



Navigating Change: Exploring Self-Regulated Learning in Online Education at Higher Education Institutions

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ABSTRACT

The shift to online learning due to the COVID-19 pandemic has brought new challenges and opportunities for students' learning processes. This qualitative study explores how Indonesian university students navigated self-regulated learning (SRL) during a fully online semester. Thematic analysis of the in-depth, semi-structured interviews with five participants revealed three key themes related to strategies for self-regulated learning in online environments, challenges in online learning, and support systems and external resources in online learning. Findings suggest that students took responsibility for their learning but faced challenges in motivation, time management, and well-being. It highlights the need for both autonomy and structured support. The study emphasizes the importance of cultivating SRL skills to improve online learning outcomes and providing structured support and SRL integration into curriculum design.

KEYWORDS

self-regulated learning;
independent learning; online learning

ABSTRAK

Peralihan ke pembelajaran daring akibat pandemi COVID-19 menghadirkan tantangan dan peluang baru bagi proses pembelajaran mahasiswa di tingkat universitas. Studi kualitatif ini mengeksplorasi bagaimana mahasiswa di salah satu universitas di Indonesia menavigasi self-regulated learning (SRL) selama semester daring. Analisis tematik dari wawancara semi-terstruktur dengan lima peserta mengungkapkan tiga tema utama terkait strategi self-regulated learning, tantangan dalam pembelajaran daring, dan sistem pendukung serta sumber daya eksternal dalam pembelajaran daring. Temuan penelitian menunjukkan bahwa mahasiswa memiliki rasa tanggung jawab yang kuat dalam mengelola pembelajaran mereka, meskipun menghadapi tantangan terkait motivasi, manajemen waktu, dan menyeimbangkan studi dengan kenyamanan pribadi. Hal ini menunjukkan perlunya sistem belajar yang independen dan dukungan terstruktur serta integrasi SRL ke dalam kurikulum..

KATA KUNCI

Belajar terstruktur; belajar mandiri; belajar daring

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INTRODUCTION

The rapid shift from traditional face-to-face learning to fully online education during the COVID-19 pandemic posed unprecedented challenges for students and educators worldwide. In Indonesia, where the education system has historically relied heavily on in-person instruction (Nugroho & Singh, 2024), this transition highlighted significant gaps in students' ability to adapt to self-directed learning environments. This shift necessitated not only technological adjustments but also a profound transformation in students' learning behaviors, particularly in the area of self-regulated learning (SRL) (Ye et al., 2022). Self-regulated learning refers to the process by which individuals take control of and evaluate their own learning and behavior. It encompasses a range of skills, including goal setting, self-monitoring, time management, and self-reflection, all of which are critical for academic success in autonomous learning environments (Agnes-Ijeoma, 2023). As noted by Jin et al. (2023), self-regulated learning (SRL) is crucial for helping students attain high academic performance and achieve their learning objectives in the online learning context (Çakiroğlu et al., 2024; Xu et al., 2022). This observation underscores the fundamental role of SRL not only in online education but also in any learning environment that demands a high degree of learner autonomy.

In the absence of traditional classroom structures and direct supervision from instructors, students' ability to effectively self-regulate becomes a key determinant of their academic performance and overall learning experience (Yavuzalp & Bahcivan 2021). However, learners often face challenges in properly applying SRL in online learning environments. Jin et al. (2023) note that online learners struggle with applying SRL due to motivation, time management, and engagement issues.

Jin et al. (2023) further observe that learners often face challenges in properly applying SRL in online learning environments. These challenges include difficulties in maintaining motivation, managing time effectively, and staying engaged without external structures, which can significantly impact learning outcomes.

Many studies suggest Indonesian students struggle with independent learning in online settings (Azhari & Fajri, 2022; Putra et al., 2020; Putri et al., 2020; Weni et al., 2024). However, limited qualitative research explores their personal experiences with SRL. The common narrative portrays students as passive learners who face difficulties in maintaining motivation, managing their time, and staying engaged without the external structure provided by face-to-face interactions (Andreas, 2023). However, this generalized view may overlook the diverse strategies and coping mechanisms that students employ to navigate the complexities of online learning.

Moreover, the relevance of SRL extends beyond the context of the COVID-19 pandemic. As educational environments continue to evolve due to technological advancements, globalization, and other disruptive changes, the ability to self-regulate learning remains a critical competency (Ben-Eliyahu et al., 2024; Ritz et al., 2023). Students will inevitably face new learning modalities and environments that require adaptability and independent learning skills. Therefore, understanding how students develop and apply SRL strategies is not only pertinent to pandemic-related disruptions but also to future educational contexts marked by change and uncertainty.

Therefore, this study aims to fill this gap on the lack of research-informed online-based SRL strategies by investigating the perceptions of self-regulated learning among Indonesian

university students during a fully online class semester. Through in-depth, semi-structured interviews with five university students, this research seeks to uncover how they perceive and manage their learning processes in an environment that demands a high degree of autonomy. By focusing on their experiences, motivations, challenges, and strategies, this study will provide nuanced insights into the factors that influence effective self-regulation in online learning contexts. Understanding these perceptions is crucial for educators, policymakers, and instructional designers who aim to develop more effective online learning environments that support students' autonomy while addressing their specific needs. Ultimately, this research aspires to contribute to the broader discourse on self-regulated learning, particularly within the Indonesian higher education context. Furthermore, it offers practical recommendations for enhancing students' online learning experiences. By highlighting the ongoing importance of SRL in diverse educational settings, this study underscores the necessity of equipping students with the skills needed to thrive in both current and future learning landscapes.

Introduction to Self-Regulated Learning (SRL)

Self-regulated learning (SRL) refers to the process by which learners take control of their own learning experiences (Boekaerts, 1999; Puustinen & Pulkkinen, 2001, Winne, 2018; Zimmerman, 1990; Zimmerman, 2013). It involves setting goals, selecting strategies, monitoring progress, and reflecting on outcomes to adjust learning behaviors and strategies (Zimmerman, 2013). SRL is a critical skill that underpins academic success, especially in environments where students are expected to manage their own learning more independently, such as in online education. According to Schunk & Zimmerman (2012), self-regulation encompasses a cycle of planning, monitoring, and evaluating one's learning activities. This dynamic process allows learners to adapt their strategies to meet evolving academic challenges. Zimmerman (2013) further elaborates that self-regulation involves an interplay between cognitive, emotional, and motivational factors, making it a complex and multifaceted concept. For learners, developing SRL skills means becoming active participants in their educational journey, taking ownership of their learning progress.

Pintrich (2000) identifies several key components of SRL, including goal setting, self-monitoring, and self-reflection. These components work together to enhance learners' ability to stay on track with their educational goals. Students who possess strong self-regulation skills are more likely to persist through difficulties and manage their learning tasks effectively. Furthermore, SRL is not limited to cognitive strategies but also incorporates motivation, where learners' beliefs about their abilities play a crucial role in how they approach learning tasks. Motivation is a central aspect of self-regulated learning because it influences the initiation and persistence of goal-directed behaviors (Schunk & Zimmerman, 2012).

Self-regulated learners also actively engage in metacognitive processes, such as evaluating their own understanding and adjusting their learning strategies accordingly (Pintrich, 2002). According to Schunk and Zimmerman (2012), metacognitive awareness and control allow learners to monitor their cognitive processes, ensuring that learning goals are achieved. This self-awareness enables learners to identify gaps in their knowledge and take corrective actions, thus improving their overall learning outcomes.

In the context of online education, SRL becomes even more essential. As learners navigate digital learning platforms without the immediate support of instructors or peers, they must rely on their ability to self-regulate effectively. Research has shown that online learners who engage in self-regulatory behaviors are more successful in managing their studies

(Barnard et al., 2008; Delen & Liew, 2016; Khulaifiyah et al., 2023). According to Biwer et al. (2021), learners in online environments who exhibit high levels of self-regulation are better equipped to cope with the challenges of remote learning, including time management and maintaining motivation.

Furthermore, SRL is not a static skill but one that develops over time through practice and reflection. According to Schunk and Zimmerman (2012), self-regulation is a developmental process that can be cultivated through both instruction and experiential learning opportunities. This suggests that even learners who initially struggle with SRL can improve their abilities through targeted interventions and support. SRL is a dynamic and multifaceted process that involves setting goals, monitoring progress, managing motivation, and reflecting on learning strategies. It is a crucial skill for academic success, particularly in online learning environments where students must navigate their studies more independently. As the research indicates, students who develop strong self-regulation skills are better equipped to meet the challenges of their academic endeavors, making SRL an essential component of effective learning in any educational context.

SRL in Online Learning Environments

In online courses, learners must take greater responsibility for managing their learning processes, which requires them to develop and employ effective SRL strategies. Broadbent and Poon (2015) note that the ability to self-regulate is essential for success in online learning, as students are required to manage their time, motivation, and engagement independently. This is especially true in the context of fully online education, where the absence of direct interaction with instructors can challenge students to stay focused and engaged.

One of the key challenges in online learning is maintaining motivation, online learners must be highly motivated and capable of sustaining that motivation throughout the course (Chiu et al, 2021; Fajri et al., 2021). Motivation plays a central role in online learning, as students must overcome the lack of immediate rewards and feedback, which are often present in face-to-face settings (Broadbent & Poon, 2015; Stabila, 2024). Online learners often rely on intrinsic motivation to maintain their engagement and perseverance. Pintrich (2002) argues that students' ability to regulate their own motivation, especially in the face of distractions or competing interests, is critical for achieving success in online learning environments. Intrinsic motivation helps students remain committed to their goals, even when external pressures are minimal.

In addition to motivation, time management has been considered fundamental in effective online learning (Asgari et al., 2020; Erlangga, 2022; Kearns, 2012). In the absence of scheduled class times and physical presence, students are expected to set their own learning schedules. According to Wolters and Brady (2021), effective time management is a crucial component of SRL in online learning, as students must allocate time for studying, completing assignments, and engaging in activities without external reminders. Without adequate time management, students may struggle to keep up with course demands, leading to disengagement and diminished academic performance.

In online learning environments, students must also be able to monitor their progress effectively. This involves evaluating whether their current strategies are effective and making adjustments when necessary. According to Schunk and Zimmerman (2012), self-monitoring and self-evaluation are key processes in SRL that help students assess their progress, identify areas for improvement, and make informed decisions about how to proceed. Effective

monitoring allows students to stay on track with their goals and ensures that they are using the best strategies for their learning context.

Despite the challenges, online learning environments also offer opportunities for students to develop and refine their SRL skills. Turan et al. (2022) suggests that the flexibility inherent in online learning allows students to experiment with different learning strategies and take ownership of their educational journey, which can lead to the development of more sophisticated self-regulation over time. This autonomy enables students to explore various ways to regulate their learning, including adjusting their study schedules, selecting preferred learning tools, and determining the best approach for completing tasks.

Ultimately, SRL in online learning environments involves a complex interplay of time management, motivation, progress monitoring, and strategy adjustment. These elements are crucial for students to navigate the challenges of online education successfully. As many studies conclude, students who demonstrate strong SRL behaviors, such as planning, monitoring, and adjusting strategies, are more likely to perform well in online courses (Wong et al., 2021; Ye, 2022). Therefore, supporting students in developing their SRL skills is essential for enhancing the effectiveness of online learning.

SRL and the Crisis: A Time of Transition

The last pandemic brought about a sudden and massive shift in education worldwide, with traditional face-to-face classrooms moving rapidly to online learning platforms. This transition posed significant challenges for students, as they had to adapt to a new learning environment while simultaneously managing personal and academic stresses. The pandemic highlighted the crucial role of self-regulated learning (SRL) in enabling students to navigate these unprecedented changes. The rapid transition to online learning during the pandemic underscored the importance of self-regulated learning skills, as students were required to manage their learning independently in unfamiliar and often stressful conditions (Meshram et al., 2022; Thomas, 2023).

For many students, particularly those accustomed to traditional classroom settings, the shift to online education disrupted their established learning routines. According to Zheng et al. (2021), students who were previously reliant on face-to-face interactions with instructors and peers struggled with the self-regulation demands of online learning, particularly during the early stages of the pandemic. The absence of direct instructor supervision and peer support in online environments made it harder for these students to stay focused and engaged, thus emphasizing the need for strong SRL skills to maintain academic progress.

The pandemic also led to significant changes in students' motivations and emotional well-being. The isolation and uncertainty, combined with the transition to remote learning, affected students' ability to remain motivated (Usher et al., 2024). As Broadbent et al. (2024) note, students' motivation during the pandemic was often influenced by external factors such as the disruption of daily life, fear of illness, and concerns about their future academic and career prospects. These external stressors made it harder for students to regulate their learning, especially when they faced distractions and a lack of clear structure in their daily routines.

Despite these challenges, many students demonstrated resilience and adapted their SRL strategies to cope with the new learning environment. Students who had higher levels of self-regulation were more likely to adopt adaptive learning strategies, such as setting clear goals, establishing regular study routines, and seeking support from peers or online resources (Harati

et al., 2021; Zhang & Zhang, 2024). This adaptability allowed students to continue making progress despite the uncertainties and challenges posed by the pandemic.

The shift to online learning also presented new opportunities for students to develop and refine their SRL skills. With greater control over their learning environments, students were able to experiment with different learning strategies and tools. The pandemic has clearly provided an unexpected opportunity for many students to practice and enhance their self-regulated learning skills, as they gained more autonomy and responsibility over their learning (Schunk & Zimmerman, 2023). This increased autonomy allowed students to engage more deeply with the learning material and reflect on their own learning processes, potentially leading to the development of stronger SRL habits in the long term.

METHOD

This study employed a qualitative research design to explore Indonesian university students' perceptions of self-regulated learning (SRL) during a fully online semester. Qualitative research approach is particularly suited for understanding complex phenomena within their natural contexts, as it seeks to understand how individuals make sense of their experiences (Creswell, 2013; Mairi et al., 2023; Mairitsch et al., 2024). The aim was to gain in-depth insights into how students navigated the challenges of online learning, focusing on their ability to learn independently and effectively without face-to-face interactions. A semi-structured interview approach was chosen to allow for flexible yet focused exploration of participants' experiences, providing rich data on their SRL strategies in the context of online education (Schmidt, 2004).

The participants were five Indonesian university students who had experienced fully online semesters during the COVID-19 pandemic. Purposive sampling was utilized to select individuals who met the criteria of having engaged in online learning for at least two semesters. It is worth noting that although the number of participants is considerably small, the study never aims to generalize its finding. Therefore it fair to say that sample size limits the potential generalizability of the overall study. This sampling method and decision are commonly used in qualitative research to select information-rich cases (Patton, 2022). The participants' ages ranged from 20 to 21 years from a single institution. Participants were recruited through their university's online student forums, and informed consent was obtained prior to the interviews. To ensure confidentiality, each participant was assigned a pseudonym. Demographic details, such as age, gender, and academic background, were collected to provide context for the findings.

Data were collected through semi-structured interviews, a method that allows for a focused yet flexible exploration of participants' experiences (Patton, 2022). An interview guide was developed, including questions designed to investigate participants' SRL behaviors, strategies, and challenges encountered during online learning. Key topics included goal-setting, time management, self-monitoring, motivation, and the use of online learning tools. The questions were crafted to prompt participants to reflect on both their personal experiences and their perceptions of the online learning environment. Each interview lasted approximately 40 to 50 minutes and was conducted via Zoom to accommodate participants' schedules. The interviews were audio-recorded with participants' consent, and verbatim transcriptions were made for later analysis.

The interview data were transcribed by using intelligent verbatim technique. The transcripts were then analyzed using reflexive thematic analysis, a method that involves familiarizing oneself with the data, generating initial codes, generating initial themes, reviewing themes, defining and naming the themes, and writing up the report (Braun & Clarke, 2021). This approach is well-suited for examining how participants make sense of their experiences and the meanings they attribute to them. The analysis followed a six-step process as mentioned above where the researcher first read through the interview transcripts multiple times to become deeply familiar with the content. Secondly, initial codes were generated where significant statements related to SRL strategies and experiences identified. Then, the researcher generated themes where the initial codes were grouped into broader themes. The next stage is reviewing themes to ensure they accurately represented the data and were coherent in relation to the research questions. After that, the themes were redefined and renamed accordingly to reflect the key aspects of participants' SRL experiences. Lastly, the researcher wrote the report where the final themes and their associated data were synthesized into a coherent narrative, providing an in-depth understanding of participants' SRL experiences in online learning environments.

This study adhered to ethical guidelines set forth by the researcher's institution. Informed consent was obtained from all participants, ensuring they were aware of the study's purpose, procedures, and their right to confidentiality. Participants were assured that their responses would be anonymized and that they could withdraw from the study at any time without consequence. The interviews were conducted in a respectful and supportive manner, with participants given the opportunity to share their experiences freely.

FINDINGS AND DISCUSSION

The thematic analysis of the semi-structured interviews revealed several key themes that reflect Indonesian university students' perceptions of self-regulated learning (SRL) during a fully online semester. The analysis was based on 28 distinct codes that were extracted from the interview transcripts. From the 28 codes, three overarching themes emerged, reflecting participants' strategies for self-regulated learning in online environments, as well as the challenges and opportunities they encountered. These themes are:

1. Self-regulation strategies: Participants utilized a variety of strategies to manage their learning, including setting goals, managing time, and reflecting on progress.
2. Challenges in online learning: Participants faced challenges related to motivation, distractions, and technology issues, which impacted their SRL behaviors.
3. Support systems and external resources in online learning: Participants relied heavily on digital tools such as learning management systems, video conferencing, and online discussions to facilitate their learning.

The findings indicate that while students developed effective SRL strategies, they also encountered significant barriers that hindered their engagement and motivation during the online semester. These challenges were largely influenced by the online environment, with technology issues and the absence of face-to-face interaction being the most cited obstacles. However, students also demonstrated resilience by using available tools and strategies to maintain their learning progress.

Theme 1: Self-Regulation Strategies in Online Learning

The first theme that emerged from the analysis was “self-regulation strategies in online learning”, reflecting the various ways participants actively managed their learning process in a fully online environment. As self-regulated learning (SRL) is fundamentally about learners taking control of their own learning, this theme encapsulates the participants' conscious efforts to plan, monitor, and evaluate their learning while navigating the challenges of the online format. The codes within this theme demonstrate the importance of self-regulation in sustaining motivation, maintaining focus, and ensuring learning progress, even in the absence of face-to-face interaction with instructors and peers. The participants' SRL strategies, such as goal setting, time management, self-monitoring, reflection, and help-seeking, were pivotal in overcoming obstacles they encountered during online learning.

1.1 Goal Setting

One of the most significant strategies participants employed to regulate their learning was goal setting. Setting clear, specific academic goals is widely recognized as a central component of self-regulation, helping students maintain focus and direction. Several participants reported that they established personal goals at the beginning of each semester or on a weekly basis to track their progress and stay motivated throughout the online learning process. For example, Participant 1 mentioned, "I set weekly goals to keep track of my progress," indicating that breaking down larger tasks into smaller, manageable goals helped to maintain a sense of accomplishment. Similarly, Participant 2 stated, "Setting clear goals helps me focus on what I need to accomplish," highlighting the role of goal setting in reducing distractions and maintaining focus in a remote learning environment. By making their learning objectives explicit and measurable, students were better able to prioritize tasks and ensure that they stayed on track.

1.2 Time Management

Another key strategy identified in the data was time management. Participants reported that managing their time effectively was critical to staying on top of assignments, lectures, and other academic responsibilities. Time management is widely regarded as a key self-regulation strategy that enables students to organize their learning activities, allocate time for study, and balance competing demands. Participant 3 shared, "I create a study schedule every week to manage my time well." By structuring their time and planning study sessions, participants were able to allocate sufficient time for each task, ensuring that deadlines were met. Time management also helped students mitigate the risk of procrastination, which is often cited as a common challenge in online learning environments. As Participant 4 mentioned, "Time management is crucial when there are no in-person meetings," highlighting how online learning requires even more careful planning due to the lack of structured, in-person guidance.

Some participants created daily or weekly timetables to organize their work and set aside specific blocks of time for lectures, assignments, and personal activities. These schedules allowed students to visualize their academic workload and make informed decisions about how to divide their time effectively. The ability to manage time effectively also seemed to have enhanced participants' feelings of competence and autonomy, elements of self-regulated learning.

1.3 Self-Monitoring

The third strategy that emerged was self-monitoring. Self-monitoring involves regularly checking one's progress toward academic goals, reflecting on learning outcomes, and adjusting

strategies if needed. Many participants in this study reported actively tracking their progress to assess whether they were on target to meet their goals. For instance, Participant 5 stated, "I track my assignments and make sure I meet deadlines," illustrating how students actively kept track of their tasks to ensure timely completion. Self-monitoring helped participants identify when they were falling behind or struggling with certain tasks, allowing them to make necessary adjustments. As Participant 3 noted, "I check my grades to see if I'm improving or not," indicating that self-monitoring also involved evaluating performance in assignments and exams, which helped students gauge their overall learning progress. This opinion was also shared by other participants.

Regular self-assessment enabled students to stay accountable to themselves and identify areas where they needed to invest more time or effort. Self-monitoring also enhanced students' metacognitive awareness, the ability to reflect on one's thinking and learning processes, which is crucial for self-regulation. By continuously checking their progress and making adjustments, students demonstrated a high level of engagement with their learning.

1.4 Reflection

Another critical aspect of self-regulation identified in this study was reflection. Reflecting on learning experiences, both during and after completing assignments, seemed to be a powerful strategy for enhancing SRL. Participant 1 explained, "I review my work and think about how I can improve next time," indicating that reflection helped her evaluate the quality of learning. Reflective practices, such as reviewing assignments after submission or evaluating study techniques, enabled students to identify strategies that worked well and those that needed adjustment. Reflection allows students to think about what they have learned, how they have learned it, and how they can improve in the future.

Furthermore, Participant 5 noted, "Reflection helps me figure out what works for me and what doesn't," demonstrating the role of reflection in refining learning strategies and fostering self-improvement. Reflection promoted deeper learning by encouraging students to connect new information with prior knowledge and consider alternative approaches to solving problems.

1.5 Help-Seeking

Although self-regulation is often seen as an independent process, the help-seeking behavior exhibited by participants highlights that self-regulated learning does not occur in isolation. Many students recognized the importance of reaching out for support from peers or instructors when needed.

As Participant 2 mentioned, "When I don't understand something, I ask my classmates," underscoring the role of peer collaboration in facilitating understanding. Peer interaction helped students clarify confusing concepts and gain different perspectives on the material. Similarly, Participant 3 shared, "I email my lecturer when I need clarification on the material," demonstrating how students utilized instructor feedback to improve their learning. Help-seeking is not only a means of obtaining information but also a strategy for maintaining motivation and engagement. By proactively reaching out for support, students demonstrated a willingness to engage with the learning process and address challenges head-on.

Theme 1 reveals that the use of self-regulation strategies in online learning was a central aspect of participants' experiences in this study. Participants actively employed a variety of strategies, including goal setting, time management, self-monitoring, reflection, and help-seeking, to manage their learning in a fully online environment. These strategies were

instrumental in promoting engagement, sustaining motivation, and ensuring academic success in an online context. These self-regulation strategies are not only reflective of students' intrinsic motivation and ability to manage their learning but also demonstrate the adaptability and resilience students displayed in response to the challenges posed by online learning environments. By cultivating strong self-regulation skills, students were able to navigate the complexities of online learning and maintain control over their academic outcomes.

Theme 2: Challenges Faced in Online Learning

The second major theme that emerged from the analysis was “challenges faced in online learning”, highlighting the difficulties participants encountered in a fully online learning environment. Despite employing various self-regulation strategies to manage their learning, students reported facing numerous obstacles that negatively impacted their academic performance, motivation, and overall learning experience. These challenges were compounded by the shift to an online learning modality, which many participants were experiencing for the first time, and were directly related to the nature of remote learning and the limitations of the digital tools available.

2.1 Motivation Decline

One of the most significant challenges participants reported was a decline in motivation during online learning. This challenge is consistent with existing literature, which suggests that students often struggle with maintaining motivation in non-traditional learning environments, particularly when face-to-face interaction is removed. Many participants reflected on how the lack of in-person classes made it difficult to sustain their initial enthusiasm for their studies.

Participant 1 expressed, "It's hard to stay motivated when you're learning alone," indicating the lack of external encouragement and face-to-face support as a primary factor for diminished motivation. Similarly, Participant 2 stated, "Sometimes I feel less motivated because I can't interact with classmates in person," emphasizing the importance of social interaction in maintaining engagement with the learning material. The absence of immediate feedback, peer encouragement, and teacher interaction led students to experience feelings of detachment and a lack of accountability, further contributing to a decline in motivation.

This motivational decline was also linked to reduced sense of community, which is a central aspect of traditional classroom environments. Without the social presence of classmates and instructors, students reported feeling disconnected from the learning process. This disengagement can lead to procrastination and disengagement, both of which negatively impact SRL. The challenge of maintaining motivation in online settings underscores the need for effective motivational strategies and engagement techniques, such as instructor-led interactive activities or peer collaboration.

2.2 Distractions at Home

Another significant challenge identified by participants was the presence of distractions at home. In the absence of a structured classroom environment, students found it increasingly difficult to focus on their studies due to distractions in their home environments. This issue was particularly acute for participants living with family members, where competing demands for their attention interfered with their learning.

Participant 3 shared, "I get distracted by family members and household chores," highlighting the difficulties posed by a non-academic home environment. Many participants reported struggling to balance their academic responsibilities with household duties or social

interactions, which created a constant pull away from their learning tasks. These distractions were especially problematic during synchronous classes or when assignments were due, further complicating their ability to stay on track with their studies. Participants mentioned the challenge of maintaining concentration when family members or housemates were present, which often led to fragmented learning sessions and decreased productivity. This issue also contributed to a sense of frustration and stress, which can undermine self-regulation efforts.

2.3 Technology Issues

The third major challenge identified by participants was technology issues, which were a frequent source of frustration. As online learning relies heavily on digital tools and platforms, technical problems, such as internet connectivity issues, software malfunctions, and platform instability, were significant barriers to effective learning. Technology issues were particularly disruptive during live sessions or exams, where delays or disruptions led to feelings of helplessness and anxiety. Participant 4 noted, "I often face problems with my internet connection during classes," pointing to the recurring issue of unstable internet connections, which often resulted in missed content or broken communication during live sessions. Similarly, Participant 5 mentioned, "The platform we use for learning isn't always stable," illustrating how technical failures in the Learning Management System (LMS) could hinder access to critical materials and disrupt the flow of lessons.

Although technical difficulties are a common barrier in online education, it can significantly impede students' ability to engage with the learning content. In this study, participants indicated that these technological barriers were particularly challenging when they were not given adequate technical support or guidance on how to address these issues. Consequently, the stress and frustration caused by technology failures further exacerbated the challenges participants faced in regulating their learning effectively.

2.4 Isolation and Loneliness

Another key challenge in online learning identified in this study was isolation and loneliness. Students reported feeling disconnected from their peers and instructors, leading to a sense of social isolation and emotional disengagement. Without the opportunity for spontaneous conversations, group interactions, or casual social exchanges that often occur in physical classrooms, participants noted that they felt cut off from the academic community. Participant 5 expressed, "I miss the interaction with my friends during class," emphasizing how the lack of social connection diminished their overall learning experience. Similarly, Participant 2 stated, "It feels isolating not to see anyone on campus," highlighting the importance of in-person socialization for maintaining a sense of belonging and emotional well-being during the academic journey. The lack of social support can negatively affect motivation and engagement, both of which are crucial components of SRL. In this study, the absence of physical presence during classes and the inability to collaborate informally with peers created a sense of emotional detachment from the learning process, which impacted students' commitment to their academic work.

To conclude Theme 2, the theme reveals that, despite their use of self-regulation strategies, participants experienced significant obstacles that undermined their academic experience. The decline in motivation, distractions at home, technology issues, and isolation challenges all contributed to the difficulties students faced in regulating their learning effectively. These challenges, many of which are inherent to the online learning environment, highlight the importance of addressing contextual factors that can impede student engagement

and success. In addition to the challenges, the data also suggest some of the coping strategies that students implemented while dealing with these challenges. For instance, when faced with technology issues, some students had to walk to the nearest public offices to get internet connection, or borrow a relative's device such as laptop or smartphone to do and complete the assignment. When they had to deal with other issues such as distractions at home, some students had to explain that they had to study through their devices so people at home could understand and give them space to learn and possibly dismiss them from household duties.

The findings suggest that, in addition to providing strategies for self-regulation, educators and institutions must offer targeted support to address these challenges, such as ensuring access to reliable technology, and fostering a sense of community. By addressing these barriers, institutions can help students navigate the complexities of online learning more effectively and enhance their overall academic experience.

Theme 3: Support Systems and External Resources in Online Learning

The third theme that emerged from the analysis was "support systems and external resources in online learning", which highlights the critical role that external support and resources played in participants' ability to navigate the challenges of online learning. Despite their use of self-regulation strategies, students often faced difficulties that required assistance from various sources, such as peers, lecturers, and online resources. This theme reflects the importance of support systems in promoting students' ability to stay engaged, overcome obstacles, and successfully manage their academic responsibilities in an online learning environment. The analysis revealed that participants relied heavily on a range of support systems to maintain their motivation, resolve technical issues, and clarify academic content. These support systems not only mitigated challenges but also played a pivotal role in students' overall academic success.

3.1 Peer Support

One of the most frequently mentioned forms of external support was peer support. Many participants reported that they actively sought help from their classmates to clarify concepts, solve problems, and maintain motivation. Peer support provided an avenue for students to engage in collaborative learning, share resources, and alleviate feelings of isolation. This type of support is particularly valuable in online learning, where students may feel disconnected from the academic community. Participant 3 shared, "I often ask my classmates for help when I don't understand something," indicating that peer collaboration was a vital part of their learning process. Similarly, Participant 1 mentioned, "We have a group chat where we share tips and remind each other about deadlines," highlighting the role of peer networks in fostering a sense of community and accountability. Research supports the notion that peer support is a key component of effective learning in online environments. Peer interactions encourage the exchange of ideas and help students deepen their understanding of course material. By working together, students can fill gaps in their knowledge and overcome difficulties that might otherwise hinder their learning progress.

3.2 Lecturer Support

The second major support system identified in the data was lecturer support. Despite the challenges associated with the lack of face-to-face interaction, participants emphasized the importance of receiving guidance and feedback from lecturers to stay on track with their studies. Lecturer support, in the form of clarifying content, providing timely feedback on assignments, and answering questions, played a critical role in students' ability to regulate their

learning effectively. Participant 2 shared, "I email my lecturer when I need clarification on the material," demonstrating how students relied on instructors to address uncertainties and provide deeper insights into course topics. Participant 5 further emphasized, "I feel more motivated when my lecturer gives feedback on my work," suggesting that timely and constructive feedback is essential for reinforcing students' learning efforts and maintaining engagement.

Studies have shown that instructor support is a key determinant of students' success in online learning environments. Effective communication with lecturers allows students to feel more confident in their learning process and less overwhelmed by the challenges of the online format. By providing clear instructions, feedback, and encouragement, lecturers can help students stay motivated, focused, and committed to their learning goals.

3.3 Digital Tools and Online Resources

Finally, participants also frequently mentioned the use of digital tools and online resources as an essential support system. In the absence of in-person classes, students relied heavily on various online platforms, digital libraries, videos, forums, and online tutorials to supplement their learning. These resources enabled students to access additional materials, clarify concepts, and engage in self-paced learning. Participant 4 remarked, "I use YouTube and academic journals to learn more about the topics," indicating how participants utilized open-access platforms and scholarly resources to deepen their understanding. Similarly, Participant 5 shared, "I participate in online study groups and watch recorded lectures to reinforce what I've learned," emphasizing the importance of flexible, asynchronous learning resources in supporting students' self-regulation.

The widespread availability of digital tools and online learning resources has transformed the way students approach learning. Online platforms, such as Youtube, Coursera, Khan Academy, and others, offer supplementary materials that students can access anytime, anywhere, which promotes independent learning and supports self-regulation. These resources also encourage students to take a more active role in their education by providing them with multiple pathways to knowledge and learning.

To summarize Theme 3, students perceived that support systems and external resources in online learning played a vital role in helping participants successfully manage their online learning experiences. Peer support, lecturer guidance, and digital tools and resources were all critical factors that enabled students to overcome challenges, maintain motivation, and regulate their learning. The findings suggest that while self-regulation is important, external support systems are equally crucial in ensuring academic success in online learning. These support structures not only mitigate the challenges students face but also foster a sense of community, connection, and engagement. To enhance the effectiveness of online education, it is essential that institutions provide accessible, comprehensive support systems that empower students to navigate the complexities of remote learning.

Discussion

The findings of this study underscore the importance of SRL in online learning environments, especially in the context of higher education in Indonesia. As anticipated, the participants in this study demonstrated varying levels of self-regulation, which influenced their ability to manage their learning independently. The three emergent themes; strategies for self-regulation, challenges, and support systems and external resources reflect the complex and

multifaceted nature of SRL in online settings. These themes are consistent with the existing literature on SRL, which emphasizes the importance of both individual strategies and external factors in fostering effective online learning (Bhowmik et al., 2023; Cheng et al., 2023; Kauffman, 2015)

The theme of strategies for self-regulation reflected a range of techniques that participants employed to manage their learning. Time management, active engagement with learning materials, goal setting, and self-motivation were the most commonly reported strategies. These strategies are consistent with research on SRL, which identifies time management and self-motivation as key components of successful learning (Agnes-Ijeoma, 2023; Paterson, 2014; Raime et al., 2020). The ability to set specific goals and regularly reflect on their learning progress was crucial for maintaining momentum in an online learning context, where students are more susceptible to distractions and disengagement (Anthonysamy et al., 2020).

The themes of SRL during the pandemic revealed how students adapted to the unprecedented challenges posed by the sudden transition to online learning. While some participants struggled with the lack of face-to-face interaction, others demonstrated resilience by developing new SRL strategies. This finding supports the notion that the pandemic acted as a time of transition, forcing students to quickly adapt and refine their SRL skills (Templemen, 2020). The pandemic also highlighted the need for greater flexibility in SRL frameworks, as students had to navigate an uncertain learning environment marked by disruptions and shifting expectations (Biber et al., 2021).

The role of support systems and external resources also emerged as pivotal in students' SRL processes. Despite the emphasis on self-regulation, participants frequently relied on external support, such as peer networks, instructor feedback, and online resources. This highlights the importance of a balanced approach to SRL, where both internal and external resources are integrated to enhance learning outcomes (Chou & Zou, 2020; Zimmerman & Schunk, 2011). The reliance on peer support in particular reflects findings from previous studies, which suggest that collaborative learning and community-building play a significant role in online learning success (Bateman et al., 2022; Conrad, 2005; Grothaus, 2022).

The findings of this study are consistent with the broader SRL literature such as how students also involved the three phases of SRL (Zimmerman, 2000) which include forethought phase, performance phase, and reflection phase. However, this study also adds to the literature by highlighting the unique challenges and strategies of students in an online learning context, particularly in a developing country like Indonesia. The findings suggest that while SRL is a universal concept, its application and effectiveness can be shaped by cultural, technological, and educational contexts. In contrast to traditional face-to-face classrooms, where students may have easier access to immediate help from teachers and peers, online learners often have to seek out resources independently. This reliance on self-directed help-seeking emphasizes the need for instructors and institutions to provide more accessible and effective support systems in online learning environments.

CONCLUSION

This study explored the perceptions of Indonesian university students regarding self-regulated learning (SRL) during a fully online semester, providing valuable insights into the strategies they employed and the external factors that influenced their learning experiences.

As highlighted in the findings, SRL proved to be a vital element in students' ability to navigate the challenges of online learning. The pandemic has further emphasized the need to understand how SRL works in various educational contexts, especially as learning becomes increasingly digital and autonomous. The three key themes; strategies for self-regulation, SRL challenges during the pandemic, and support systems and external resources underscore the complexity of SRL in an online context and reflect the adaptability of students in response to the shifting learning environment.

The implications of this study are multifaceted, offering both practical insights for educators and theoretical contributions to the field of SRL. For educators, the study highlights the importance of providing structured support and fostering a collaborative online community to enhance students' self-regulation skills. From a practical standpoint, there seem to be a need to integrate SRL training into curriculum design. Educators should consider embedding SRL strategies into their teaching practices, offering opportunities for students to set goals, monitor progress, and reflect on their learning experiences. By fostering a culture of self-regulation, educators can help students become more independent and effective learners. The findings also emphasize the need for flexible and adaptable learning environments that allow students to exercise autonomy while providing the necessary resources and guidance. These insights can inform the design of online courses and interventions aimed at strengthening SRL skills among students, particularly in times of transition or crisis.

Despite its contributions, this study is not without limitations. The small sample size and the focus on a single cultural context limit the extend of settings and discussion of the findings. Future research could expand on this study by incorporating larger and more diverse samples to explore the variability of SRL experiences across different educational settings. Additionally, research could examine the effectiveness of specific interventions aimed at supporting SRL in online learning environments, such as time management workshops, peer mentoring programs, and personalized feedback systems. Longitudinal studies could provide valuable insights into how SRL skills develop and how they can be nurtured through targeted educational practices. Mixed-methods approaches that combine qualitative and quantitative data could provide a more holistic understanding of the factors influencing SRL and its impact on learning outcomes.

In conclusion, this study affirms the critical role of SRL in online learning, particularly during times of transition, such as the pandemic. The findings reinforce the need for educational institutions to support students in developing the skills necessary to regulate their learning effectively. As online education continues to evolve, future research and practice should prioritize strategies that foster self-regulation, ensuring that students are equipped to succeed in increasingly digital and dynamic learning environments. This study's contributions offer a foundation for further exploration into how SRL can be better supported in online contexts, paving the way for improved educational practices and more resilient learners in the future.

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