting to situations but are proactively managing their behavior. Teachers can facilitate this process by providing examples of effective strategies and guiding students to choose strategies that best suit their individual characteristics and learning styles (Ramle & Mardikaningsih, 2024).

The self-monitoring stage is the core of self-regulation (Earl & Katz, 2008). At this stage, students consciously observe and record their progress toward achieving their goals. The use of appropriate learning media and technology can also help make the self-monitoring process more structured (Laili & Darmawan, 2024). Students can keep a daily journal about whether they managed to study according to schedule, whether they resisted the temptation to play games during study time, or how they felt after successfully maintaining discipline. This self-monitoring makes behavior more transparent and easier to evaluate. Without monitoring, students are easily misled by subjective perceptions that may be inaccurate. They may feel they are sufficiently disciplined when their records actually indicate otherwise. With honest and regular monitoring, students have objective data that can serve as a basis for improvement. Teachers can help by providing a simple recording format and providing feedback on student notes.

Self-evaluation is the stage in which students assess the extent to which they have successfully achieved their set goals. The self-evaluation process also fosters personal responsibility, which is the foundation for character development (Hariani & Mardikaningsih, 2022). Was the strategy used effective? Were there any unexpected obstacles? What can be improved in the future? This evaluation process trains students to think critically about their own behavior, rather than simply accepting the judgments of others. When evaluation is conducted honestly and constructively, students can learn from mistakes and design better strategies. Education that guarantees children's right to optimal development requires a healthy space for reflection (Moody, 2020). Students also learn to celebrate small successes, which is essential for maintaining motivation. Teachers can facilitate self-evaluation by asking reflective questions, providing a clear self-assessment rubric, and creating an atmosphere where students feel safe admitting shortcomings without fear of judgment.

Based on the evaluation results, students then adjust their strategies. Sustainable behavior change requires awareness and a consistent educational process (Gautama & Mardikaningsih, 2022). Self-regulation is dynamic and flexible. An effective strategy in the first week may need to be modified in the second week due to changing conditions or because the strategy turns out to be less suitable. Students with good self-regulation don't stick rigidly to their initial plans but are able to adapt to the situation. They learn that failure isn't the end of the world, but rather valuable information for improvement. This trial and error process actually enriches their learning experience (Mardikaningsih et al., 2025). Teachers can support this by providing space for experimentation, not being too quick to provide solutions, but allowing students to discover for themselves what works best for them, while remaining under safe guidance.

Throughout the self-regulation process, internal motivation plays a crucial role. Strong learning motivation is often influenced by a conducive learning environment (Haqiqi & Darmawan, 2023). Internal motivation is an inner drive to do something because of the inherent value or enjoyment of the activity itself, rather than external rewards or pressure. Students with internal motivation for discipline maintain their behavior because they genuinely want to be orderly and responsible individuals, not because of fear of punishment or praise. Building this internal motivation takes time and the right approach. Teachers need to help students discover the personal meaning of discipline, for example by showing how discipline helps them achieve their goals or how it makes them more respected by others. When discipline is directly beneficial, internal motivation will grow naturally.

Environmental support is crucial for the success of the self-regulation process. An overly controlling environment can actually hinder the development of self-regulation because students don't have the space to practice making their own decisions. Conversely, an overly permissive environment is also detrimental because students lack guidance. The ideal environment is one that provides clear structure but allows freedom within certain limits. In schools, this means firm rules with adequate explanations, and consistent but humane consequences. Authoritative, rather than authoritarian, teachers are able to balance demands and support. They enforce rules firmly but also listen to students' perspectives and provide reasons behind each demand. This balance creates a sense of security that allows students to explore and develop self-regulation.

The process of internalizing disciplinary values occurs gradually. Factors influencing academic achievement are also inseparable from the internalization process of disciplinary values (Mardikaningsih, 2014). Initially, students may only be outwardly obedient. They do the right thing because there is a reward or punishment. This stage is called the external stage. Over time, if positive experiences continue to occur, they begin to identify with these values. They obey because they want to be seen as good children by their teachers and parents. This stage is called identification. At the highest stage, these values have been fully integrated into their self-system. They obey because they are truly part of who they are. This is the stage of full internalization. Students who reach this stage will feel uncomfortable breaking rules, even when no one is watching, because such behavior conflicts with their self-concept. The feelings of guilt or shame that arise are not due to fear of being caught, but because they do not conform to the internal standards they have set for themselves.

In this internalization process, direct experience plays a crucial role. Integrating learning media such as videos and hands-on practice can strengthen understanding and instill values (Irawan et al., 2023). Students need to experience the benefits of disciplined behavior firsthand. When they feel that studying regularly improves their grades, or that arriving on time ensures they don't miss important lessons, these positive experiences reinforce the belief that discipline is valuable. Conversely, if their experiences are negative, for example, if they feel discipline only restricts them without any clear benefits, the internalization process will be hampered. Teachers need to design experiences that allow students to experience the direct benefits of discipline. This can be done by providing clear feedback on their progress, linking discipline to achievements they are proud of, or creating situations where group discipline leads to shared success (Anderman & Anderman, 2019).

Emotional factors cannot be ignored in the self-regulation process. Positive emotions such as pride, satisfaction, and joy when successfully maintaining discipline reinforce such

behavior. Conversely, negative emotions such as guilt and shame when failing can motivate self-improvement, as long as they are not excessive and lead to despair. Teachers need to help students manage these emotions healthily. When students succeed, teachers can help them reflect on what made them successful and how to maintain it. When they fail, teachers can help them view failure as part of the learning process, not a judgment against them. Consistent emotional support from teachers creates a secure bond that allows students to continue striving to develop self-regulation despite difficulties. Healthy digital literacy also impacts students' mental health and positive behavior (Khayru et al., 2025).

Individual differences in self-regulation need to be understood and accommodated. Each student has a different pace and style for developing self-regulation. Some are able to manage themselves quickly, others require more time and more intensive guidance. Some respond well to a reflective approach, while others require a clear structure. Competent teachers understand these differences and adapt their approach. They do not impose the same standards for everyone, but provide support tailored to each individual's needs. These differences also reflect the fact that self-regulation is a learnable skill, not a fixed, innate talent. Every student, with the right support, can develop self-regulation to an adequate level. The belief that all students can develop is a crucial prerequisite for successful coaching. Learning independence, environment, and learning methods have different impacts on each student (Khunafah et al., 2024).

The development of self-regulation will ultimately be reflected in qualitative changes in student behavior. Those who previously only obeyed when supervised now begin to show initiative. They complete assignments without being told, arrive on time without being reminded, and maintain order without being supervised. This change is not always linear. Sometimes there are setbacks, sometimes stagnation, and sometimes encouraging leaps forward. Teachers need to have the patience to observe this long-term process, not getting caught up in short-term evaluations. They also need to celebrate every step of progress, no matter how small, because each step forward brings students closer to true independence. On this journey, teachers are companions, not judges. Relationships based on trust and mutual respect are the most fertile medium for the growth of self-regulation. Participation in social and religious activities can also strengthen the values of responsibility and discipline (Alhadabi & Karpinski, 2020; Lindra et al., 2024).

Self-regulation is a complex process involving a series of stages, from goal setting and strategic planning to self-monitoring and evaluation, to adjustment. This process is facilitated by internal motivation, appropriate environmental support, positive firsthand experiences, and healthy emotional management. Through this gradual and ongoing process, compliance with school rules, initially external, gradually transforms into behavioral regularities that emerge from personal awareness. Ultimately, successful education is one that fosters awareness, not just obedience (Majid et al., 2023; Asrofi et al., 2025). This transformation not only results in stronger discipline but also shapes individuals who are more mature, responsible, and prepared to face life's increasingly complex challenges.

Strengthening Self-Regulation and Its Impact on the Effectiveness of Student Learning Outcomes

Learning outcomes are the level of achievement of abilities acquired by an individual after undergoing a learning process, demonstrated through changes in knowledge, understanding, attitudes, and skills. Learning outcomes reflect the extent to which an

individual is able to understand the material being studied, apply the knowledge gained, and demonstrate development in abilities after participating in learning activities. In Educational Psychology studies, learning outcomes are often understood as learning achievements encompassing cognitive, affective, and psychomotor aspects. Thus, learning outcomes are not only measured by academic grades, but also by the ability to understand, apply, and demonstrate behavioral changes as a result of the learning process.

Learning outcomes can be seen through several indicators that describe an individual's level of achievement after participating in the learning process. These indicators describe changes in abilities, understanding, and skills acquired by students. The learning outcome indicators in this study are explained as follows:

a. Understanding of Learning Material

Understanding of learning material indicates an individual's ability to grasp the meaning, concepts, and information presented during the learning process. Individuals with good understanding are able to re-explain the material they have learned in their own words.

b. Ability to Apply Knowledge

The ability to apply knowledge describes an individual's ability to use acquired knowledge to solve problems or tasks related to the learning material.

c. Changes in Attitudes Toward the Learning Process

Changes in attitudes toward the learning process reflect the development of positive attitudes toward learning activities, such as increased interest in learning, commitment to participating in learning, and a willingness to continuously improve one's abilities.

d. Skills in Completing Learning Tasks

These skills demonstrate an individual's ability to complete tasks, exercises, or learning activities accurately and systematically in accordance with established learning objectives.

e. Achievement of Values or Learning Achievement

Achievement of Values or Learning Achievement is the result obtained by an individual in the form of a value or score that indicates the level of success in understanding the material studied.

Table 2. Conceptualization of Learning Outcomes.

| Variable | Operational Definition | Indicator |
|--------------------------|---|--|
| Learning Outcomes | The level of achievement of abilities acquired by an individual after participating in the learning process, demonstrated through changes in knowledge, understanding, attitudes, and skills. | 1. Understanding of learning material |
| | | 2. Ability to apply knowledge |
| | | 3. Changes in attitude toward the learning process |
| | | 4. Skills in completing learning tasks |
| | | 5. Achievement of grades or learning achievements |

Strong self-regulation, built through the internalization of disciplinary values, has direct consequences for the effectiveness of student learning outcomes. Strengthening structured and directed study habits is an integral part of good educational management (Akmal et al., 2015). The relationship between these two variables is causal and reciprocal. Good self-regulation enables students to manage their learning process more effectively, which in turn results in higher academic achievement. High achievement then strengthens students' confidence in their abilities, further strengthening self-regulation. This virtuous cycle forms the foundation for long-term educational success. Students with strong self-regulation not only excel on report cards but also develop study habits that will remain useful throughout life. They learn not under pressure, but rather through an internal drive that makes the learning process a meaningful and enjoyable activity. This aligns with the view that individual behavior is influenced by the process of habituation and value reinforcement (Darmawan, 2013).

In the cognitive domain, self-regulation is reflected in students' ability to use in-depth and effective learning strategies. Directed and consistent learning, such as in *tahsin* activities or academic coaching, shows that repeated practice can improve the quality of learning outcomes (Akmal et al., 2024). Students with good self-regulation are not satisfied with simply memorizing material and then forgetting it after the exam. They tend to use elaboration strategies, connecting new information with existing knowledge. They also engage in organization, arranging information into a structure that facilitates comprehension. They are able to monitor their own understanding, recognize when a concept is not yet understood, and immediately seek additional learning resources or ask the teacher. This metacognitive ability is a characteristic of independent learners who do not rely on constant instruction from teachers. They are aware of what they know and what they don't know, and know what to do to fill in the gaps. This ability is also important in shaping students' readiness to face future academic and career challenges (Chada, 2023).

The motivational dimension of self-regulation also contributes significantly to learning outcomes. Learning motivation is inseparable from the influence of the social environment and student involvement in positive activities, including the wise use of social media (Al Mursyidi & Darmawan, 2023). Students with good self-regulation are able to maintain their motivation even when faced with difficult material or boring situations. They possess sufficient self-efficacy, so they don't give up easily when faced with challenges. They are also able to connect academic tasks to broader personal goals, making even boring tasks meaningful. When facing exams, they are not overcome by excessive anxiety that could interfere with performance, because they believe in the preparation they have made. This strong motivation makes them diligent in studying, not easily distracted, and able to manage their time wisely. This perseverance ultimately accumulates into in-depth mastery of the material (Ahmed et al., 2013).

Time management and the learning environment are behavioral aspects of self-regulation that significantly determine the effectiveness of learning outcomes. Consistent learning discipline and teacher competence in guiding students influence improved learning achievement (Bayhaqi et al., 2025). The formation of a culture of discipline is also influenced by leadership style in the educational environment (Al Laisty et al., 2024). Students who are able to regulate themselves well will design a regular and consistent study schedule. They know the best time to study a particular subject, how long they can fully concentrate, and

when they need to take a break. They are also able to create a conducive learning environment, for example by choosing a quiet place, putting away cell phones while studying, and preparing all necessary equipment before starting. Discipline in these practical aspects may seem trivial, but its impact on the quality of learning is significant. Regular study, even if it is not particularly long, is far more effective than cramming all night before an exam, which only results in fatigue and temporary memorization.

Self-regulation is also reflected in students' ability to seek appropriate assistance when facing difficulties. The implementation of character education in schools encourages students to have an open attitude, responsibility, and a willingness to continue learning (Aliyah & Masnawati, 2022). The value of togetherness in community-based educational activities also strengthens the spirit of mutual assistance in the learning process (Arifin et al., 2022). Students with good self-regulation are not hesitant to ask teachers or friends when they don't understand material. They are also able to distinguish between difficulties that truly require help from others and those that can be overcome with greater effort. This ability to seek help is important because learning cannot always be done alone. Interaction with teachers and friends actually enriches understanding. However, students who lack self-regulation often fall into two extremes: being too dependent on others for help, thus preventing independence, or being too withdrawn, allowing difficulties to accumulate and become major problems. Both of these extremes are detrimental to learning outcomes (Aleven et al., 2016).

Self-regulation enables students to better prepare themselves. They don't wait until the exam results are announced to start studying, but instead develop regular study habits that keep the material fresh in their minds. When facing an exam, they manage their time effectively, avoiding fixating on one difficult question until they run out of time for others. After the exam, they evaluate their study strategies to determine whether they were effective or needed improvement. This cycle of preparation, implementation, and evaluation occurs naturally for students with good self-regulation. They don't need constant prompting or encouragement to study. It all stems from an internal awareness formed through a long process of habituation and internalization of values. Managing these positive habits is part of an educational strategy to shape a generation that is academically and morally resilient (Andrade & Brookhart, 2016; Alfaaza et al., 2025).

Learning outcomes achieved through a process involving self-regulation differ in quality from those achieved through coercion or pressure. Students who learn through self-regulation will have more lasting understanding. Material learned with awareness and appropriate strategies will be stored in long-term memory, not just short-term memory, which is easily lost after exams. They are also better able to transfer knowledge to new situations, because they don't simply memorize formulas or facts, but understand the concepts behind them. This transferability is crucial in the real world, where the problems faced are rarely exactly the same as those learned in school. Graduates who are only good at memorizing will struggle to navigate the complexities of the workplace, while graduates who have a deep understanding will be more adaptable. This aligns with findings that self-regulation contributes significantly to the depth of information processing and the resilience of learning outcomes (Zimmerman, 2002; Ambrose et al., 2010).

The impact of self-regulation on learning outcomes is also evident in students' ability to overcome failure. During their academic journey, there will inevitably be times when test scores don't meet expectations or assignments aren't completed on time. Students with good

self-regulation won't wallow in disappointment or blame external factors, such as overly difficult questions or unclear teachers. They will engage in introspection, analyze what went wrong in their preparation or study strategies, and plan improvements for the future. This attitude makes failure a stepping stone, not a stumbling block. In contrast, students who lack self-regulation tend to blame external factors or give up when faced with failure. This difference in response to failure will, in the long run, result in a widening achievement gap between the two groups. This finding is consistent with research showing that self-regulation is closely linked to academic resilience and the ability to adapt to challenges (Pintrich, 2004).

The role of schools and teachers in strengthening student self-regulation is crucial in the learning process. Schools that want to develop students who are able to manage themselves well need to design curricula and assessment systems that support meaningful learning. Assessment systems that focus too much on final exams and grades often lead students to study solely for grades, leading to short-term learning strategies such as memorization. Conversely, assessments that provide feedback, opportunities to correct mistakes, and value the learning process can help students develop reflection and self-control. Furthermore, teachers need to provide students with space for autonomy, for example by providing choices about topics or how to complete assignments. This opportunity trains students to make decisions and take responsibility for their learning outcomes. This aligns with the concept of Self-Determination Theory developed by Edward L. Deci and Richard M. Ryan, which emphasizes that supporting autonomy in learning can increase intrinsic motivation and strengthen student self-regulation (Lozano-Jiménez et al., 2020; Germani et al., 2022).

Providing appropriate feedback is one of the most effective interventions for strengthening self-regulation. Good feedback goes beyond simply stating whether an answer is right or wrong, explaining why it is correct and providing guidance on how to correct the error. Feedback also needs to be provided in a timely manner, not days or weeks late, so that students still remember the context of their work. Teachers who are skilled at providing feedback will help students develop self-evaluation skills. They learn to critically examine their own work, identify strengths and weaknesses, and plan for improvement. These skills will continue into adulthood, making them independent, lifelong learners. The literature shows that formative feedback has a significant impact on improving self-regulated learning and academic performance (Nicol & Macfarlane-Dick, 2006; Seran & Kurniawan, 2025).

Developing self-regulation also requires models or role models for students to observe. Teachers who demonstrate self-regulation in their work, such as arriving on time, thoroughly preparing lessons, and continually learning new things, serve as powerful role models. Students not only hear theories about the importance of self-regulation, but also witness firsthand how self-regulation is practiced in real life. They see that successful adults also need to manage themselves, set goals, and evaluate progress. This modeling is more effective than a thousand words of advice. Schools can also bring in successful alumni to share their experiences about how self-regulation helped them achieve their current positions. Real-life stories from figures relevant to students' lives have a significant inspirational impact. This modeling is more effective than mere verbal instruction. This aligns with the social cognitive perspective, which emphasizes the role of observational learning in developing self-regulation (Schunk & Zimmerman, 2007; Sajjapong et al., 2025).

Parents, as primary educators at home, also play a central role in strengthening self-regulation. Collaboration between school and home is crucial for consistent self-regulation

development across both environments. Schools need to educate parents about the importance of self-regulation and how they can support it at home. Parents can help by providing structured daily routines, limiting screen time, and praising effort, not just results. They also need to be role models by demonstrating self-regulation in their daily lives, such as managing family finances well, keeping promises, or consistently practicing religious practices. When children see consistency between what is taught in school and what is practiced at home, the process of internalizing values is smoother. Research shows that parental involvement positively contributes to the development of children's self-regulated learning (Jeynes, 2012; Safira et al., 2022).

The challenges of strengthening self-regulation in the digital age should not be underestimated. Various digital platforms are designed to make users addicted, with features that psychologically trigger dopamine. Students must contend with the power of tech industry giants who want them to spend more time on screens. In this situation, self-regulation becomes increasingly important and increasingly difficult to develop. Schools need to explicitly teach digital literacy, which includes the ability to manage themselves online. Students need to be equipped with an understanding of how technology works to avoid becoming victims of manipulation. They also need to be trained in practical techniques such as managing notifications, using website blocking apps, and creating device-free zones. Without these skills, self-regulation will be overwhelmed by the constant temptations of digital devices. Recent studies have shown that self-regulation skills are a protective factor against the negative impact of digital distractions on academic performance (Broadbent & Poon, 2015; Wardayanti et al., 2022; Rojak, 2025).

The effectiveness of learning outcomes achieved through strong self-regulation will be evident in various indicators. Quantitative indicators such as test scores and class ranking are certainly important, but qualitative indicators such as self-confidence, independence, and a love of learning are equally important. Students who have internalized self-regulation will continue learning even after leaving school. They will read books, take courses, or seek information out of internal motivation, not because of job demands. They will become individuals who continue to develop, adapt to change, and are able to face new challenges with composure. This is the true learning outcome that is the ultimate goal of education: the development of lifelong learners who have autonomy and full responsibility for their own development. Meta-analyses show that self-regulated learning is strongly correlated with academic achievement and long-term competency development (Dent & Koenka, 2016; Rojak & Irfan, 2025).

Strengthening self-regulation has a broad and profound impact on the effectiveness of learning outcomes. Self-regulation influences the cognitive strategies students use, their motivation, their management of time and the learning environment, their ability to seek help, and their response to failure. These impacts accumulate into quality learning outcomes, not only in terms of high grades but also in terms of deep and lasting understanding. Schools and teachers play a crucial role in strengthening self-regulation through appropriate curriculum design, constructive feedback, role modeling, and collaboration with parents. In the digital age full of temptations, strengthening self-regulation is increasingly crucial to ensure students are not only academically successful but also able to manage themselves amidst the overwhelming flow of information and distractions (Suwito et al., 2021).

4. Conclusion

This literature research has yielded the understanding that self-regulation is a psychological process that is key in transforming compliance with external school rules into behavioral regularities that emerge from personal awareness. The self-regulation process occurs through a series of interrelated stages, including goal setting, strategic planning, self-monitoring, evaluation, and adjustment. The success of this process is largely determined by the student's internal motivation, appropriate environmental support, positive direct experiences, and healthy emotional management. Solidly developed self-regulation directly impacts the effectiveness of learning outcomes by improving the quality of cognitive strategies, strengthening intrinsic motivation, improving time management and the learning environment, and developing the ability to constructively cope with failure. Learning outcomes achieved through processes involving self-regulation are of superior quality, including enduring understanding, the ability to transfer knowledge, and the formation of a disposition as a lifelong learner. Schools and teachers have a strategic role to strengthen self-regulation through curriculum design that supports autonomy, providing formative feedback, providing role models, and collaborating with parents.

The theoretical implication of this study is the need to expand theories of social learning and value internalization to incorporate self-regulation as a central mechanism bridging external influences and the formation of internal dispositions. Theories on motivation and discipline need to accommodate the understanding that self-regulation is not simply a technical skill, but rather a psychological capacity that develops through complex interactions between the individual and the environment. Practically, these findings require schools to redesign their discipline-building approach, which has focused too much on rule enforcement and sanctions, toward one that prioritizes the development of students' self-regulatory capacity. Curricula need to be integrated with programs for developing metacognitive and self-management skills. Teachers need to be equipped with the competencies to become facilitators of self-regulation, not simply enforcers. Assessment systems need to be geared toward providing feedback that builds awareness, rather than simply labeling success or failure. Parents need to be involved as partners in creating a consistent environment that supports the development of self-regulation at home.

Further research is recommended to conduct empirical studies using a longitudinal approach to observe the development of students' self-regulation over time and the factors that influence it. The development of valid and reliable self-regulation measurement instruments, capable of capturing both process and outcome dimensions, is essential to support further research. Intervention research is also needed to test the effectiveness of various self-regulation strengthening programs in schools. For educational practitioners, it is recommended to take concrete steps by integrating self-regulation skills instruction into daily learning activities, rather than as a separate program. Schools can form teacher communities of practice to share strategies to facilitate student self-regulation. Parents are advised to communicate more actively with teachers about their children's self-regulation development and work together to find solutions if obstacles are encountered. Policymakers need to consider strengthening self-regulation as an indicator of educational success, on par with academic achievement.

Reference

- Ahmed, W., Van der Werf, G., Kuyper, H., & Minnaert, A. (2013). Emotions, self-regulated learning, and achievement in mathematics: A growth curve analysis. *Journal of Educational Psychology*, 105(1), 150–161. <https://doi.org/10.1037/a0030160>
- Akmal, D., Kurniawan, D., Darmawan, D., & Wardani, A. (2015). *Manajemen pendidikan*. Intipresindo Pustaka.
- Akmal, M. N., El-Yunusi, M. Y. M., Hardyansah, R., Putra, A. R., Darmawan, D., Masnawati, E., & Hariani, M. (2024). Pendampingan baca Al-Qur'an: Penyelenggaraan kegiatan tahsin tilawah Al-Qur'an sebagai upaya penyempurnaan bacaan Al-Qur'an santri. *Pelayanan Unggulan: Jurnal Pengabdian Masyarakat Terapan*, 1(2), 6–17. <https://doi.org/10.62951/unggulan.v1i2.249>
- Al Laisty, M. D., Darmawan, D., & Fajar, A. S. M. (2024). The role of leadership style in building a discipline culture in pesantren: Facing the challenges of social and technological change. *Bulletin of Science, Technology and Society*, 3(3), 62–68.
- Al Mursyidi, B. M., & Darmawan, D. (2023). The influence of academic success of Islamic religious education and social media involvement on student morality. *Al-Fikru: Jurnal Ilmiah*, 17(2), 321–331. <https://doi.org/10.51672/alfikru.v17i2.278>
- Aleven, V., McLaughlin, E., Glenn, R., & Koedinger, K. (2016). Instruction based on adaptive learning technologies. *Educational Psychology Review*, 28(2), 221–237.
- Alfaaza, M. F., Rofiuddin, A. N., & Darmawan, D. (2025). Strategies of Islamic religious education teachers in overcoming students' habit of swearing and profanity (Study on formal and non-formal educational institutions). *Journal of Islamic Elementary Education*, 3(2), 340–349. <https://doi.org/10.32806/islamentary.v3i2.993>
- Alhadabi, A., & Karpinski, A. C. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in university students. *International Journal of Adolescence and Youth*, 25(1), 519–535. <https://doi.org/10.1080/02673843.2019.1679202>
- Aliyah, N. D., & Masnawati, E. (2022). Implementation of character education in schools: Barriers, constraints, and the moral aspects of the young generation. *Journal of Social Science Studies*, 2(1), 119–126.
- Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M., & Norman, M. (2010). How learning works: Seven research-based principles for smart teaching. *Educational Psychology Review*, 22(2), 159–167.
- Anderman, E. M., & Anderman, L. H. (2019). Classroom motivation and self-regulated learning. *Educational Psychologist*, 54(3), 155–170.
- Andrade, H., & Brookhart, S. (2016). The role of classroom assessment in supporting self-regulated learning. *Educational Psychologist*, 51(2), 293–309. https://doi.org/10.1007/978-3-319-39211-0_17
- Arifin, S., Marfiyanto, T., Herisasono, A., Zakki, M., Efendi, W., Mujito, M., Nafiin, D., & Darmawan, D. (2022). Nilai-nilai pendidikan dan kebersamaan dalam tradisi perayaan Isra Mikraj di Kecamatan Krian. *Jurnal Pendidikan, Penelitian, dan Pengabdian Masyarakat*, 2(1), 43–48.
- Asrofi, M. I., Alifkhan, M., Khosla, N. H., & Darmawan, D. (2025). Pengaruh minat baca, kebiasaan belajar, dan pendidikan karakter terhadap prestasi belajar siswa setingkat SMA. *Jurnal Ilmu Pengetahuan Naratif*, 6(2), 155–186.
- Bayhaqi, H. N., Rafsanjani, M. Z., & Darmawan, D. (2025). Pengaruh kedisiplinan belajar dan kompetensi guru terhadap prestasi belajar siswa. *FONDATLA*, 9(2), 393–408. <https://doi.org/10.36088/fondatia.v9i2.5739>
- Boekaerts, M., & Corno, L. (2005). Self-regulation in the classroom: A perspective on assessment and intervention. *Applied Psychology*, 54(2), 199–231. <https://doi.org/10.1111/j.1464-0597.2005.00205.x>
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies and academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27, 1–13. <https://doi.org/10.1016/j.iheduc.2015.04.007>
- Chada, N. S. (2023). Structured evaluation in mentoring programs for student career development in higher education. *Bulletin of Science, Technology and Society*, 2(3), 64–71.
- Chang, G. C. (2006). *Strategic planning in education: Some concepts and steps*. UNESCO.
- Chen, F. (2025). The relationship between digital literacy and college students' academic achievement: The chain mediating role of learning adaptation and online self-regulated learning. *Frontiers in Psychology*, 16, 1590649. <https://doi.org/10.3389/fpsyg.2025.1590649>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Darmawan, D. (2013). *Prinsip-prinsip perilaku organisasi*. Pena Semesta.
- Darmawan, D. (2024). Distribution of six major factors enhancing organizational effectiveness. *Journal of Distribution Science*, 22(4), 47–58.
- Darmawan, D., Maghfiroh, P. L., & Romadhoni, A. N. H. (2026). Pengaruh disiplin belajar dan motivasi belajar terhadap hasil belajar siswa sekolah dasar. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 12(1), 123–148. <https://doi.org/10.36989/didaktik.v12i01.11442>
- Darmawan, D., Oktavia, A., & Albaar, A. S. (2026). Pengaruh perhatian orang tua dan motivasi belajar terhadap kedisiplinan siswa sekolah menengah atas. *Jurnal Inovasi Pembelajaran dan Teknologi Modern*, 10(1).
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PL1104_01
- Dent, A. L., & Koenka, A. C. (2016). The relation between self-regulated learning and academic achievement across childhood and adolescence: A meta-analysis. *Educational Psychology Review*, 28(3), 425–474. <https://doi.org/10.1007/s10648-015-9320-8>
- Dignath, C., & Büttner, G. (2008). Components of fostering self-regulated learning among students: A meta-analysis. *Metacognition and Learning*, 3, 231–264. <https://doi.org/10.1007/s11409-008-9029-x>
- Earl, L., & Katz, S. (2008). Getting to the core of learning: Using assessment for self-monitoring and self-regulation. In *Unlocking assessment* (pp. 104–118). Routledge. <https://doi.org/10.4324/9780203930939-15>
- Fajar, A. S. M., Fauzi, A., Darmawan, D., Putra, A. R., & Arifin, S. (2025). Transformation of Islamic religious education in the digital landscape and its implications for pedagogical innovation. *International Journal of Service Science, Management, Engineering, and Technology*, 8(1), 15–20.
- Gani, A. (2025). Character education and children's socio-emotional development in the social interaction environment. *Studi Ilmu Sosial Indonesia*, 5(1), 103–116.
- Gautama, E. C., & Mardikaningsih, R. (2022). Driving sustainable behavior change through education and public awareness. *Journal of Social Science Studies*, 2(1), 259–264.
- Germani, S., Palombi, T., & D'Amico, M. (2022). The relationship between teachers' autonomy support and students' motivation, achievement, and well-being. *EDULEARN Proceedings*. <https://doi.org/10.21125/edulearn.2022.2288>
- Gorbunovs, A., Kapeniaks, A., & Cakula, S. (2016). Self-discipline as a key indicator to improve learning outcomes in e-learning environment. *Procedia - Social and Behavioral Sciences*, 231, 256–262. <https://doi.org/10.1016/j.sbspro.2016.09.100>

- Haqiqi, M. F., & Darmawan, D. (2023). School environment and independence: Effects on academic achievement in MTs Nahdlatul Athfal Gersempal Omben Sampang students. *Kabillah (Journal of Social Community)*, 8(2), 171–180.
- Hariani, M., & Mardikaningsih, R. (2022). The social education role in shaping students' global awareness in higher education. *Journal of Social Science Studies*, 2(1), 55–60.
- Hariani, M., & Masnawati, E. (2022). Assessing the impact of poverty on children's access to and quality of education: Implications for interventions and breaking the poverty cycle. *Journal of Social Science Studies*, 2(2), 1–6.
- Hariani, M., & Wardoyo, D. T. W. (2024). Servant leadership mechanisms enabling psychological capital formation for academic staff in higher education. *Journal of Science, Technology and Society (SICO)*, 5(2), 45–58.
- Imanuddin, F., & Darmawan, D. (2024). Enhancing learning effectiveness strategy: Self-directed learning and learning facilities at SMK Teknik Pal Surabaya. *Jurnal Al-Qayyimah*, 6(1), 99–105.
- Irawan, A. I., Hariani, M., Mardikaningsih, R., Issalillah, F., Khayru, R. K., Darmawan, D., & Evendi, W. (2023). Integrasi video learning dan praktik pada pembelajaran wudhu untuk membangun pondasi keagamaan usia dini. *Jurnal Pendidikan, Penelitian, dan Pengabdian Masyarakat*, 3(2), 61–66.
- Irfan, M., Al-Hakim, Y. R., & Sigit, D. S. (2024). Personal values and job satisfaction: A qualitative perspective on employee performance in the education sector. *Bulletin of Science, Technology and Society*, 3(3), 1–6.
- Ismail, I., El-Yunusi, M. Y. M., Evendi, W., & Ghozali, S. (2024). Establishing a digital school environment friendly to children with special needs through inclusive policies and practices. *Journal of Social Science Studies*, 4(1), 261–270.
- Jeynes, W. (2012). A meta-analysis on the effects of parental involvement on students' academic outcomes. *Urban Education*, 47(4), 706–742. <https://doi.org/10.1177/0042085912445643>
- Khairi, M. (2023). Technology optimization for equitable access to education and health services in poverty alleviation. *Bulletin of Science, Technology and Society*, 2(2), 51–58.
- Khayru, R. K. (2023). Educational and communicative determinants of public attitudes toward vaccination and health recommendations across diverse societies. *Journal of Science, Technology and Society (SICO)*, 4(2), 31–42.
- Khayru, R. K., Issalillah, F., Mardikaningsih, R., Putra, A. R., & Darmawan, D. (2025). The impact of Islamic digital literacy on college students' mental health and charity behavior. In *Proceedings of the International Conference on Educational Management* (Vol. 3, No. 1, pp. 103–113).
- Khunafah, K., Aliyah, N. D., & Darmawan, D. (2024). Pengaruh kemandirian belajar, lingkungan belajar, dan metode pembelajaran terhadap prestasi belajar siswa SDN di Desa Bangeran Kecamatan Dukun Kabupaten Gresik. *Jurnal Ilmu Pendidikan Islam*, 22(2), 111–125.
- Konrad, M., Keesey, S., Ressa, V. A., Alexeeff, M., Chan, P. E., & Peters, M. T. (2014). Setting clear learning targets to guide instruction for all students. *Intervention in School and Clinic*, 50(2), 76–85. <https://doi.org/10.1177/1053451214536042>
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Sage Publications.
- Laili, N., & Darmawan, D. (2024). Investigating the impact of educational media and teaching methods on student interest at SMP Buana Waru Sidoarjo. *Jurnal Pendidikan Inovatif*, 6(2), 456–471.
- Lee, J., Moon, J., & Cho, B. (2015). The mediating role of self-regulation between digital literacy and learning outcomes in the digital textbook for middle school English. *Educational Technology International*, 16(1), 58–83.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications. [https://doi.org/10.1016/0147-1767\(85\)90062-8](https://doi.org/10.1016/0147-1767(85)90062-8)
- Lindra, K. F. P., Mardikaningsih, R., Safira, M. E., Chasanah, U., Darmawan, D., El-Yunusi, M. Y. M., & Yulianis, S. F. (2024). Partisipasi mendukung anak yatim dengan kompetisi Olimpiade Al-Qur'an dan Matematika. *Pelayanan Unggulan: Jurnal Pengabdian Masyarakat Terapan*, 1(2), 36–45. <https://doi.org/10.62951/unggulan.v1i2.253>
- Lozano-Jiménez, J. E., Huéscar, E., & Moreno-Murcia, J. A. (2020). From autonomy support and grit to satisfaction with life through self-determined motivation and group cohesion in higher education. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.579492>
- Maharani, L., & Darmawan, D. (2024). Factors affecting learning achievement: Learning discipline and self-regulation at MTs Wachid Hasyim Surabaya. *TADIBUNA: Jurnal Pendidikan Agama Islam*, 7(1), 12–20. <https://doi.org/10.30659/jpai.7.1.12-20>
- Majid, A. B. A., Shofiyah, R., Masnawati, E., Masfufah, M., & Safira, M. E. (2023). The society's response to the intentions of studying the Islamic religious education program. *International Journal of Service Science, Management, Engineering, and Technology*, 4(3), 7–12.
- Mardikaningsih, R. (2014). Faktor-faktor yang memengaruhi prestasi belajar siswa. *Jurnal Ilmu Pendidikan*, 8(1), 13–24.
- Mardikaningsih, R. (2014). Metode pembelajaran dan variasi penerapannya. *Jurnal Ilmiah Manajemen Pendidikan Indonesia*, 1(1), 43–54.
- Mardikaningsih, R., Darmawan, D., Khayru, R. K., & Issalillah, F. (2025, October). The influence of social media use on students' knowledge of green management and pro-environmental attitudes. In *Proceeding of International Management Conference and Progressive Papers* (Vol. 3, No. 1).
- Mardikaningsih, R., Masnawati, E., & Aisyah, N. (2021). Fostering competence for sustainability through education and adaptive global citizenship. *Journal of Social Science Studies*, 1(2), 267–272.
- Martins van Jaarsveld, G., Wong, J., Baars, M., Specht, M., & Paas, F. (2025, January). Goal setting in higher education: How, why, and when are students prompted to set goals? A systematic review. *Frontiers in Education*, 9, 1511605. <https://doi.org/10.3389/feduc.2024.1511605>
- Masfufah, M., & Darmawan, D. (2023). Developing pedagogical standards and AI policies for adaptive learning in equitable and safe school education. *Journal of Practice Learning and Educational Development*, 3(4), 400–413.
- Mendonca, C. N., Wahyudi, Kabalmay, R. N. K., & Amri, M. W. (2021). Developing technical and social competencies for future-ready education in digitally mediated labor environments. *Journal of Social Science Studies*, 1(2), 259–266.
- Moody, Z. (2020). Children's rights to, in and through education: Challenges and opportunities. *Solsko Polje*, 31(3/4), 11–25. [https://doi.org/10.32320/1581-6044.31\(3-4\)11-25](https://doi.org/10.32320/1581-6044.31(3-4)11-25)
- Mubarok, L., & Darmawan, D. (2025). Pengaruh disiplin belajar terhadap hasil belajar Madrasah Ibtidaiyah. *PHEDHERAL*, 22(2), 19–32.
- Mubasysyir, M. M., & Darmawan, D. (2024). Improving performance: The role of teacher professionalism and discipline at the Tahsinul Akhlaq Bahrul Ulum Foundation Surabaya. *Hikamatzu | Journal of Multidisciplinary*, 1(1), 337–354.
- Mudzakkir, M., & Darmawan, D. (2024). The influence of teacher teaching styles and learning motivation on the learning achievement. *Edu-Rilqia: Jurnal Kajian Pendidikan Islam dan Keagamaan*, 8(1), 79–91. <https://doi.org/10.47006/er.v8i1.19707>

- Musthofa, M. A. R., & Darmawan, D. (2024). School principal leadership and work environment: Driving teacher motivation at the Tanbihul Ghoflin Al Mustofa Sidoraharjo Kedamean Foundation. *Hikamatzu | Journal of Multidisciplinary*, 1(2), 46-61.
- Musyaibin, M., & Darmawan, D. (2024). Unraveling the impact of teacher competence and parenting styles on student motivation at MA Nw Kotaraja, East Lombok, NTB. *Hikamatzu | Journal of Multidisciplinary*, 1(1), 355-371.
- Naser, M. J. A., & Darmawan, D. (2024). Tapping into self-efficacy and learning facilities for enhanced academic achievement: A case study of MI NU Brebek Waru students. *Hikamatzu | Journal of Multidisciplinary*, 1(1), 140-153.
- Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199-218. <https://doi.org/10.1080/03075070600572090>
- Niswatin, K., & Darmawan, D. (2025). Pengaruh kompetensi kepribadian guru PAI terhadap akhlak setingkat sekolah menengah pertama. *TSAQOFAH Ypeodume.u: Darul Yasin Al Sys*, 5(1), 40-54. <https://doi.org/10.58578/tsaqofah.v5i1.4250>
- Nugraemi, U., & Usman, O. (2019). Effect of learning habit, learning environment, and support parents on student learning outcomes. *Learning Environment, and Support Parents on Student Learning Outcomes, July 5, 2019*. <https://doi.org/10.2139/ssrn.3415274>
- Nuraini, R., Halizah, S. N., Sinambela, E. A., Mujisulistyo, Y. F., Darmawan, D., Arrozi, F., & Arifin, S. (2024). Upaya membentuk kepribadian unggul peserta didik melalui pendidikan Al-Qur'an. *Jurnal Pendidikan, Penelitian, dan Pengabdian Masyarakat*, 4(1), 57-64.
- Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16(4), 385-407. <https://doi.org/10.1007/s10648-004-0006-x>
- Rahmaniyah, S. B., & Darmawan, D. (2025). Pengaruh lingkungan keluarga terhadap hasil belajar siswa setingkat Madrasah Tsanawiyah (MTs). *Jurnal Edukasi dan Literasi Pendidikan*, 6(3). <https://doi.org/10.62288/creativity.v3i1.32>
- Rahmawati, D., & Darmawan, D. (2024). The relationship between assignment methods and social interaction with the level of student learning activeness at Madrasah Ibtidaiyah Darul Ulum Tandes. *International Journal of Islamic Thought and Humanities*, 3(1), 49-58. <https://doi.org/10.54298/ijith.v3i1.186>
- Ramle, N. L. B. (2021). Developing creativity and critical thinking skills through art education. *Journal of Social Science Studies*, 1(1), 169-172.
- Ramle, N. L. B., & Mardikaningsih, R. (2024). Empowering rural women: Addressing barriers to education and entrepreneurship for family economic welfare. *International Journal of Service Science, Management, Engineering, and Technology*, 5(1), 27-30.
- Rizal, M. I., & Darmawan, D. (2024). Digital literacy and utilization of learning media: Their contribution to academic achievement in Intensif Taruna Pembangunan High School, Surabaya. *Jurnal Inovasi Pendidikan*, 7(3), 22-30.
- Rojak, J. A. (2021). The importance of civic education to increase community legal awareness. *Journal of Social Science Studies*, 1(1), 44-50.
- Rojak, J. A. (2025). Digital technology as a driver of innovative culture and creative engagement of higher education human resources. *International Journal of Service Science, Management, Engineering, and Technology*, 7(3), 11-17.
- Rojak, J. A., & Irfan, M. (2025). Urban-rural educational access inequality within economic structure and policy frameworks. *International Journal of Service Science, Management, Engineering, and Technology*, 8(1), 21-29.
- Rojak, J. A., & Khayru, R. K. (2022). Disparities in access to education in developing countries: Determinants, impacts, and solution strategies. *Journal of Social Science Studies*, 2(1), 31-38.
- Rojak, J. A., Fajar, A. S. M., & Darmawan, D. (2024). A comprehensive review of counseling's contribution to student character development in university education. *International Journal of Service Science, Management, Engineering, and Technology*, 6(1), 13-18.
- Ryan, R. M., & Deci, E. L. (2000). The "What" and "Why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01
- Safira, M. E., Aliyah, N. D., Rodiyah, S. K., Nuraini, R., & Halizah, S. N. (2022). Fostering pro-environmental learning through family-centered education. *Journal of Social Science Studies*, 2(2), 243-248.
- Sajjapong, T., Darmawan, D., & Marsal, A. P. (2022). The role of social stereotypes in shaping opportunities and inequalities in society: Their impact on education, employment, and intergroup interactions. *Bulletin of Science, Technology and Society*, 1(1), 44-49.
- Sajjapong, T., Irfan, M., & Rojak, J. A. (2025). Fostering multicultural collaboration in higher education through inclusive communication. *Journal of Science, Technology and Society (SICO)*, 6(1), 25-38.
- Sandelowski, M., & Barroso, J. (2007). *Handbook for synthesizing qualitative research*. Springer Publishing Company.
- Schunk, D. H., & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly*, 23(1), 7-25. <https://doi.org/10.1080/10573560600837578>
- Seran, G., & Kurniawan, Y. (2025). Data consistency and optimization of performance evaluation in educational institutions. *Journal of Science, Technology and Society (SICO)*, 6(2), 59-68.
- Shidiq, A., Majid, A. B. A., Darmawan, D., Saleh, M., Evendi, W., Anwar, M. S., & Bangsu, M. (2024). Penguatan nilai-nilai sosial melalui kegiatan keagamaan berbasis komunitas. *Manfaat: Jurnal Pengabdian Pada Masyarakat Indonesia*, 1(1), 1-10.
- Suwito, Yulianis, M. S. F., Evendi, W., Zakki, M., & Mujito. (2021). Regulatory effectiveness in ensuring access to education and child health in low income communities through scholarship equity. *Journal of Social Science Studies*, 1(2), 181-186.
- Thelma, C. C., Sain, Z. H., Shogbesan, Y. O., Phiri, E. V., & Akpan, W. M. (2024). Digital literacy in education: Preparing students for the future workforce. *International Journal of Research*, 11(8), 327-343.
- Umroh, U., & Darmawan, D. (2024). The dynamics of school environment and the impact of parental attention on the academic achievement of students at SMA Negeri 1 Ketapang Sampang. *Fondatia*, 8(1), 77-87. <https://doi.org/10.36088/fondatia.v8i1.4548>
- Ursache, A., Blair, C., & Raver, C. C. (2012). The promotion of self-regulation as a means of enhancing school readiness and early achievement in children at risk for school failure. *Child development perspectives*, 6(2), 122-128. <https://doi.org/10.1111/j.1750-8606.2011.00209.x>
- Wardayanti, Y. P., Amin, F. M., & Permadi, A. (2022). Analysis of measurement of readiness and success of e-learning using the method of technology readiness and acceptance model (TRAM) at the Islamic University of Darul Ulum Lamongan. *International Journal of Service Science, Management, Engineering, and Technology*, 2(1), 5-14.
- Warin, A. K. (2022). Reconstructing community futures through non-formal education for participatory and inclusive social advancement. *Journal of Social Science Studies*, 2(1), 183-188.
- Zahid, R. A., Fajar, A. S. M., Fauzi, A., El-Yunusi, M. Y. M., Darmawan, D., & Abror, S. (2025). Upaya meningkatkan kesadaran dan keterampilan mahasiswa dalam menghadapi era kecerdasan buatan di masa depan. *Jurnal Pengabdian Ibnu Sina*, 4(2), 129-139.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64-70. https://doi.org/10.1207/s15430421tip4102_2