AG EDITOR

Optimizing guidance and counseling programs with the concept of self-regulated learning theory measurement in islamic boarding school-based schools

Optimización de los programas de orientación y asesoramiento con el concepto de la teoría del aprendizaje autorregulado en las escuelas islámicas con régimen de internado

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ABSTRACT

Introduction: self-regulated learning (SRL) is a fundamental component of modern education because it supports learners' ability to manage their learning processes effectively and independently. As digital platforms increasingly shape learning environments, understanding SRL becomes essential to address challenges related to motivation, persistence, and attention. SRL is also linked to key 21st-century competencies, making its optimization important for improving educational quality.
Objective: this study aims to examine the urgency of SRL in contemporary education and to analyze the effectiveness of SRL measurement instruments used to design accurate instructional interventions.
Method: this research employs a qualitative design using a literature review approach to analyze theoretical perspectives, empirical findings, and validated SRL instruments. Sources include studies on SRL development, digital learning environments, and assessment tools across educational levels.
Development: findings indicate that SRL plays a central role in strengthening learners' independence, critical thinking, creativity, and collaboration. Valid and reliable SRL instruments enable teachers to identify students' strengths and challenges, supporting more targeted learning strategies. However, digital learning also presents obstacles such as online distractions, fluctuating motivation, and reduced focus. Appropriate use of educational technologies can help personalize learning and facilitate continuous monitoring of student progress.
Conclusion: self-regulated learning remains a key driver of adaptive, innovative, and sustainable learning. Its success depends on teacher support, conducive learning environments, and the quality of assessment instruments. Future research should explore the applicability of SRL instruments in diverse contexts and examine technological, familial, and social factors influencing SRL development. Strengthening SRL holistically is expected to enhance learning outcomes and overall educational quality.

Keywords: Self-Regulated Learning; Learning Assessment; Digital Learning.

RESUMEN

Introducción: el aprendizaje autorregulado (SRL) es un componente fundamental de la educación moderna, ya que apoya la capacidad de los estudiantes para gestionar el proceso de aprendizaje de manera eficaz e independiente. A medida que aumenta la integración de las plataformas digitales en el aprendizaje, la comprensión del SRL se vuelve cada vez más importante para hacer frente a los nuevos retos relacionados con la motivación, la persistencia y la atención. El SRL también está estrechamente relacionado con las

competencias del siglo XXI, por lo que su optimización es crucial para mejorar la calidad de la educación.
Objetivo: esta investigación tiene como objetivo examinar la urgencia del SRL en el contexto de la educación contemporánea y analizar la eficacia de los instrumentos de medición del SRL utilizados para diseñar intervenciones de aprendizaje precisas y específicas.
Método: la investigación utiliza un diseño cualitativo con un enfoque de revisión bibliográfica para analizar el marco teórico, los hallazgos empíricos y los instrumentos de SRL que han sido validados. Las fuentes bibliográficas incluyen estudios sobre el desarrollo del SRL, el entorno de aprendizaje digital y los instrumentos de evaluación en los distintos niveles educativos.
Desarrollo: los resultados muestran que el SRL desempeña un papel fundamental en el fortalecimiento de la independencia, el pensamiento crítico, la creatividad y la colaboración de los alumnos. Los instrumentos de SRL válidos y fiables ayudan a los profesores a identificar las fortalezas y los retos de aprendizaje de los alumnos, lo que les permite diseñar planes de aprendizaje más eficaces. Sin embargo, la era digital plantea obstáculos en forma de distracciones en línea, fluctuaciones en la motivación y disminución de la concentración. El uso adecuado de la tecnología educativa puede mejorar la personalización del aprendizaje y facilitar el seguimiento continuo del progreso.
Conclusión: el aprendizaje autorregulado sigue siendo el motor principal del aprendizaje adaptativo, innovador y sostenible, pero su éxito depende del apoyo de los profesores, de un entorno de aprendizaje propicio y de la calidad de los instrumentos de evaluación utilizados. Las investigaciones futuras deben explorar la aplicación de los instrumentos de SRL en diversos contextos, así como la influencia de los factores tecnológicos, familiares y sociales en el desarrollo del SRL. Se espera que el fortalecimiento holístico del SRL mejore los resultados del aprendizaje y la calidad de la educación en general.

Palabras clave: Aprendizaje Autorregulado; Evaluación del Aprendizaje; Aprendizaje Digital.

INTRODUCTION

Self-directed learning has become an important approach in modern education. The digital age and globalization have presented challenges that require students to have the ability to learn independently.[1] Self-Regulated Learning (SRL) is a concept that describes an individual's skills in managing their learning process, including planning, monitoring, evaluating, and adjusting learning strategies to achieve predetermined goals.[2] Learners who are able to apply SRL effectively will find it easier to adapt to the dynamics of change.[3] This concept not only aims to improve academic learning outcomes, but also encourages students to become lifelong learners. These advantages make SRL an important competency in 21st century education.[4] Many education systems are now beginning to integrate this approach into their curricula to equip students with relevant critical skills.

A deep understanding of SRL plays an important role in its application in educational settings. Teachers and lecturers need to understand the concepts and indicators that support the success of SRL in order to apply it optimally. The diversity of learners' learning styles requires individual strategies that support this independent learning approach.[5] Measuring the effectiveness of SRL is an important step to ensure that each individual derives maximum benefit from the learning process. The integration of SRL in formal and informal education supports the development of 21st-century competencies, such as critical thinking, creativity, communication, and collaboration. The use of educational technology is one way to strengthen the implementation of SRL in the classroom. Students who have independent learning skills can better manage various academic challenges.[6] The development of SRL also contributes to the formation of a disciplined and competitive character.

SRL measurement instruments play an important role in evaluating various aspects of independent learning.[7] These measurements include intrinsic motivation, time management, emotional regulation, and students' reflective abilities. The validity and reliability of measurement tools are crucial factors in assessing the effectiveness of independent learning. Research shows that these instruments can help educators design more targeted intervention strategies.[8] Analysis of SRL measurement results provides deep insights into the diverse needs of learners. Technological developments also enable educators to use digital platforms to monitor students' SRL progress. Innovations continue to be made to create measurement tools that are relevant to the needs of the times. Effective measurement tools can support students in managing learning challenges, thereby strengthening guidance and counseling at various levels of education.[9,10]

There are still many challenges in implementing SRL, especially in an increasingly digital era. Online learning often makes it difficult for students to maintain their motivation to learn and avoid digital distractions. An unstructured learning environment makes it difficult for students to manage their time or

maintain focus.[8] Recent studies show that teacher guidance remains important even though SRL encourages student independence. The implementation of digital strategies such as reminder applications and study schedules is an effective solution in improving SRL. The use of this technology can help students monitor their learning progress in a more organized manner. A student-centered approach also allows for space for exploration and innovation. Further research is needed to understand how the adaptation of SRL can support more flexible guidance and counseling. The roles of parents, teachers, and technology must complement each other in creating an educational ecosystem that supports guidance and counseling to lead to independent learning.[11]

Independent learning is an approach in which individuals actively organize, manage, and direct their own learning activities. This process includes planning learning objectives, managing time, selecting learning strategies, and evaluating the results achieved. Independent learning does not only rely on guidance from external parties, but emphasizes individual initiative and responsibility in achieving learning objectives.[12,13,14] In the context of modern learning, this approach is becoming more relevant, especially in online learning environments that require the management of motivation, discipline, and learning resources.[15,16]

Self-directed learning is also relevant in the context of lifelong learning. With good self-directed learning skills, individuals are able to adapt to change, develop new competencies, and continue to improve themselves. Therefore, SRL is an important foundation in facing the challenges of an ever-evolving world.[17] Mastery of SRL not only supports academic achievement, but also prepares individuals to become independent, adaptive, and innovative lifelong learners. The SRL-based approach provides flexibility in guidance and counseling.[18]

The theory of Self-Regulated Learning emphasizes the ability of individuals to manage and control their learning process. SRL refers to the active process of learners in planning, monitoring, and evaluating their learning to achieve specific goals.[19] Individuals act as agents responsible for their learning progress by regulating their emotions, motivation, behavior, and learning environment.[20] SRL involves cognitive, metacognitive, and motivational aspects.[21] By applying this theory, learners can understand their strengths and weaknesses and adjust their learning strategies effectively.[22] This concept is in line with the objectives of guidance and counseling in pesantren-based schools that emphasize independent learning.[15,23]

This article examines the concept of SRL in depth, including measurement methods in formal and informal contexts. Theoretical insights from the latest literature are expected to form the basis for the development of relevant education policies. Teachers and counselors can utilize the results of this study to design more effective learning strategies and counseling services.[24] This article also discusses the integration of SRL in guidance and counseling to create sustainable independent learning. Proper implementation contributes to the formation of students' adaptive, innovative, and globally competitive characters.[25]

Overall, this study aims to conduct a literature review on the application of guidance and counseling with the SRL concept for Islamic boarding schools. The hope is that independent learning can be applied through the SRL approach to support the development of students' character and independence as global needs in character education.

METHOD
Type and Approach of Research
This study uses a qualitative method with a literature review approach.[26] The literature review focuses on essential concepts and theories of Self-Regulated Learning (SRL) that underpin the development and validation of the research instrument. It synthesizes empirical studies on SRL, particularly those involving high-ability or accelerated learners, to ensure that the construct measured in this study is theoretically grounded and aligned with previous research.

Research Data Sources
The data in this study were obtained from various secondary literature sources, consisting of scientific journal articles adopted through Scopus and Google Scholar related to scientific studies on SRL theory and counseling guidance leading to independent learning. The criteria for selecting literature considered aspects of relevance, accuracy, and currency, with priority given to publications within the last three years.

Data Collection Techniques
Data collection techniques were carried out through a literature study procedure as described by Ardiansyah, Risnita, and Jailani,[27] which included the following stages: (1) Source identification: Searching for and collecting relevant literature; (2) Literature selection: Selecting sources based on the criteria of relevance, validity, and recency; (3) Literature classification: Grouping sources based on main themes, such as the definition of SRL, characteristics of guidance and counseling in pesantren-based schools, and

independent learning.

Data Analysis Techniques

The data were analyzed using a content analysis approach, referring to the following stages: (1) Filtering and selecting information from the literature relevant to the research objectives regarding SRL; (2) Categorizing the data by grouping the information into main themes, such as cognitive, metacognitive, and motivational aspects in SRL; (3) Connecting and interpreting the categorization results to obtain a comprehensive understanding; (4) Compiling the analysis results logically and structurally to support the research discussion.

DEVLOPMENT

Optimizing Self-Regulated Learning (SRL) to Improve Learning Quality

Self-Regulated Learning (SRL) is the ability of students to manage their learning process independently through various strategic activities. Learners can set specific learning goals, choose relevant learning strategies, monitor the progress of the learning process, and evaluate the results achieved. This ability not only helps improve academic achievement but also prepares learners to become lifelong learners who are adaptive to various changes of the times.[28] SRL can be optimized through effective metacognitive skills training, the development of strong intrinsic motivation, and the use of educational technology that supports personalized learning. The implementation of this strategy enables learners to better identify their learning needs and develop learning methods that suit their potential. Teachers and educators play an important role in facilitating this process, for example by providing constructive feedback. The application of SRL in the curriculum also encourages students to take more responsibility for their own learning process. A conducive learning environment, both in and outside of school, further strengthens the effectiveness of SRL implementation.[29]

In the context of formal education, the integration of SRL into the learning system is very important. This effort is carried out by developing a curriculum that encourages active and reflective learning, which directs students to be directly involved in the learning process.[30] Teachers can create a supportive classroom atmosphere by providing learning aids, such as digital platforms that enable learning progress tracking.[31] The feedback provided by teachers not only serves to evaluate, but also to help students understand their strengths and weaknesses in the learning process. Digital-based educational technology, such as learning management applications or online learning, makes it easier for students to monitor their achievements independently. [32] Technology-based learning environments also support flexibility in terms of time and place, which is particularly relevant in the era of post-pandemic online learning. An education system that supports SRL will help learners develop independent learning skills while improving their 21st-century competencies. Critical thinking, creativity, communication, and collaboration skills developed through SRL contribute greatly to facing the challenges of globalization.[33]

Zimmerman's concept of self-regulation [29] is an important basis for understanding how learners manage their learning process. Self-regulation involves the integrated management of thoughts, emotions, and behavior to achieve learning goals. This ability involves a series of activities, such as setting clear goals, using effective learning strategies, and monitoring performance to see the progress made. Zimmerman also explains that self-regulation is not a fixed attribute, but rather a dynamic process that continues to evolve according to a person's learning experiences. Other studies also emphasize the importance of good learning strategies to encourage deep learning.[34] This research also shows that self-regulation contributes significantly to improved academic performance at various levels of education. Self-regulation allows learners to be more aware of their own potential and take appropriate actions to achieve learning goals. The importance of self-regulation becomes even more apparent in the context of modern learning, which demands a high level of adaptability.

The self-regulation process consists of several important components that support each other. Zimmerman[29] identifies eight main components of self-regulation, namely setting specific goals, using effective learning strategies, monitoring performance, adjusting the learning context, managing time, evaluating strategies, connecting learning outcomes with cause and effect, and adapting methods based on previous experiences. Each of these components contributes to learners' ability to manage their learning process independently. Cognitive control, often referred to as metacognition, plays an important role in helping learners plan, monitor, and evaluate their learning process. Behavioral and emotional control are also integral parts of self-regulation, which allows learners to stay focused on their learning goals despite challenges or distractions. The development of optimal self-regulation requires support from a supportive learning environment and appropriately designed interventions.[35]

The stages of the self-regulation process are divided into three, namely thinking. This can be seen in the image Phases and Process of Self-Regulation According to Zimerman and Moylan as follows.
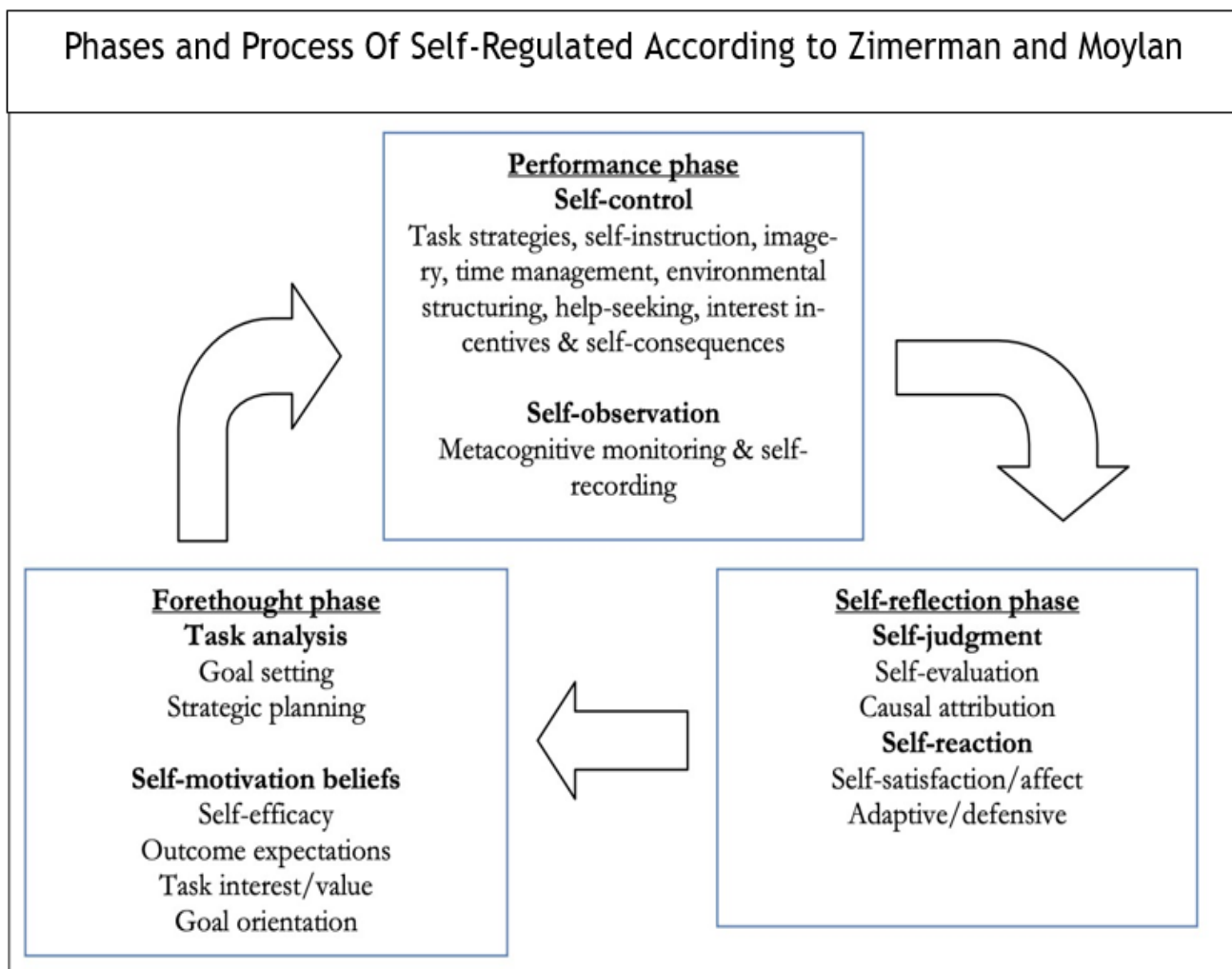
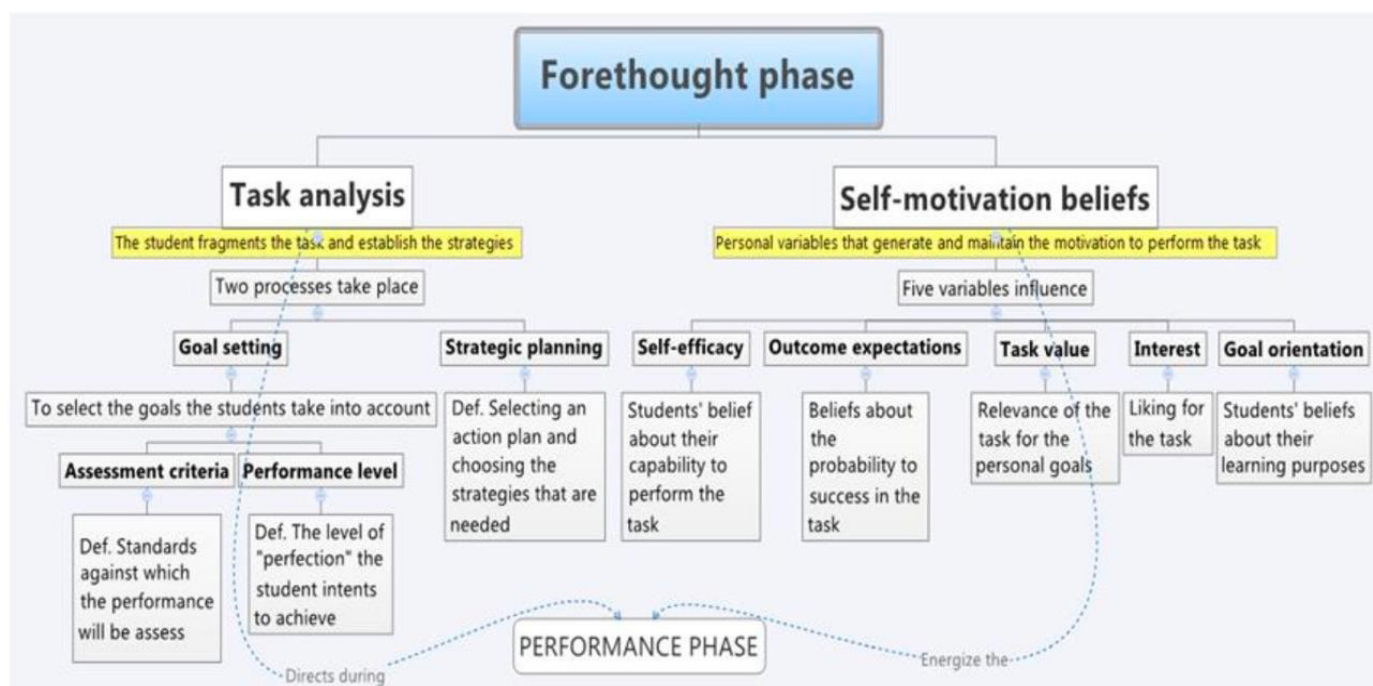**Figure 1.** Phases and Process Of Self-Regulated Accroding Zimerman and Moylan
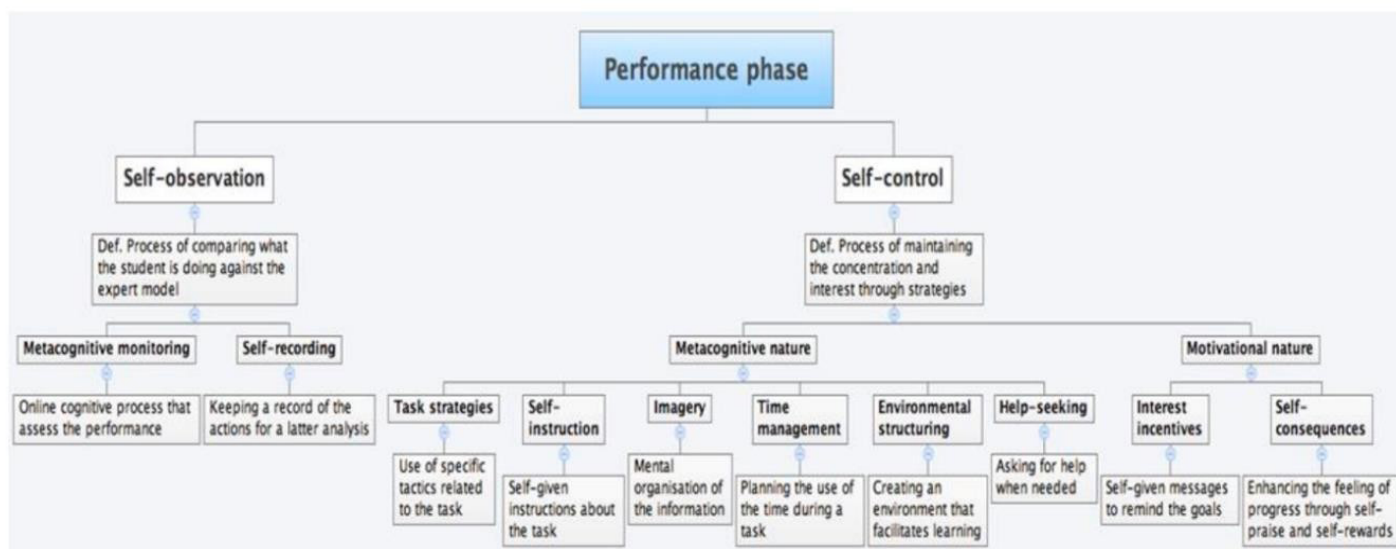

Figure 2. Forethought Phase
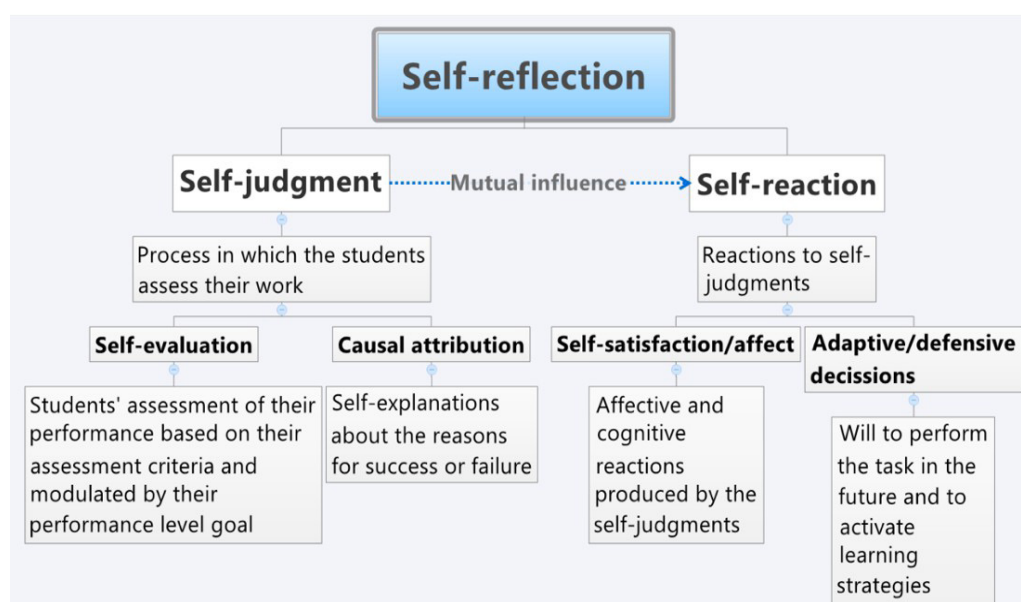
Figure 3. Forethought Phase

Figure 4. Self-Reflection

Valid and reliable measurement instruments are essential for assessing Self-Regulated Learning (SRL) abilities in students. In their development, SRL measurement tools must cover various key dimensions, such as cognitive, metacognitive, and motivational regulation. These instruments can take the form of questionnaires, structured interviews, or technology-based devices designed to comprehensively evaluate independent learning skills The process of developing these instruments requires empirical validation to ensure that they accurately represent the SRL abilities being measured.

In the context of learning, the application of SRL measurement tools can help educators identify the needs and challenges faced by learners in managing their learning processes. The results of these measurements can be used to design more targeted interventions. For example, if learners experience difficulties in motivational regulation, learning programs can be directed towards improving their motivational strategies. Thus, the SRL measurement tool not only functions as an evaluation tool but also as a guide for developing more effective and adaptive learning approaches.

The development and application of the Self-Regulated Learning (SRL) measurement instrument serves as a tool to understand and evaluate an individual's ability to regulate their learning process independently. The main aspects of SRL include thinking, performance, and self-reflection. Each of these aspects plays an important role in the learning process, which affects students' academic outcomes. The cognitive aspect focuses on students' ability to plan, monitor, and evaluate their learning processes. Indicators in this aspect include task analysis, self-motivation beliefs, and goal orientation. Instruments for measuring SRL in this aspect seek

to identify student behavior in setting learning targets and strategies.[29,36,37] Behaviors such as setting grade targets or making study schedules demonstrate students' proactivity in managing their learning process. This is in line with the concept of self-regulation, which emphasizes the importance of planning and self-awareness in achieving learning goals Indicators such as creating planning strategies for learning outside of compulsory hours also demonstrate students' commitment to their learning success. Evaluation of this behavior helps measure the extent to which students can plan and organize their learning process independently.

In the performance aspect, the main focus is on how students apply learning strategies in their daily practices. Indicators included in this category include self-control, time management, and seeking help. Self-control is a key factor in ensuring that students remain focused on their learning goals. Behaviors such as taking notes to aid understanding indicate that students are implementing effective learning strategies. Conversely, a lack of self-control is evident in behaviors that do not support learning, such as laziness in taking notes or a lack of attention in class. Time management is an important skill that allows students to make good use of their study time. Students who study regularly even when there are no tests demonstrate a good level of discipline in managing their study time. Seeking help is an important indicator in identifying students who are aware of their limitations and are willing to seek external support.[29,38,39] This could be asking teachers or friends to understand the material more deeply. All of these indicators are important in assessing students' ability to manage their learning strategies independently.

In terms of self-reflection, students are encouraged to evaluate their learning process independently and adjust the strategies they use. Self-evaluation is an important element of self-reflection because it helps students recognize their strengths and weaknesses in learning.[40,41] Metacognitive monitoring such as "I monitor my learning strategies for improvement" is an important indicator that shows how students assess the effectiveness of their strategies. Self-reactions, whether adaptive or defensive, are also part of self-reflection. For example, feelings of satisfaction or dissatisfaction with learning outcomes reflect the extent to which students can respond to the results they achieve. When students experience failure, adaptive responses such as "Low learning scores make me more persistent in learning" demonstrate the ability to use experience as motivation for growth. Thus, self-reflection helps students to continue learning from their experiences and improve the strategies they have used. These indicators of self-reflection provide important insights into how students can improve themselves through evaluation.

CONCLUSIONS

Based on the discussion regarding the optimization of Self-Regulated Learning (SRL) and the development of SRL measurement instruments, it can be concluded that SRL is an important component in improving the quality of student learning. Students' ability to manage their learning process independently can facilitate the development of skills relevant to the needs of the 21st century, such as critical thinking, creativity, and collaboration. The development of SRL requires support from various parties, especially teachers and a conducive learning environment. In this context, educational technology can be an effective tool to support personalized learning and monitor student progress more accurately. SRL also integrates cognitive, metacognitive, and motivational aspects, all of which play an important role in the learning process. Valid and reliable SRL measurement instruments are needed to evaluate students' abilities comprehensively. The application of appropriate measurement tools can help educators design more effective interventions to improve students' independent learning abilities. Challenges faced in post-pandemic online learning, such as digital distractions, require special attention from educators in providing support to students. Further research on the use of technology in supporting SRL in the digital age is needed to create a more adaptive learning experience. The implementation of SRL in school curricula can strengthen the development of students' character to be more independent, adaptive, and innovative. This can be reinforced through guidance and counseling services.

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