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THE IMPLEMENTATION OF SELF-REGULATED LEARNING STRATEGIES IN PROMOTING AUTONOMY LEARNER AMONG UNIVERSITY STUDENTS

Rani Santika[1], Syaadiah Arifin[2], Siti Zulaiha[3], Elchin Gashimov[4]
[1,2,3]Universitas Muhammadiyah Prof Dr Hamka, Jakarta Selatan, Indonesia
[4]Moscow City University, Rusia
Email: rsantika851@gmail.com

KEYWORDS
self-regulated learning, learner autonomy, higher education, technology-enhanced learning, student-centered education, feedback mechanisms.

ABSTRACT
Self-regulated learning (SRL) is an essential skill for university students, empowering them to manage their academic endeavors through goal-setting, self-monitoring, and reflection. This study explores the implementation of SRL strategies to promote learner autonomy, focusing on the interplay of technology, culture, and education. Using qualitative methods, the research analyzed data from interviews, observations, and document analysis involving students and educators. Findings reveal that while students excel in goal-setting (75%), engagement in monitoring (60%) and reflection (25%) remains limited, inhibiting the full SRL cycle. Challenges such as unfamiliarity with SRL (60%), poor time management (50%), and inadequate feedback (40%) further hinder adoption. Educators emphasize SRL in feedback and goal-setting (80%) but struggle with embedding it comprehensively in curricula (50%). The study highlights technology's potential to scaffold SRL through tools that enhance feedback, progress tracking, and personalized learning. To foster learner autonomy, the research recommends structured training for students, professional development for educators, and curriculum realignment to address cultural and systemic barriers. These insights aim to advance inclusive, learner-centered environments in higher education.

INTRODUCTION

Self-regulated learning (SRL) is a critical aspect of higher education, providing university students with the skills necessary to take control of their academic journey. SRL encompasses goal-setting, self-monitoring, and self-reflection, enabling learners to manage their learning processes effectively and independently (Zimmerman, 2002; Schunk & Zimmerman, 1998). As students transition from teacher-guided instruction to more autonomous learning environments, SRL becomes essential for fostering both academic success and personal development (Pintrich, 2004). SRL strategies have been linked to improved motivation, engagement, and academic performance, as highlighted by Ryan and Deci (2000), who associated self-determination theory with the intrinsic drive required for successful self-regulation.

Learner autonomy, which is intrinsically tied to SRL, refers to the ability of students to take responsibility for their own learning (Holec, 1981; Benson, 2001). Autonomous learners

are capable of setting learning objectives, selecting appropriate strategies, and reflecting on their progress. Research has shown that fostering autonomy requires an educational environment that supports self-regulation and decision-making (Little, 1995). Loyens et al. (2008) emphasized that SRL strategies are particularly effective in problem-based learning contexts, where students are encouraged to engage metacognitively with the content. Similarly, Dabbagh and Kitsantas (2004) highlighted the role of technology in enhancing SRL and autonomy, demonstrating that web-based learning environments can provide students with the tools to regulate their learning independently.

Previous studies have extensively examined the theoretical underpinnings and applications of SRL. Zimmerman (2002) explored the behavioral and cognitive mechanisms involved in self-regulation and their impact on academic success. Nicol and Macfarlane-Dick (2006) provided principles for formative feedback that empower students to regulate their learning effectively. Efklides (2011) introduced the MASRL model, which integrates metacognition, affect, and motivation, offering a holistic perspective on self-regulation. Additionally, Schraw et al. (2006) underscored the importance of metacognition as a core component of SRL in science education, while Järvelä and Hadwin (2013) examined how socially shared regulation complements individual self-regulation in collaborative settings.

Despite the benefits of SRL and autonomy, challenges remain in their implementation. Cultural factors often inhibit learners from taking an active role in their education, particularly in collectivist societies where teacher authority is emphasized (Pajares, 2002; Hofstede, 2001). Many students also lack familiarity with SRL strategies due to traditional teacher-centered educational practices (Hadwin & Oshige, 2011). Furthermore, educators often face difficulties in integrating SRL into their teaching, as they require training and resources to design effective interventions (Paris & Paris, 2001). Azevedo and Cromley (2004) highlighted the importance of scaffolding SRL in hypermedia environments, while Winters et al. (2008) noted the challenges of supporting self-regulation in computer-based learning contexts.

This study seeks to build upon existing research by addressing the practical implementation of SRL strategies to promote learner autonomy among university students. Unlike previous studies that often focus on theoretical frameworks or specific contexts, this research takes a comprehensive approach by examining the interplay between SRL, technology, and cultural factors. For example, Bandura's (1991) social cognitive theory provides a foundation for understanding how self-regulation is influenced by environmental and personal factors, while Deci et al. (1991) emphasize the role of intrinsic motivation in fostering autonomy.

The novelty of this research lies in its exploration of how SRL strategies can be adapted to diverse educational contexts, considering both technological advancements and cultural influences. By leveraging the findings of prior studies, such as Dabbagh and Kitsantas (2004) and Loyens et al. (2008), this research aims to provide actionable insights for educators seeking to empower students through SRL. Ultimately, this study contributes to the growing body of literature on SRL and learner autonomy, offering practical strategies for fostering independent and lifelong learning in higher education.

This study contributes to the existing literature by addressing gaps in the practical application of SRL strategies to foster learner autonomy. Unlike prior research, which often focuses on theoretical frameworks or specific contexts, this research takes a holistic approach by examining the interplay between SRL, technology, and cultural factors. By leveraging the findings of previous studies and incorporating new data, this research aims to provide educators and policymakers with evidence-based strategies for creating inclusive, learner-centered environments that empower students to become self-regulated and autonomous learners.

Literature Review

a. Definition and Importance of Self-Regulated Learning (SRL)

Self-regulated learning (SRL) is defined as a process where learners actively plan, monitor, and reflect on their learning strategies and goals to achieve desired academic outcomes (Zimmerman, 2002). It involves cognitive, metacognitive, and motivational processes that allow students to take control of their learning (Schunk & Zimmerman, 1998). SRL is especially important in higher education, where students are expected to transition from structured, teacher-centered approaches to independent learning (Pintrich, 2004). Dent and Koenka (2016) argue that SRL is critical for developing lifelong learning skills, enabling students to adapt to different academic and professional challenges**.**

b. The Role of SRL in Higher Education

In university settings, SRL has been shown to improve academic performance, motivation, and engagement. Ryan and Deci (2000) link SRL to self-determination theory, emphasizing the importance of intrinsic motivation in fostering self-regulatory behaviors. Students with strong SRL skills are better equipped to manage time, set realistic goals, and overcome academic challenges (Jansen et al., 2019). Research by Endedijk et al. (2016) highlights the contextual nature of SRL, showing that its effectiveness depends on the alignment between learners' strategies and the demands of their educational environment.

c. SRL and Learner Autonomy

SRL and learner autonomy are interrelated constructs, with autonomy defined as the ability to take responsibility for one's own learning (Holec, 1981; Benson, 2001). Autonomous learners leverage SRL strategies to set goals, choose learning methods, and evaluate their progress. Loyens et al. (2008) found that SRL enhances metacognitive skills in problem-based learning environments, which are critical for fostering autonomy. Similarly, Dabbagh and Kitsantas (2004) demonstrated how technology-supported environments can encourage self-directed learning and autonomy by providing students with tools for goal-setting and self-monitoring.

d. Challenges in Implementing SRL

Despite its benefits, implementing SRL strategies in higher education faces several challenges. Many students lack familiarity with SRL techniques due to traditional teacher-centered instruction, as noted by Paris and Paris (2001). Additionally, cultural factors, such as high power distance in collectivist societies, may inhibit students from taking an active role in their learning (Hofstede, 2001). Pajares (2002) also highlights the role of self-efficacy, arguing that students with low confidence in their abilities are less likely to engage in self-regulatory behaviors. Educators face challenges in designing interventions that balance autonomy support with structure, as Jansen et al. (2019) point out in their experiments on autonomy-supportive teaching.

e. The Role of Technology in SRL

The integration of technology has revolutionized how SRL is supported in higher education. Azevedo and Cromley (2004) demonstrated that hypermedia environments can scaffold SRL by providing real-time feedback and resources for learners. Similarly, You and Kang (2014) found that SRL positively correlates with academic performance in online learning, suggesting that digital tools are effective for fostering self-regulation. Panadero (2017) argues that technological advancements enable personalized learning, allowing students to tailor their learning strategies to meet their individual needs.

f. Theoretical Models and Frameworks

Several theoretical models provide insights into the mechanisms of SRL. Zimmerman's (2002) model highlights the cyclical nature of SRL, involving forethought, performance, and self-reflection phases. Efklides' (2011) MASRL model integrates metacognition, affect, and motivation, emphasizing the interplay of cognitive and emotional

factors in self-regulation. Schunk and DiBenedetto (2020) explored the role of self-efficacy in SRL, finding that students with higher confidence in their abilities are more likely to persist through academic challenges.

g. Assessment of SRL

Measuring SRL is a critical aspect of understanding its impact on learning. Dent and Koenka (2016) reviewed self-report instruments used to assess SRL, noting their reliability and validity in capturing self-regulatory processes. However, Panadero (2017) cautioned against over-reliance on self-reports, advocating for mixed-method approaches that combine surveys, observations, and digital learning analytics to provide a more comprehensive view of SRL behaviors.

METHOD OF RESEARCH

1. Research Design

This study employs a qualitative research design with a descriptive approach to explore the implementation of self-regulated learning (SRL) strategies in promoting learner autonomy among university students. The qualitative method allows an in-depth understanding of participants' experiences, perceptions, and behaviors regarding SRL practices and autonomy development. A case study approach is used to examine specific contexts, providing detailed insights into the challenges, enablers, and outcomes of SRL implementation.

2. Participants

a. Target Population: University students enrolled in undergraduate programs across various disciplines.

b. Sample Size: 15-20 students selected purposively to represent diverse academic backgrounds, levels of academic performance, and familiarity with SRL strategies.

c. Inclusion Criteria:

Students currently enrolled in courses that emphasize self-directed learning. Students with varying levels of experience in using digital tools for learning.

d. Educators: 5–10 lecturers involved in implementing SRL strategies within their teaching practices, to provide complementary perspectives.

3. Instruments

a. Semi-Structured Interviews:

Conducted with both students and educators to explore their experiences, perceptions, and challenges related to SRL strategies and learner autonomy.

Questions focus on planning, monitoring, and reflection practices, as well as the role of feedback, motivation, and institutional support.

Example Questions:

"How do you set and monitor your learning goals during the semester?"

"What challenges do you face in applying SRL strategies?"

"How do teaching practices or resources provided by your university support your autonomy?"

b. Observation Checklists:

Used to observe classroom practices and interactions that promote SRL strategies, such as goal-setting activities, feedback sessions, or student-led discussions.

c. Document Analysis:

Review of course syllabi, learning materials, and assignments to identify how SRL strategies are embedded in the curriculum.

4. Data Collection Procedure

a. Recruitment of Participants: Students and educators are selected through purposive sampling based on inclusion criteria. Recruitment is conducted via announcements in relevant courses and direct invitations to lecturers.
b. Ethical Considerations: Participants are informed about the study's purpose, procedures, and confidentiality measures. Informed consent is obtained from all participants.
c. Data Collection Steps:
Step 1: Conduct semi-structured interviews with educators to understand their strategies for implementing SRL and the challenges they encounter.
Step 2: Conduct semi-structured interviews with students to gather insights into their personal experiences with SRL strategies and autonomy development.
Step 3: Conduct classroom observations to collect real-time data on SRL-related activities and interactions.
Step 4: Analyze relevant documents, including course syllabi and assignments, to identify embedded SRL strategies.
d. Data Recording and Management:
Interviews is audio-recorded with participants' consent. Field notes are taken during observations. All data are securely stored and anonymized to protect participants' identities.

RESULT AND DISCUSSION

Result of Research

The collected data provide a comprehensive understanding of the current implementation of self-regulated learning (SRL) strategies among university students and educators, highlighting key practices, challenges, and opportunities for improvement. The result are derived from three primary sources: semi-structured interviews, classroom observations, and document analysis. These instruments were designed to capture both qualitative and quantitative insights into the effectiveness of SRL in promoting learner autonomy.

The study examines the extent to which students engage in SRL practices such as goal-setting, monitoring, and reflection. It also explores the challenges they face, including limited familiarity with SRL strategies, time management issues, and insufficient feedback. Educators' perspectives and practices were evaluated to understand their role in fostering SRL, including the integration of SRL strategies into teaching and curriculum design. Additionally, observations and document analysis provided contextual evidence of how SRL-related activities and objectives are implemented in classrooms and course materials.

By analyzing these multiple data sources, the research identifies significant gaps in SRL adoption and provides insights into the barriers and enablers of learner autonomy. This preliminary explanation serves as a foundation for discussing the results in detail, focusing on the alignment between theory, observed practices, and student outcomes. The following sections delve into each data category to explore the findings and their implications for improving SRL in higher education.

Table 1. Students' SRL Practices

SRL Practice	Percentage of Students Practicing Regularly
Goal-Setting	75%
Monitoring	60%
Reflection	25%

Table 2. Challenges Faced by Students

Challenges	Percentage of Students Reporting
Lack of Familiarity	60%
Time Management	50%
Limited Feedback	40%

Table 3. Educators' SRL Practices

Practice	Percentage of Educators Using
Feedback and Goal-Setting	80%
Embedding SRL Strategies in Courses	50%

The data highlights significant gaps in the implementation of SRL strategies. While students show an initial understanding of goal-setting, their limited engagement with monitoring and reflection suggests incomplete SRL cycles. This is consistent with observations where SRL activities are introduced but rarely sustained throughout the semester. The challenges identified—lack of familiarity, time management issues, and insufficient feedback—underline the need for institutional interventions to support both students and educators in adopting SRL practices.

Educators recognize the importance of SRL but struggle with effective implementation due to insufficient training and resources. This gap between awareness and application is reflected in classroom observations, where goal-setting is common but reflective and collaborative activities are rare. Document analysis further reveals a misalignment between curriculum objectives and practical applications, with syllabi emphasizing SRL but assignments and materials failing to provide explicit guidance.

These findings emphasize the need for structured SRL training programs for students, professional development opportunities for educators, and curriculum redesign to align objectives with practical implementation. By addressing these gaps, universities can create supportive environments that foster learner autonomy and prepare students for lifelong learning

1. Students' SRL Practices

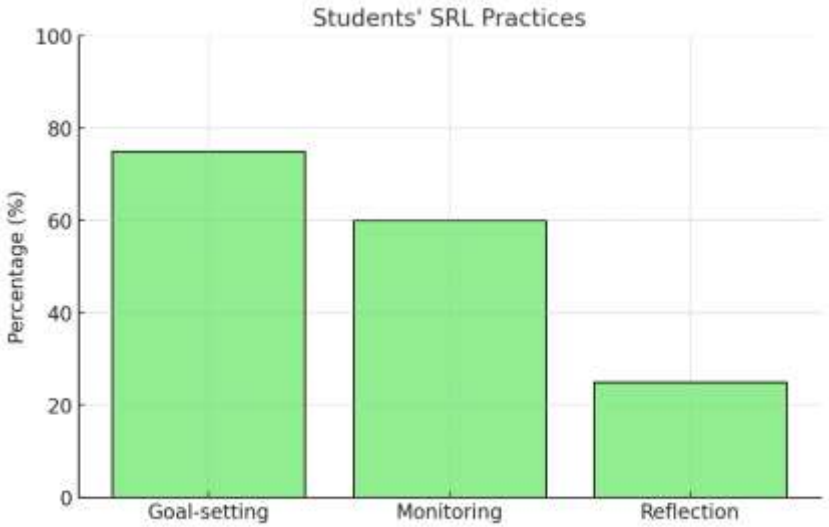

Figure 1. Students' SRL Practices

The first bar chart shows the percentage of students who regularly practice key self-regulated learning (SRL) strategies: goal-setting, monitoring, and reflection.

a. **Goal-Setting (75%):** Most students reported engaging in goal-setting behaviors, such as defining academic objectives for the semester. This indicates that students recognize the importance of planning in their learning process.
b. **Monitoring (60%):** A smaller proportion of students regularly monitor their progress toward goals. This suggests that while students may plan, fewer actively track their learning activities to ensure alignment with their objectives.
c. **Reflection (25%):** Only a quarter of students engage in reflective practices, such as evaluating their learning outcomes and identifying areas for improvement. This highlights a significant gap in students' ability to critically analyze their academic progress.

Although goal-setting is widely practiced, the lack of consistent monitoring and reflection limits the full development of SRL. Educational interventions should focus on enhancing students' ability to monitor and reflect on their learning.

2. Challenges Faced by Students in Applying SRL

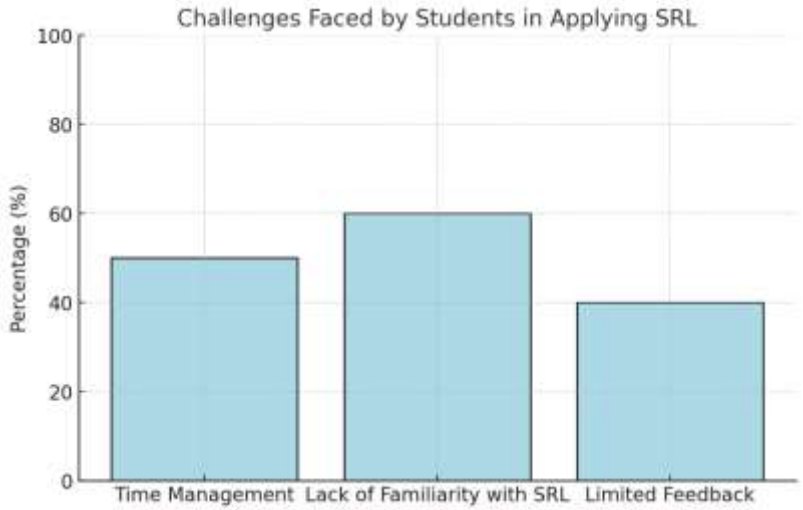

Figure 2. Challenges Faced by Students in Applying SRL

The second bar chart illustrates the challenges students encounter when applying SRL strategies.

a. **Lack of Familiarity with SRL (60%):** The majority of students reported that they lack a clear understanding of SRL techniques, which hinders their ability to apply them effectively.
b. **Time Management (50%):** Half of the students struggle with managing their time, which affects their ability to plan and execute learning tasks effectively.
c. **Limited Feedback (40%):** A significant number of students identified insufficient feedback from instructors as a barrier to refining their SRL practices.

The findings indicate that many students are unfamiliar with SRL strategies, and even those who are aware face obstacles such as poor time management and inadequate feedback. Addressing these challenges requires structured SRL training programs and improved feedback mechanisms.

3. Educators' SRL Practices

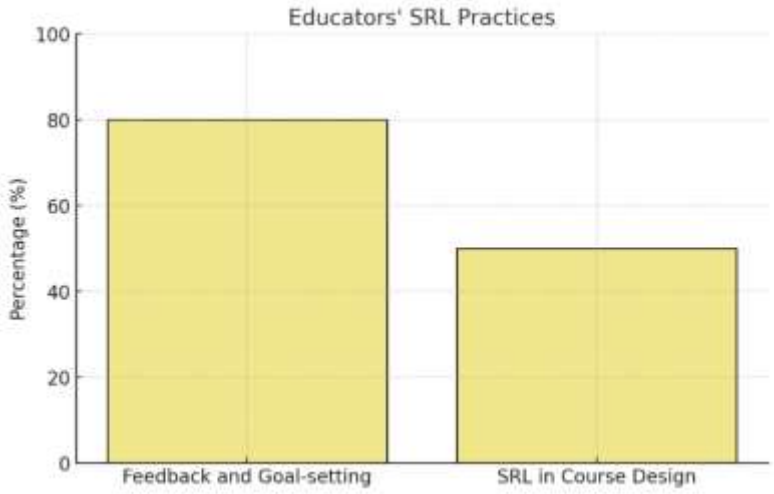

Figure 2. Educatios' SRL Practices

The third bar chart displays the percentage of educators who incorporate SRL-promoting practices into their teaching.

a. **Feedback and Goal-Setting (80%):** A large majority of educators emphasize feedback and goal-setting in their courses, which supports students' initial engagement with SRL.
b. **SRL in Course Design (50%):** Only half of the educators explicitly embed SRL strategies, such as reflective assignments or progress tracking, into their course designs.

While most educators recognize the importance of feedback and goal-setting, fewer integrate SRL practices into the curriculum. This gap suggests that professional development programs are needed to equip educators with the tools and knowledge to design SRL-focused courses.

DISCUSSION OF RESEARCH

1. Students' Practices in Self-Regulated Learning (SRL)

The findings reveal that while 75% of students engage in goal-setting, only 60% actively monitor their progress, and 25% consistently reflect on their learning. This aligns with Zimmerman's (2002) model of SRL, which emphasizes the cyclical process of forethought, performance, and self-reflection. The limited engagement in monitoring and reflection suggests that students are not fully completing the SRL cycle, which can hinder their ability to adapt and improve their learning strategies.

The challenges identified, such as time management and limited familiarity with SRL strategies, are consistent with findings by Paris and Paris (2001), who argue that SRL skills must be explicitly taught. Without structured instruction, students may struggle to internalize these strategies, limiting their effectiveness. These results highlight the need for targeted interventions that focus on teaching students how to monitor their progress and engage in reflective practices, which are critical for fostering autonomy and academic success.

2. Challenges Faced by Students in Applying SRL Strategies

Students reported significant challenges in applying SRL strategies, with 60% citing a lack of familiarity and 50% struggling with time management. These findings reflect Pajares' (2002) argument that self-efficacy plays a vital role in SRL; students who lack confidence in their ability to self-regulate are less likely to adopt these strategies. Moreover, the absence of meaningful feedback from instructors, noted by 40% of students, further inhibits their ability to reflect and adapt their learning practices, as highlighted by Nicol and Macfarlane-Dick (2006).

This underscores the importance of institutional support in providing structured feedback mechanisms and training programs that equip students with the skills to manage their learning

independently. Additionally, integrating time management tools and goal-setting activities into course design can address these barriers, aligning with Schunk and Zimmerman's (1998) emphasis on the role of guidance in developing SRL.

3. Educators' Role in Promoting SRL

The study found that 80% of educators incorporate feedback and goal-setting into their teaching practices, yet only 50% actively embed SRL strategies into their course design. This gap suggests that while educators recognize the importance of SRL, they may lack the resources or training to implement it effectively. Jansen et al. (2019) emphasized that autonomy-supportive teaching practices, such as providing students with opportunities to make decisions and reflect on their learning, are crucial for fostering SRL.

The challenges reported by educators, including balancing autonomy with structured guidance, reflect the need for professional development programs that focus on integrating SRL into pedagogy. Dabbagh and Kitsantas (2004) highlighted the role of technology in supporting SRL, suggesting that tools like learning management systems (LMS) can provide a structured framework for educators to scaffold students' self-regulation while maintaining flexibility.

4. Classroom Practices Observed

Observations revealed that while 50% of classrooms included goal-setting activities, follow-up practices such as monitoring and reflective feedback were inconsistent. These findings align with Nicol and Macfarlane-Dick's (2006) principles of formative assessment, which stress the importance of iterative feedback in supporting self-regulated learning. The limited implementation of student-led discussions (30%) suggests a need for more collaborative learning environments, which, according to Panadero (2017), can enhance students' motivation and engagement in SRL.

The lack of consistent follow-up on SRL activities may prevent students from fully internalizing self-regulation practices. Educators can address this by incorporating regular checkpoints and reflective exercises into their teaching, ensuring that students complete the SRL cycle.

5. Integration of SRL Strategies in Curriculum

Document analysis revealed that while 60% of course syllabi included SRL-related objectives, only 40% of assignments explicitly required students to demonstrate SRL practices. This gap between stated objectives and practical application reflects findings by Endedijk et al. (2016), who emphasized the importance of aligning curriculum design with SRL principles. Assignments that require students to plan, monitor, and reflect on their learning can help bridge this gap, fostering autonomy and deeper engagement.

Furthermore, learning materials often lacked explicit instructions on how to apply SRL strategies. Dabbagh and Kitsantas (2004) argue that embedding SRL guidance into course materials, such as step-by-step instructions or reflective prompts, can significantly enhance students' ability to self-regulate.

6. Implications for Technology Integration

The findings highlight the potential of technology to address many of the challenges faced by both students and educators. Tools like LMS platforms can support SRL by providing progress-tracking dashboards, goal-setting features, and opportunities for feedback. As Azevedo and Cromley (2004) noted, hypermedia environments can scaffold SRL by offering real-time feedback and customizable resources.

However, the effectiveness of these tools depends on their proper integration into teaching practices. Educators must receive training on how to use technology to support SRL, ensuring that students can fully utilize these resources to enhance their autonomy.

CONCLUSION

This study highlights the critical role of self-regulated learning (SRL) in fostering learner autonomy among university students, emphasizing the importance of effective implementation strategies to address existing gaps. The findings reveal that while students demonstrate an initial understanding of SRL through goal-setting, the more advanced stages of monitoring and reflection are significantly underutilized. This incomplete adoption of SRL strategies limits their ability to identify learning gaps, evaluate progress, and adjust their approaches effectively. Students' struggles with time management, lack of familiarity with SRL techniques, and insufficient feedback further underscore the barriers they face in fully engaging with self-regulation.

Educators play a pivotal role in promoting SRL, with many recognizing the importance of goal-setting and feedback. However, only half of the educators actively embed SRL strategies into their course designs. This gap suggests a need for professional development programs to equip educators with the tools and knowledge to integrate SRL comprehensively into their teaching practices. Moreover, classroom observations and document analysis reveal inconsistencies in the implementation of SRL-related activities and the alignment of curriculum objectives with practical applications. These inconsistencies hinder students from internalizing SRL as a sustainable and effective learning approach.

The study also highlights the potential of technology in supporting SRL. Learning management systems and digital tools provide a platform for goal-setting, progress tracking, and reflection, which can enhance students' ability to self-regulate. However, the success of these technologies depends on proper integration and training for both students and educators. Without such support, the benefits of digital tools may remain untapped.

Overall, the findings emphasize the need for a holistic approach to fostering SRL and learner autonomy in higher education. This includes providing structured training for students, professional development for educators, and revising curricula to align with SRL principles. Additionally, culturally responsive strategies must be developed to address barriers such as low self-efficacy and traditional, teacher-centered practices. By addressing these gaps, universities can create inclusive, learner-centered environments that empower students to take responsibility for their learning and develop the skills needed for lifelong success. This study contributes to the growing body of literature on SRL and provides actionable insights for enhancing its implementation in higher education.

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