

Exploring Indonesian University Students' Learning Experiences in a Technology-Supported Flipped Grammar Classroom: A Self-Regulated Learning Perspective

Johari Afrizal*¹, Maslawati Mohamad², Melor Md Yunus³

^{1,2,3}Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia

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ABSTRACT

Grammar learning is a fundamental component of English as a Foreign Language (EFL) education, and technology-supported instruction has created new opportunities to enrich students' learning experiences. However, limited research has examined how students experience technology-supported flipped grammar learning through the lens of self-regulated learning. This qualitative case study explored the learning experiences of 15 Indonesian university students enrolled in a technology-supported flipped EFL grammar classroom. Data were collected through semi-structured interviews and analysed using Braun and Clarke's thematic analysis. The findings indicate that flipped grammar learning extended beyond classroom instruction by encouraging students to engage with grammar before, during, and after class. Pre-class learning enabled students to build initial understanding, allowing classroom sessions to focus on discussion, collaboration, and lecturer feedback. Students also demonstrated self-regulated learning by preparing before class, monitoring their understanding through reviewing materials and seeking additional resources, and reflecting on their learning throughout the instructional process. Although students developed greater responsibility for learning, they continued to rely on lecturer guidance when encountering challenging grammar concepts. The study concludes that technology alone does not ensure effective flipped learning. Instead, meaningful grammar learning emerges from the integration of well-designed digital resources, active classroom interaction, continuous lecturer support, and students' self-regulated learning. These findings provide further insight into how technology, pedagogy, and learner agency interact to support grammar learning in Indonesian higher education.

Keywords: EFL, flipped learning, grammar learning, higher education, self-regulated learning, technology-supported learning.

INTRODUCTION

Grammar remains a fundamental component of English language learning because it provides the linguistic foundation for accurate and meaningful communication. However, grammatical knowledge alone does not necessarily enable learners to use English effectively in authentic communicative situations. In many English as a Foreign Language (EFL) contexts, learners are able to recognize grammatical structures and perform well in formal assessments but still experience difficulties applying them appropriately in real communication. Effective grammar learning therefore requires learners not only to understand grammatical rules but also to use them meaningfully in authentic contexts. Recent studies have emphasized that contextualized and communicative grammar instruction promotes deeper understanding and more successful language use than isolated rule-based practice (Mustafa & Al Bajalani, 2024; Vidal et al., 2024).

To address these challenges, language educators have increasingly adopted learner-centred instructional approaches that promote active participation and greater learner responsibility. Among these approaches, the flipped classroom has attracted considerable attention because it relocates initial content learning to the pre-class phase while reserving classroom time for discussion, collaboration, problem-solving, and knowledge application. Supported by digital technologies, flipped learning enables students to access learning materials before class and participate more actively during classroom activities. Recent reviews indicate that technology-

supported flipped learning enhances learner engagement, promotes collaborative learning, and extends language learning beyond classroom boundaries through digital platforms and multimedia resources (Baig & Yadegaridehkordi, 2023; Fisher et al., 2024; Zou et al., 2022). Nevertheless, technology itself does not guarantee successful learning. Rather, the effectiveness of flipped instruction depends largely on learners' ability to engage independently with learning materials and actively regulate their learning throughout different phases of instruction.

Previous studies have shown that students demonstrate different levels of engagement in flipped learning environments. While some learners actively prepare before class, monitor their understanding, and participate in classroom discussions, others engage only superficially or fail to complete assigned learning tasks (Chen et al., 2023). These differences suggest that successful participation in flipped classrooms requires more than access to digital learning resources; it also depends on learners' capacity to regulate their own learning. Self-Regulated Learning (SRL) therefore provides an appropriate theoretical perspective for understanding how learners manage their learning in technology-supported environments. According to Zimmerman's (2000, 2002) social cognitive model, SRL is a cyclical process comprising three interrelated phases: forethought, performance, and self-reflection—through which learners set goals, implement learning strategies, monitor their progress, and evaluate learning outcomes. Panadero (2017) further explains that SRL provides a comprehensive framework for understanding how learners regulate cognition, motivation, and behaviour across learning contexts. Consistent with this perspective, learners with stronger self-regulatory abilities are more likely to participate successfully in technology-supported flipped learning environments (Wang, 2023).

Despite the growing body of research on flipped learning and SRL, important gaps remain. Previous studies have primarily examined flipped learning in relation to learning outcomes, learner engagement, and students' perceptions (Baig & Yadegaridehkordi, 2023; Chen et al., 2023; Fisher et al., 2024). Comparatively less attention has been devoted to understanding how learners regulate grammar learning throughout the pre-class, in-class, and post-class phases of technology-supported flipped instruction, particularly in higher education EFL contexts. Recent reviews also call for further research explaining the mechanisms through which self-regulated learning shapes students' learning experiences in flipped language classrooms (Kong et al., 2024). Addressing this gap is particularly important in Indonesian higher education, where students are increasingly expected to become autonomous learners while adapting to technology-enhanced learning environments.

This study therefore explores Indonesian university students' learning experiences in a technology-supported flipped EFL grammar classroom from a Self-Regulated Learning perspective. Guided by Zimmerman's SRL framework, the study examines how students plan, monitor, and reflect on grammar learning before, during, and after classroom instruction. By conceptualizing SRL as a dynamic learning process rather than merely an individual learner characteristic, this study contributes empirical evidence from an Indonesian EFL higher education context and provides pedagogical insights for designing technology-supported grammar instruction that better supports students' self-regulated learning.

The study addresses the following research questions:

1. What are Indonesian university students' learning experiences in a technology-supported flipped EFL grammar classroom?
2. How do self-regulated learning processes shape Indonesian university students' learning experiences in a technology-supported flipped EFL grammar classroom?

LITERATURE REVIEW

Technology-Supported Flipped Learning in EFL Grammar Education

Technology-supported flipped learning has become an increasingly important instructional approach in EFL grammar education because it reorganizes how grammatical knowledge is introduced and practiced. Öztürk and Çakıroğlu (2021) explained that flipped learning shifts initial content acquisition to the pre-class stage, enabling

classroom sessions to focus on discussion, collaborative problem-solving, and language practice. This learner-centered approach encourages students to assume greater responsibility for learning while providing flexible access to digital resources. In language education, technology therefore functions not only as a medium for delivering instructional materials but also as a pedagogical resource that supports active learning and learner engagement (Heredia Ponce et al., 2022). Recent reviews further indicate that the effectiveness of flipped learning depends more on the quality of instructional design than on technology itself (Baig & Yadegaridehkordi, 2023; Bintz et al., 2024).

Recent empirical evidence consistently demonstrates the positive contribution of technology-supported flipped learning to language learning in higher education. Chen et al. (2023) confirmed through a Bayesian meta-analysis that flipped language classrooms significantly improve learning outcomes across higher education contexts. Similar benefits have been reported in relation to learner autonomy, self-regulated learning, classroom participation, and second language development when pre-class preparation is effectively integrated with collaborative classroom activities (Tsai, 2021; Wang, 2023; Yan et al., 2024). Collectively, these findings suggest that the educational value of flipped learning lies in the meaningful connection between independent preparation and active classroom interaction rather than in the use of digital technology alone.

Although the advantages of flipped learning have been widely documented, successful implementation depends on careful instructional planning. Cevikbas and Kaiser (2022) emphasized that personalized learning requires coherent alignment between digital resources, classroom activities, and learning objectives. Poorly designed online materials or weak integration between online and face-to-face learning may reduce students' engagement and limit the potential benefits of flipped instruction (Heredia Ponce et al., 2022). Consequently, technology should be viewed as a means of facilitating pedagogically meaningful learning experiences instead of simply providing digital access to instructional content.

Despite growing evidence supporting flipped learning, relatively little attention has been paid to how technology-supported flipped instruction shapes students' learning experiences during grammar learning in EFL higher education. Kong et al. (2024) observed that previous research has largely focused on instructional effectiveness and learning outcomes, while learners' experiences throughout the flipped learning process remain underexplored. Addressing this gap is important because students' experiences may provide deeper insights into how technology-supported flipped learning supports meaningful grammar learning and prepares learners for more active participation throughout the learning process.

Self-Regulated Learning in Technology-Supported Language Learning

Self-regulated learning (SRL) has become a fundamental concept in technology-supported language learning because digital environments require learners to assume greater responsibility for managing their own learning. Zimmerman (2000, 2002) conceptualized SRL as a cyclical process in which learners actively plan, monitor, and evaluate their learning to achieve academic goals. Rather than viewing learners as passive recipients of instruction, this perspective emphasizes learners' active role in selecting learning strategies, regulating motivation, and reflecting on learning outcomes. In technology-supported learning environments, these regulatory processes become increasingly important because students are expected to make informed decisions about when, how, and to what extent they engage with digital learning resources.

Recent empirical evidence indicates that technology-supported language learning can strengthen learners' self-regulatory skills when instructional activities encourage purposeful engagement and strategic learning. An et al. (2021) reported that SRL was positively associated with English self-efficacy, learning enjoyment, and academic achievement in technology-assisted language learning. Similarly, Öztürk and Çakıroğlu (2021) demonstrated that flipped learning promoted learners' ability to plan, monitor, and evaluate their learning through structured pre-class preparation and collaborative classroom activities. Samadi et al. (2024) further found that flipped instruction enhanced both self-regulated learning and higher-order thinking skills among EFL learners. Likewise, recent research in technology-enhanced language learning has shown that explicit instructional support and appropriate learning resources play an important role in developing learners' self-regulatory behaviours in digital learning environments.

Despite these positive findings, SRL does not develop automatically through the use of technology alone.

Students still require appropriate instructional guidance, timely feedback, and well-designed learning activities to regulate their learning effectively. Without these forms of support, digital resources may increase access to learning materials while contributing little to learners' planning, monitoring, or self-evaluation (An et al., 2021; Öztürk & Çakıroğlu, 2021; Samadi et al., 2024). These findings suggest that technology is most effective when it is integrated with pedagogical practices that intentionally foster learners' self-regulatory processes.

Although previous studies have established the importance of SRL in technology-supported language learning, relatively limited attention has been given to how self-regulatory processes specifically shape grammar learning in technology-supported flipped EFL classrooms (An et al., 2021; Öztürk & Çakıroğlu, 2021; Samadi et al., 2024). Existing research has primarily examined SRL in relation to language achievement, learner autonomy, and higher-order thinking, whereas its role in explaining students' learning experiences during technology-supported flipped grammar instruction remains insufficiently explored (Kong et al., 2024). Addressing this gap provides a stronger conceptual foundation for interpreting students' learning experiences from a self-regulated learning perspective, which is the focus of the present study.

Learning Experiences in Flipped Language Classrooms: An SRL Perspective

Students' learning experiences have become an important focus of research on technology-supported flipped learning because they provide valuable insights into how learners engage with instructional activities before, during, and after classroom instruction. In flipped EFL grammar classrooms, students are expected to access digital learning materials independently prior to class and participate actively in collaborative learning during face-to-face sessions. Heredia Ponce et al. (2022) argued that this instructional approach extends learning beyond the classroom while creating opportunities for greater learner participation and interaction. Consequently, learning experiences in flipped classrooms are shaped not only by the availability of technology but also by how learners engage with instructional activities throughout the learning process (Kong et al., 2024).

Recent empirical studies have consistently reported positive learning experiences among students participating in technology-supported flipped language classrooms. Chang (2023) found that flipped grammar instruction enhanced students' learning motivation, confidence, and classroom participation, particularly when pre-class learning activities were meaningfully connected with classroom practice. Likewise, Tsai (2021) reported that independent preparation encouraged learners to contribute more actively during classroom discussions and promoted greater responsibility for learning. Similar findings were reported by Wang (2023) and Yan et al. (2024), who observed that students experienced higher engagement and more meaningful interaction when digital learning activities were effectively integrated with collaborative classroom instruction. Collectively, these studies suggest that positive learning experiences emerge from the complementary relationship between independent preparation and active classroom participation.

Nevertheless, students' learning experiences are influenced by several instructional and contextual factors. Öztürk and Çakıroğlu (2021) observed that learners may experience difficulties when they are insufficiently prepared for independent learning or encounter challenges in managing pre-class activities. Similarly, Samadi et al. (2023) demonstrated that supportive instructional practices and meaningful classroom interaction contribute substantially to students' engagement and overall learning experiences. These findings indicate that technology alone cannot ensure positive learning experiences unless it is supported by well-designed learning activities and effective classroom facilitation.

Although previous research has documented students' experiences in flipped language classrooms, relatively limited evidence is available regarding how Indonesian university students experience technology-supported flipped grammar learning in EFL contexts. Existing studies have primarily emphasized instructional effectiveness and language achievement, whereas students' experiences throughout different stages of flipped grammar learning remain underexplored (Kong et al., 2024). Examining these experiences from a self-regulated learning perspective may therefore provide deeper insights into how students engage with technology-supported flipped grammar instruction and construct meaningful learning experiences.

Theoretical Framework

This study draws on Zimmerman's Self-Regulated Learning (SRL) theory (Zimmerman, 2000, 2013), which views learning as a cyclical process consisting of forethought, performance, and self-reflection. In the forethought phase, learners establish goals, plan strategies, and prepare for learning tasks. During the performance phase, they apply strategies, monitor their understanding, and adjust their actions while completing learning activities. The self-reflection phase involves evaluating learning outcomes and considering how these experiences influence subsequent learning.

Zimmerman's SRL framework provides the theoretical perspective for examining students' experiences in a technology-supported flipped EFL grammar classroom. The three phases of SRL inform the analysis of how participants describe their preparation before class, engagement with online and classroom activities, and reflections after instruction. Using this perspective makes it possible to understand how students regulate their learning across different stages of flipped instruction and how these processes are reflected in their accounts of learning.

METHODOLOGY

Research Design

This study employed a qualitative case study to explore how Indonesian university students experienced learning grammar in a technology-supported flipped classroom. The study was designed to understand students' learning experiences rather than evaluate the effectiveness of the instructional approach. A qualitative case study was considered appropriate because it allows researchers to investigate a phenomenon in its real-life context while capturing participants' perspectives in depth (Creswell & Poth, 2018; Yin, 2018).

Research Context and Participants

The study was conducted in an Intermediate English Grammar course offered by an English language education program at an Indonesian university. Before the study began, the lecturer had already implemented a technology-supported flipped learning model as part of regular classroom practice. Prior to each class, students were expected to watch instructional videos and read supporting PDF materials uploaded to the university's online learning platform. Classroom meetings were then used for discussion, collaborative activities, grammar practice, and clarification of concepts that students found difficult. Because the instructional approach was already embedded in the course, the study observed students' learning experiences in their usual classroom setting (Bergmann & Sams, 2012; Lo & Hew, 2017).

The participants were 15 first-year students enrolled in the course, consisting of 10 female and 5 male students aged between 18 and 21 years. Based on the university placement test, their English proficiency ranged from lower-intermediate to upper-intermediate. All students agreed to participate voluntarily after receiving information about the purpose of the study, confidentiality procedures, and their right to withdraw at any time. Verbal informed consent was obtained from every participant, and pseudonyms (S1–S15) were used in all transcripts and reports to protect their identities. The number of participants was considered appropriate for qualitative case study research because the emphasis was on obtaining rich descriptions rather than statistical representation (Merriam & Tisdell, 2016).

Data Collection

Three sources of qualitative data were used: semi-structured individual interviews, focus group discussions, and reflective journals. All 15 participants took part in the individual interviews (II), which lasted approximately 20–30 minutes each. The interviews explored students' preparation before class, participation during classroom activities, learning strategies, and challenges encountered while learning grammar. Their flexible format allowed participants to describe their experiences freely while enabling the researcher to probe issues that emerged during the conversation (Kallio et al., 2016).

After the interviews, the participants took part in two focus group discussions (FGDs), each lasting about 45–60 minutes. These discussions encouraged students to compare experiences, respond to one another's views, and elaborate on issues that had emerged during the interviews (Krueger & Casey, 2015).

Reflective journals (RJ) provided an additional source of data. Each participant completed two journals during the semester, one before the mid-term examination and another before the final examination. The journals documented students' learning experiences, challenges, and reflections as they progressed through the course.

All interviews were conducted in Indonesian to enable participants to express their views comfortably and in detail. Before data collection, the interview protocols were reviewed by two experts in English language education to ensure their clarity and alignment with the objectives of the study.

Data Analysis

Self-Regulated Learning (SRL) theory guided the interpretation of the findings. Rather than serving as a predetermined coding framework, SRL was used during the analysis to interpret how students prepared for learning, monitored their understanding, sought support, and reflected on their learning (Zimmerman, 2002; Panadero, 2017). Interview and focus group recordings were transcribed verbatim and analysed together with the reflective journals. The data were analysed using Braun and Clarke's (2006) six-phase thematic analysis. The analysis began with repeated reading of the transcripts and journals to become familiar with the dataset. Initial codes were then generated inductively from participants' accounts of their preparation, classroom participation, learning strategies, difficulties, and reflections. Similar codes were compared and grouped into broader themes through repeated review across the three data sources.

The analysis was conducted in two stages. First, themes were developed inductively from participants' accounts rather than assigned to the SRL framework at the beginning. Second, the resulting themes were interpreted using Zimmerman's SRL framework (2000, 2002) to understand how the reported learning practices related to the forethought, performance, and self-reflection phases. Thus, SRL was used to interpret patterns that emerged from the data rather than to determine the initial codes. For example, codes such as watching videos before class, reviewing PDF materials, making notes, and preparing questions were grouped under Preparing for Learning and interpreted mainly in relation to the forethought phase. Codes related to replaying videos, pausing explanations, reviewing difficult sections, searching for additional explanations, and seeking clarification were grouped under Managing Learning Challenges and interpreted mainly in relation to the performance phase. Participants' accounts of recognising what they understood, identifying difficult areas, and reflecting on their participation and confidence were considered in relation to the self-reflection phase. Taking Responsibility for Learning brought these processes together by showing how students managed their learning across different stages of the flipped classroom. The relationship between the coding process and the SRL framework is summarised in Table 1.

Data collection and analysis proceeded iteratively, with emerging patterns compared across participants and the three data sources. During the interviews, each subsequent account was compared with patterns identified in earlier interviews to determine whether substantially new issues were emerging. The patterns identified from the interviews were then compared with the focus group discussions and reflective journals to check whether these sources introduced new patterns or mainly confirmed, elaborated, or contrasted with the existing ones. Data collection was considered sufficient when subsequent data no longer generated substantially new patterns relevant to the research questions. Saturation did not mean that all participants reported the same experiences; variations and contrasting accounts were retained as part of the analysis.

Table 1. Coding framework linking initial codes, themes, and SRL phases

Representative initial codes	Developed theme	SRL interpretation
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Watching videos before class; reviewing PDF materials; making notes; preparing questions	Preparing for Learning	Forethought
Replaying videos; pausing explanations; reviewing difficult sections; searching for additional explanations	Managing Learning Challenges	Performance
Asking classmates or the lecturer for clarification; changing learning strategies when materials were unclear	Managing Learning Challenges	Performance
Recognising difficult areas; evaluating understanding; reflecting on confidence and participation	Taking Responsibility for Learning	Self-reflection
Combining independent preparation with classroom discussion and lecturer feedback	Experiencing Flipped Grammar Learning	Across the SRL cycle

FINDINGS

Experiencing Flipped Grammar Learning

Students described flipped grammar learning as a learning experience that combined technology-supported preparation with more interactive classroom activities. Before attending class, they were expected to watch instructional videos and read learning materials provided by the lecturer. These pre-class activities helped them develop an initial understanding of the lesson before classroom discussions. S1 explained that *“by watching the videos, we already had an idea about the material that would be discussed in class”* (S1, II). S3 shared a similar view, describing the videos as *“a provision”* that provided students with basic knowledge before attending class (S3, II).

Participants also felt that the flipped approach made classroom learning more meaningful. Because they had studied the materials beforehand, classroom time focused on discussion, clarification, grammar exercises, presentations, and lecturer feedback rather than lengthy explanations. S7 highlighted that *“students study the material independently before class, so class time can focus on deeper discussion, examples, and feedback”* (S7, RJ). S3 also noted that the approach encouraged more discussions and presentations, increasing interaction during classroom learning (S3, RJ).

Another benefit frequently mentioned was the opportunity to learn from both digital materials and the lecturer. Students explained that the videos provided initial explanations, while classroom discussion helped clarify concepts that were still unclear. As S5 stated, *“I got two explanations, one explanation from the video and another from the lecturer. So that way I will better understand the material to be studied”* (S5, II).

Students also valued the flexibility of the learning materials. Videos could be accessed repeatedly whenever they needed additional explanation, allowing them to study according to their own pace. S10 explained that the materials could be studied *“anytime and anywhere”* and replayed whenever necessary (S10, II). In addition, S4 noted that the lecturer's use of familiar, real-life examples made grammar concepts easier to understand (S4, RJ).

Overall, participants viewed flipped grammar learning as a more active and flexible approach than conventional grammar instruction. The combination of pre-class preparation, interactive classroom activities, and lecturer guidance enabled students to engage with grammar learning more actively throughout the course.

Preparing for Learning

Preparing before class became an important part of students' learning routines in the flipped grammar classroom. Unlike their previous learning experiences, students were expected to study the assigned materials before attending class. Most participants explained that they watched instructional videos, reviewed PDF materials, made notes, and prepared questions before classroom discussions. S8 explained that the flipped approach encouraged students to *“study the material first, prepare notes or questions, and sometimes look for additional references”* before coming to class (S8, II).

Students adopted different strategies to understand the learning materials. Replaying instructional videos was one of the most common approaches, particularly when they encountered difficult grammar concepts. S4 explained that when she did not understand a topic, she watched the video again and tried to create her own example sentences based on the explanation (S4, II). S6 described a similar strategy, explaining that she first watched the entire video to gain a general understanding before replaying particular sections while pausing to write summaries (S6, II). Reflective journals revealed the same pattern, with S2 writing, *"I usually watch it several times, then pause it and watch it again"* (S2, RJ).

Several participants also used additional learning resources to strengthen their understanding. When the assigned videos were not sufficient, they searched for alternative explanations on the internet before attending class. As S10 explained, she looked for additional grammar explanations online whenever the videos remained unclear (S10, II). Besides searching for other resources, students also prepared questions about concepts they found difficult so they could seek clarification during classroom discussions.

Preparing before class increased students' confidence during learning activities. Having reviewed the materials in advance, they felt better prepared to participate in discussions and respond to the lecturer's questions. S6 explained that the flipped approach allowed students to study *"anytime and anywhere according to each student's needs"* (S6, II), while S1 reported feeling more confident because she had already studied the materials before class (S1, II).

Overall, participants viewed pre-class preparation as an essential part of flipped grammar learning. Watching videos, reviewing learning materials, making notes, searching for additional information, and preparing questions enabled them to participate more actively during classroom discussions and grammar activities.

Managing Learning Challenges

Although students generally viewed flipped grammar learning positively, their experiences were not the same. The difficulties they described were related to understanding grammar concepts independently, the design of digital learning materials, technical problems, and the limited opportunity to obtain immediate clarification from the lecturer.

Understanding grammar independently before class was one of the most frequently mentioned challenges. Several participants explained that watching the videos did not always result in a complete understanding of the lesson. S9 admitted that *"the learning material is sometimes difficult to understand, so even though I have watched the video and the lecturer's explanation, it is still not enough for me to understand it"* (S9, II). Similarly, S5 explained that she sometimes needed to replay the videos or reread the PDF materials because some grammar concepts remained difficult to understand (S5, RJ).

The amount and format of the video materials also affected how students engaged with pre-class learning. While participants appreciated being able to access the materials repeatedly, several students found lengthy videos difficult to complete. S5 explained that *"the videos are long, so I only chose one of the three videos"* (S5, II). S12 similarly noted that long videos sometimes led her to skip parts of the lesson (S12, FGI). This issue was also reflected in the journal data, with S15 describing long videos as boring to watch (S15, RJ). In addition, S4 reported that some videos could not be played properly, which occasionally interrupted her preparation (S4, RJ).

Another difficulty concerned the timing of lecturer support. The videos allowed students to study independently, but they could not always provide the immediate clarification that students needed when they encountered difficult grammar concepts. S11 explained that *"all the questions that are on my mind are not answered immediately, and I have to wait until tomorrow"* (S11, II). S12 similarly stated, *"sometimes I don't understand what is explained in the video, so I need an explanation from the lecturer"* (S12, FGI).

These difficulties were not experienced equally by all participants. S4, for example, expressed a clear preference for traditional classroom instruction because she could ask the lecturer directly. She explained, *"I actually understand the lesson more quickly if it is taught using traditional methods because I can ask the lecturer"*

directly” (S4, II). Her account differs from the more positive experiences reported by most participants and shows that independent pre-class learning was not equally comfortable for everyone.

At the same time, students described several ways of dealing with these difficulties. They replayed videos, reread the PDF materials, searched for other explanations, discussed difficult points with classmates, and brought unanswered questions to the classroom. Thus, the challenges were closely connected with the ways students managed their learning. Rather than showing a simple positive or negative response to flipped learning, the participants' accounts suggest that their experiences depended partly on how they responded to difficulties and on the support available to them.

Taking Responsibility for Learning

As students became more familiar with the flipped classroom, they described taking greater responsibility for their learning. This responsibility was mainly reflected in how they prepared before class, monitored their understanding, and decided when to seek additional help.

Preparation before class was one way students managed this responsibility. They watched instructional videos, reviewed learning materials, prepared questions, and organised their study before attending classroom sessions. S6 explained that *“the flipped classroom gave me more time to prepare the material, understand it more deeply, and prepare questions before coming to class”* (S6, II). Similarly, S11 reflected that *“by studying the material beforehand, I already knew which parts I still didn't understand, so I could ask about them in class”* (S11, RJ).

Students also monitored their understanding by using different strategies when the materials were difficult. S13 explained, *“I replayed the parts that I didn't understand, wrote down the important points, and discussed them in class”* (S13, II). S3 similarly stated, *“I paused the video to write down important information and watched it again if I still didn't understand”* (S3, RJ). S10 reported that she *“looked for additional explanations on the internet whenever the videos were still unclear”* (S10, II).

Students also reflected on their learning progress. S6 noted that studying the material before class made her more confident when answering the lecturer's questions (S6, RJ), while S10 described students as having greater control over their learning process (S10, RJ). However, these accounts should be understood as students' perceptions of their learning experiences rather than evidence of objectively improved grammar achievement. The study did not include a grammar proficiency test or another direct measure of learning outcomes.

Overall, the findings suggest that students' responsibility developed through a combination of preparation, monitoring, reflection, and help-seeking. The flipped classroom gave students more opportunities to manage their learning, but the extent to which they could use these opportunities varied according to their understanding of the materials, their preferred way of learning, and the support they received.

DISCUSSION

The findings show that students experienced the flipped grammar classroom as a learning approach that required preparation before class and active participation during class. Their accounts were generally positive, although the experience was not the same for everyone.

For the first research question, students described pre-class preparation as an important part of their learning. Before class, they watched videos, reviewed PDF materials, took notes, and sometimes searched for additional explanations. Students who had reviewed the materials described feeling more prepared to answer questions, participate in discussions, and identify parts of the lesson that they did not understand. This finding is consistent with previous research showing that the value of flipped learning depends on how pre-class learning is connected with classroom activities rather than on the availability of digital materials alone (Baig & Yadegaridehkordi, 2023; Bintz et al., 2024). In this study, the pre-class materials provided an initial explanation, while classroom activities allowed students to clarify and extend their understanding.

Students did not all use the pre-class materials in the same way. Some replayed videos, paused them to take notes, reviewed difficult sections, or searched for alternative explanations. These practices gave students flexibility in deciding how and when to review the material. However, the same flexibility was not equally helpful for everyone. Some students skipped lengthy videos, experienced technical problems, or found grammar difficult to understand without direct explanation. Delayed clarification was also a difficulty when questions could not be resolved until class. These experiences show that flexibility was useful for some students but did not remove the difficulties associated with independent grammar learning.

The differences between students were particularly clear in S4's experience. She reported that she understood the lesson more quickly when it was taught traditionally because she could ask the lecturer directly. Her preference does not necessarily mean that she rejected flipped learning as a whole. Rather, it shows that immediate interaction with the lecturer remained important when she encountered difficulty with grammar. This is relevant to research on flipped English learning readiness, which highlights students' readiness to engage with pre-class learning and take greater responsibility for their learning (Luo & Gan, 2022). S4's experience therefore suggests that students may need different levels of support when adapting to flipped learning.

The lecturer also remained an important part of the classroom experience. Classroom activities gave students opportunities to ask questions, discuss difficult points, practise grammar, and receive feedback after their initial preparation. Thus, students' experiences of the flipped grammar classroom involved both greater responsibility for preparation and continued access to classroom support. This completes the discussion of the first research question.

The second research question focused on how students regulated their learning. The findings can be understood through the three phases of Zimmerman's SRL model (2000, 2002). In the forethought phase, students prepared for class by watching the assigned videos, reading the materials, taking notes, and preparing questions. They also used the materials to identify what they understood and what they needed to clarify in class. Preparation therefore involved both completing assigned activities and deciding what they needed to learn before entering the classroom.

The performance phase was evident when students encountered difficulties with the materials. Some replayed particular sections, paused videos, made notes, reread PDF materials, or searched for additional explanations. These strategies indicate that students monitored their understanding and adjusted their learning behaviour when something was unclear. This is consistent with Panadero's (2017) explanation of SRL as a process in which learners regulate their cognition, behaviour, and learning strategies. It also supports previous research on SRL in flipped and technology-supported EFL learning (An et al., 2021; Öztürk & Çakıroğlu, 2021; Samadi et al., 2024).

Self-reflection was less visible as a separate activity after every class, but it appeared when students described recognising what they had and had not understood, evaluating their preparation, and considering what they needed to ask. Reflection was therefore not necessarily a formal post-class activity. It was often part of students' ongoing decisions about what to review, what to ask, and whether they needed additional help.

An important point from the second research question is that self-regulation did not mean learning grammar without support. Students moved between independent preparation and help-seeking according to their needs. When they could not resolve a problem by replaying a video or reviewing the PDF, they sought assistance from classmates or the lecturer. Help-seeking was therefore part of the regulation process rather than evidence that students had failed to become autonomous. Recent research on technology-enhanced language learning similarly shows that teacher support can help learners engage in self-regulated learning through guidance, resources, and scaffolding (Wang et al., 2024).

This finding also helps explain learner autonomy in this context. Greater responsibility did not replace the lecturer's role. Students became more responsible for identifying what they needed to learn, choosing strategies to deal with difficulties, and deciding when they needed assistance, while the lecturer remained an important source of explanation and feedback. This interpretation is consistent with research showing that learner

autonomy in tertiary EFL contexts can coexist with appropriate instructional support (Arafat & Al Khshali, 2025). In this study, self-regulation was therefore a supported process rather than a requirement for students to learn entirely on their own.

The main contribution of the study is to show how SRL operated within a flipped grammar classroom. The findings show that SRL involved preparation, monitoring, strategy adjustment, reflection, and help-seeking. These processes were not separate skills used only at one point in learning; students moved between them as they worked through learning tasks and decided whether they needed further assistance. This adds to previous work on flipped EFL learning by showing how SRL can operate together with instructional support in a technology-supported grammar classroom (Öztürk & Çakıroğlu, 2021; Samadi et al., 2024; Wang et al., 2024).

The students also reported feeling more prepared, more confident in classroom activities, and more responsible for their learning. These reports are useful for understanding their learning experiences, but they should not be interpreted as evidence that the flipped approach improved grammar proficiency. The study did not include a grammar achievement test or another objective measure of grammatical development. Therefore, the findings provide evidence about students' experiences and self-regulatory processes rather than measurable gains in grammar achievement. This distinction is important for keeping the interpretation consistent with the qualitative design of the study.

For EFL grammar instruction in Indonesian higher education, the findings suggest that students' responsibility for learning should be accompanied by appropriate instructional support. Students should be given opportunities to prepare, monitor their understanding, reflect on their learning, and seek assistance when necessary. Such an approach can support students' development of self-regulation while maintaining the lecturer's role as a source of guidance and feedback (Wang et al., 2024).

CONCLUSION

This study explored Indonesian university students' learning experiences in a technology-supported flipped EFL grammar classroom from a Self-Regulated Learning (SRL) perspective. The findings show that grammar learning extended beyond classroom meetings through students' preparation, classroom participation, and ongoing efforts to manage their learning. Before class, students watched videos, reviewed PDF materials, took notes, prepared questions, and sometimes searched for additional explanations. Classroom time then provided opportunities for discussion, grammar practice, clarification, and lecturer feedback.

The findings also show that students used different strategies to manage learning difficulties. They replayed videos, reviewed difficult sections, searched for additional explanations, and sought help from classmates or the lecturer. These practices reflected the forethought, performance, and self-reflection phases of Zimmerman's SRL model. However, self-regulation was not experienced equally by all students. Some students struggled with difficult grammar concepts, lengthy videos, technical problems, or delayed clarification. S4, for example, preferred traditional instruction because direct interaction with the lecturer helped her understand grammar more quickly. This divergent experience shows that greater learner responsibility does not eliminate the need for instructional support.

The findings therefore suggest that independent learning and lecturer guidance should be viewed as complementary in flipped grammar instruction. The main contribution of this study is not evidence that technology itself improves grammar learning, but an account of how students' preparation, monitoring, strategy adjustment, reflection, and help-seeking operated across different stages of flipped grammar learning. SRL was therefore evident as a supported and context-dependent process rather than as independent learning without teacher assistance.

Importantly, students' reports of greater confidence, preparedness, and responsibility should not be interpreted as evidence of improved grammar achievement. The study did not include a grammar proficiency test or another objective measure of grammatical development. The findings instead provide qualitative insight into students' learning experiences and self-regulatory processes.

The study is limited to 15 first-year students in one Intermediate English Grammar course at one Indonesian university; therefore, the findings provide contextual insight rather than statistical representation of Indonesian higher education. For practice, lecturers should provide manageable and well-designed pre-class materials, connect these materials clearly with classroom activities, and maintain opportunities for clarification and feedback. Future research could combine qualitative investigation of SRL with objective measures of grammar achievement across multiple courses or institutions to examine whether the self-regulatory processes identified here are associated with measurable changes in grammatical proficiency.

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