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Students, How Cognitively Engaged Are You in English Flipped Classrooms? A Qualitative Study of EFL Learners

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ABSTRACT
The rapid development of digital technology has encouraged the adoption of innovative instructional models in higher education, including the English Flipped Classroom (EFC). Although widely recognized for promoting autonomy and active learning, empirical evidence on its impact on cognitive engagement among university-level English as a Foreign Language (EFL) learners remains limited and inconsistent. Situated in an undergraduate EFL program at a public university in Banjarmasin City, this qualitative descriptive study explored how first-semester EFL students cognitively engage in an EFC environment using Pohl's (2020) framework of motivation and cognitive–metacognitive strategy use. Five high-achieving students were purposively selected, and data were collected through semi-structured interviews examining pre-class, in-class, and post-class learning phases. The findings reveal three interrelated patterns of cognitive engagement: sustained motivational engagement through positive task valuation and mastery-oriented goals; strategic learning regulation via independent resource use, peer collaboration, and instructor consultation; and behavioral persistence reflected in consistent time and effort investment across learning phases. While the EFC fostered meaningful cognitive engagement among novice EFL learners, the depth and consistency of engagement varied depending on students' strategic awareness. These findings suggest that flipped EFL instruction should be supported by explicit scaffolding, such as strategy modeling and guided reflection, to sustain cognitive engagement and optimize learning outcomes.

INTRODUCTION

Rapid advancements in digital technology have reshaped pedagogical orientations and instructional practices in higher education, creating growing interest in blended and technology-enhanced learning approaches (Hashemi, 2020). Among numerous innovations, the Flipped Classroom has emerged as a widely discussed instructional model and an extension of blended learning, defined as a design that reverses traditional teaching by shifting direct instruction outside the classroom while allocating in-class time for interactive, student-centered learning (Bergmann & Sams, 2012; Bishop & Verleger, 2013). As this model continues to expand globally in language education (Ağırman & Ercoşkun, 2022; Evseeva & Solozhenko, 2015), researchers have emphasized its potential to address classroom time limitations, foster autonomy, and deepen learning processes—particularly in English as a Foreign Language (EFL) instruction (Abdullah et al., 2021; Aycicek & Yelken, 2018; Lee & Wallace, 2018).

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Recent research on the EFC in EFL contexts has demonstrated generally positive outcomes, particularly in terms of learner autonomy, motivation, and classroom interaction. Many studies report improved language performance and increased participation when flipped designs are implemented with digital materials and collaborative in-class activities. However, the literature also reveals ongoing debates regarding the depth and consistency of learner engagement, especially beyond observable behaviors. While some studies highlight enhanced motivation and participation, others note uneven preparation, surface-level task completion, and learners' difficulty regulating their learning independently −challenges that are particularly pronounced among novice or lower-experience EFL learners. Moreover, existing EFC−EFL research has tended to emphasize achievement outcomes or behavioral engagement, with limited qualitative exploration of cognitive engagement as a multidimensional process involving motivation, strategy use, and self-regulation. As a result, how novice EFL learners cognitively engage across pre-class, in-class, and post-class phases remains underexplored. Addressing this gap is essential for understanding not only whether EFC works, but how and under what conditions it supports meaningful cognitive engagement in early-stage EFL learners.

Within EFL instruction, student engagement has become a central indicator of instructional effectiveness and learning sustainability (Abla & Fraumeni, 2019; Axelson & Flick, 2011). Fredricks et al. (2004) conceptualize engagement across three dimensions—behavioral, emotional, and cognitive—where cognitive engagement represents students' willingness to exert mental effort, employ strategies, and move beyond minimal task compliance. Pohl's (2020) framework conceptualizes cognitive engagement as a multidimensional process involving learners' motivation to invest effort in learning and their use of cognitive and metacognitive strategies to regulate that learning. In EFC contexts, where students are expected to prepare independently before class and apply knowledge during active learning sessions, this framework is relevant as it captures both the motivational and strategic dimensions necessary for successful engagement.

Increased cognitive engagement is considered crucial in the EFC environment because learners are required to regulate their learning outside class and actively participate during in-class activities (Abeysekera & Dawson, 2015; Christenson et al., 2012). Existing literature acknowledges that the EFC may enhance engagement (Jamaludin & Osman, 2014; Latipah et al., 2020; Millard, 2012), yet empirical evidence remains inconsistent, with some studies reporting variability tied to individual readiness, motivation, and adaptability to independent learning demands (Li & Li, 2022; Namaziandost & Cakmak, 2020).

Despite growing scholarly attention, the critical issue of cognitive engagement in EFC of EFL contexts remains under-examined, particularly among novice learners in higher education (Ammade et al., 2023; Hulwana, 2022). This gap signals an important line of inquiry: although the EFC is theoretically positioned to foster deeper learning, it is unclear whether students genuinely engage cognitively or merely comply with procedural requirements. Such questions are especially relevant in contexts where flipped learning has been recently adopted, and learners may still be transitioning from teacher-centered paradigms (Dewi et al., 2021; Ginting, 2021).

Positioned within this context, the present research focuses on first-semester students enrolled in English I—the compulsory course in the English Department—where the EFC is systematically implemented using the learning platform -Simari- prior to class, followed by collaborative and interactive learning during face-to-face sessions. To confirm that English I used EFC model, the researcher interviewed the lecturer of this class. It was found that in English I, the lesson materials were distributed through Simari before the offline class, then during offline class the lecturer would discuss about the lesson materials that have been shared previously on Simari. In addition, the lecturer also mentioned that students would answer NovoLearning Platform and Quizzes before class. The lecturer would also discuss about the lesson materials being used in the Quizzes as well during the offline class. Preliminary conversations with the course instructor indicate variability in how students navigate these two learning phases, suggesting potential differences in cognitive engagement.

To address this gap, the present study aims to explore how novice EFL learners cognitively engage in an EFC environment by employing Pohl's (2020) cognitive engagement framework as an analytical lens. This study makes three key contributions. First, it extends EFC–EFL research by foregrounding cognitive engagement as a multidimensional construct, integrating motivation, cognitive strategies, and metacognitive regulation rather than focusing solely on behavioral participation or achievement outcomes. Second, it concentrates on first-semester university EFL learners, a learner group that has received limited attention despite facing distinctive challenges in adapting to autonomous and technology-mediated learning environments. Third, through a qualitative descriptive approach, the study offers in-depth insights into learners' cognitive engagement across pre-class, in-class, and post-class learning phases, thereby providing nuanced empirical evidence on how engagement is enacted rather than merely whether it occurs. By doing so, this research seeks to clarify the conditions under which the EFC can meaningfully support cognitive engagement among novice EFL learners and inform pedagogical practices that better scaffold early-stage flipped learning.

METHODS

This research was conducted using a qualitative approach and descriptive method (Denzin and Lincoln, 2018). To collect primary data, an interview was conducted. This study employed purposive sampling (Fraenkel & Wallen, 2008) to select participants who could provide information-rich data relevant to the investigation of cognitive engagement in an EFC context. Five participants were selected from the 2022 cohort of the English Department who had completed the English I course and achieved a final grade of A (≥84), indicating consistently high academic performance.

Table 1. *The Framework of Cognitive Engagement by Cohl (2020)*

Variable	Indicators	Sub Indicators I	Sub Indicators II
Cognitive Engagement	Investment in learning/ motivation to learn	Valuing of learning	Feeling excited about new lessons and discussions
			Enjoying doing difficult assignments
		Demonstrating self-efficacy	Being confident in the ability to finish a task
			Being confident in the ability to learn something new
		Setting personal mastery goals and attributing success to effort	Viewing assignments and learning as an opportunity to improve their English skill
			Willing to take academic risks
		Investing time, attention, and effort in learning	Giving up other activities to finish a task
			Remaining fully focused on the assigned tasks
			Going beyond what required for a task
	Use of cognitive, metacognitive strategies to self-regulate one's learning	Planning	Setting their goals such as how much one is going to learn of a lesson's materials
			Breaking down assignments into manageable chunks
		Using specific study skills or learning strategies	Taking notes using one's own words
		Monitoring progress and adjusting strategies	Ensuring the comprehension of the lesson materials
			Checking how appropriate the accuracy is
		Self-evaluating and reflecting	Checking if any improvement in learning has been made

In addition to academic achievement, secondary data from a cognitive engagement questionnaire were used to ensure that selected participants demonstrated high levels of reported cognitive engagement. The decision to focus on high-achieving students was methodologically intentional, as these learners were more likely to articulate their learning processes, motivational

orientations, and use of cognitive and metacognitive strategies in depth. Given the qualitative descriptive design, selecting highly engaged students enabled an in-depth examination of how cognitive engagement unfolds across pre-class, in-class, and post-class phases, consistent with qualitative priorities of analytical depth over representativeness. However, this focus may underrepresent lower-achieving or less-engaged learners; thus, the findings reflect high-level cognitive engagement and are not intended to be fully generalizable.

The data analyzed from the interview were to synthesize the students' cognitive engagement in EFC for *English I* based on the indicators of cognitive engagement by Pohl (2020) as shown in Table 1. Pohl's (2020) framework includes valuing learning, demonstrating self-efficacy, setting mastery-oriented goals, and exerting sustained effort such as prioritizing academic tasks, remaining focused, and going beyond minimum requirements. At the same time, cognitively engaged learners plan their learning by setting goals and breaking tasks into manageable parts, apply study strategies like paraphrasing or note-taking, monitor their understanding and adjust strategies when needed, and reflect on their progress to evaluate improvement.

In analyzing the data, utilizing thematic analysis, the EFC are seen as pre-class, in-class and post class concerning the two indicators and four sub-indicators of cognitive engagement. Ethical considerations are by ensuring participants anonymity and data confidentiality

FINDINGS AND DISCUSSION

Investment in Learning/Motivation to Learn

Valuing of Learning

Students demonstrated cognitive engagement in English I by valuing their learning, as reflected in their excitement toward new lessons and their willingness to engage with challenging tasks across pre-class, in-class, and post-class phases. Rather than approaching learning activities as procedural requirements, students actively invested effort and attention, indicating that learning tasks were perceived as meaningful and worthwhile.

One prominent finding was students' proactive engagement with new lesson materials before and during class. During the pre-class phase via Simari, students reported immediately accessing learning materials and independently seeking additional resources to build initial understanding and prepare for classroom discussions. As one student stated,

> *"I immediately open the new lesson materials and learn it"* (Student D). Another student explained that previewing content helped create mental readiness: *"If there is any topic that I am not familiar with, I search it on Google, so if there are any discussions later, I already have something to picture in my mind"* (Student M).

Students also tailored resource use to content type, as reflected in the statement, *"If the new lesson materials are related to speaking and listening, I search about it on YouTube. If it is about grammar, I do a reading of the online grammar book in the form of PDF"* (Student H). These behaviors suggest that students anticipated learning demands and engaged proactively rather than passively awaiting instruction.

This proactive orientation continued during in-class activities, where students reported actively engaging with lesson materials through discussion, note-taking, and strategic information searching. One student described recording and reviewing explanations: *"I record my lecturer's explanation on my phone… then I tidy up my notes while listening to the recording"* (Student D). Others emphasized peer discussion and selective information searching, such as *"In offline class, I mostly discuss with my friends"* (Student M) and *"Since the new lesson materials will be explained briefly, I already know what things I should search about on the internet"* (Student H). These responses reinforce that students valued learning as an active, preparatory process.

The second finding concerns students' persistence and strategic responses when encountering difficulty, particularly in completing assignments. Students expressed enjoyment in engaging with challenging tasks and emphasized careful comprehension over speed. For instance, one student noted,

"I will try to understand the question carefully and work on the assignment as good as possible" (Student D), while another explained, *"I usually work on NovoLearning once a day and I try to understand the questions carefully"* (Student M). Student F similarly emphasized deliberate reading of instructions before responding. Students also demonstrated persistence by reattempting assignments when allowed, viewing mistakes as part of the learning process. As Student D explained, *"I do my NovoLearning as well as possible first, then if I make mistakes, I will re-do it."* Another student added, *"I do a review of the assignment before working on it for the second time"* (Student M), while Student A described seeking additional resources before reattempting tasks. These behaviors indicate sustained cognitive effort and a learning-oriented approach to challenge.

The third finding reflects a mastery-oriented approach to task completion, particularly during post-class activities. When encountering difficult questions, students strategically postponed them and returned after gathering additional information from peers, instructors, or online sources. One student stated, *"I will skip the difficult questions first and come back after asking my friends or searching on the internet"* (Student D). Others described similar strategies, such as *"I will ask my friends first… then I will ask my lecturer"* (Student M) and *"I will search the lesson materials being discussed in the assignments on the Internet"* (Student H). This approach highlights students' prioritization of comprehension and accuracy over immediate completion.

In conclusion, the findings show that students demonstrated valuing of learning as a central form of cognitive engagement in the EFC. This was indicated by their excitement toward learning, enjoyment of difficult assignments, proactive preparation, and persistence in addressing challenges across learning phases. These findings align with Iswandari (2022), who identifies group interaction, inquiry, and discussion as manifestations of cognitive engagement in EFC contexts, and with Latipah et al. (2020), who emphasize learners' willingness to engage with lesson materials. Moreover, students' tendency to reattempt tasks, seek clarification, and strategically manage difficulty reflects deliberate cognitive investment and persistence, consistent with prior findings on cognitive engagement in flipped learning environments (Ammade et al., 2023; Hulwana, 2022). Notably, indicators related to valuing learning emerged more prominently than other dimensions of cognitive engagement, likely reflecting the participants' novice status and high-achieving profiles, which foreground motivational and effort-based engagement before more advanced metacognitive regulation becomes fully articulated.

Demonstrating self-efficacy

In English I, students demonstrated cognitive engagement in the EFC by demonstrating self-efficacy, reflected in their confidence in their ability to understand new materials and complete tasks during pre-class, in-class, and post-class learning. Rather than withdrawing when faced with challenging content, students consistently believed that understanding could be achieved through effort and the use of appropriate strategies.

During the pre-class phase (Simari), students reported that when they struggled to understand lesson materials, they actively sought ways to overcome these difficulties. Common strategies included discussing lesson materials with peers, independently searching for explanations through online resources such as YouTube or e-books, and consulting the lecturer when necessary. As one student explained, *"For me personally, I do searching on the internet a lot, especially on YouTube, then, I also like doing discussions with my friends"* (Student A). Similarly, Student D stated,

> *"I often discuss with my friends, then I will search the lesson material on the internet. I also search additional lesson materials through YouTube, E-books, or other learning sources until I understand the lesson materials."*

Other students emphasized collaborative and independent approaches, such as *"I search the lesson materials online or ask my friends to explain the lesson materials again through WhatsApp chat because I like to study through discussions"* (Student M) and *"I search the lesson materials by myself on the Internet so I can have a better comprehension of it"* (Student H). These responses indicate that students perceived difficulty as a challenge to be addressed rather than a barrier to learning.

This confidence persisted during the in-class phase (face-to-face discussions). Students continued to demonstrate self-efficacy by asking questions, engaging in peer discussions, searching additional resources, or re-reading lesson materials on Simari when clarification was needed. One student described a strategic approach to instructor consultation:

> *"If possible, I ask my lecturer, if not, I ask my friends. However, since English I has a lot of students, I will wait the class to end first and then go to the lecturer at the end of the class to ask a question rather than interrupting when the class is occurring"* (Student A).

Others relied more on peer interaction, as reflected in statements such as *"Mostly, I ask the lecturer directly or my friends, like doing a discussion"* (Student D) and *"In offline class, I discuss with my friends who might understand the lesson material better"* (Student F). Students also described revisiting learning materials independently, noting that *"…for offline class, usually our lecturer would give us the lesson materials on Simari first, so if I still have any lesson materials that I do not understand, I can read about it again on Simari"* (Student H). These practices illustrate strategic help-seeking, functioning as an expression of self-efficacy rather than dependency.

Self-efficacy was also evident during the post-class phase, particularly in students' confidence to complete challenging assignments. When facing difficulty, students expressed determination to finish tasks through sustained effort while remaining open to peer support when necessary. One student stated, *"I will try to work on the assignment by myself until I finish it"* (Student D), while another explained, *"I will still try to work on it slowly, and sometimes I will ask my friends"* (Student M). Other students similarly described an independent-first approach, such as *"Usually I do the assignments by myself first or search about it on the internet"* (Student H) and *"If there is any difficulty when doing the assignment, I will definitely ask my friends… then work on the assignment by myself"* (Student A). These responses demonstrate students' belief in their ability to complete tasks through persistence and adaptive strategy use.

Based on these findings, it can be concluded that students engaged cognitively in the EFC by demonstrating self-efficacy, namely confidence in their ability to learn something new and finish tasks across pre-class, in-class, and post-class phases. This was evident in students' sustained efforts to understand difficult lesson materials, their strategic use of peer and instructor support, and their persistence in completing assignments. These findings are consistent with Ammade et al. (2023), who identify curiosity and active confirmation-seeking as indicators of cognitive engagement in EFC contexts, and with Iswandari (2022), who highlights group interaction, inquiry, discussion, and explanation as key manifestations of cognitive engagement in flipped learning environments.

Setting personal mastery goals and attributing success to effort

Another important sub-indicator of students' cognitive engagement in the EFC is setting personal mastery goals and attributing success to effort. The findings reveal that students consistently viewed learning activities and assignments as opportunities to improve their English skills and demonstrated a willingness to take academic risks across pre-class, in-class, and post-class learning phases.

A dominant finding concerns with students' perception of assignments and learning activities as meaningful resources for improving English proficiency, rather than merely fulfilling course requirements. During the pre-class phase, students described NovoLearning as a central learning resource that supported their development of grammar, vocabulary, writing, speaking, and overall understanding of English. As one student noted, *"Through NovoLearning for the first semester, I was really helped as it helps me improve my grammar skill and answering assignments such as writing test and speaking test"* (Student D). Another student emphasized its foundational role, explaining, *"NovoLearning can be used as basic… it helps me in giving myself more detailed explanation about English materials that can help me in improving my English skill"* (Student H). Students also highlighted how exposure to unfamiliar materials fostered curiosity and renewed interest in learning English. For instance, Student A stated, *"NovoLearning has so many new English materials which I*

am not familiar with. Eventually, with NovoLearning, it makes me learn and feel curious to find more about the materials." Similarly, Student M noted that the challenging nature of assignments motivated effortful engagement: *"The assignments in NovoLearning are challenging to me, so I feel challenged to work on it to obtain a full score."* Student F further described how assignments and NovoLearning helped restore interest in learning English after prior difficulties: *"Both help me in regaining my interest in learning English."* These responses indicate that students set mastery-oriented goals focused on improvement rather than mere task completion.

The second finding reflects students' belief that interaction and discussion enhance mastery of English skills. During in-class learning, students reported that discussions enabled them to acquire new vocabulary, grammar knowledge, and conceptual understanding through repetition and exchange of ideas. As Student M explained,

> *"Through discussion I obtain new vocabularies and English terms,"* while Student H stated, *"It helps me in terms of my grammar, since during discussion there are friends that understand it better so I can ask them."* Others emphasized the role of repetition and explanation, such as *"Discussions help me to repeat the lesson materials so I can memorize it"* (Student D) and *"If I explain the lesson materials to my friends, I would know if I have any mistakes regarding my own understanding"* (Student A).

These interactions supported students' mastery goals by reinforcing understanding and identifying areas for improvement.

The third finding highlights students' use of post-class assignments as tools for reflection and self-improvement. Students reported utilizing assignments to identify gaps in knowledge, reinforce lesson materials, and reassess understanding. For example, Student D stated, *"I will utilize the materials and assignments given by the lecturer as my source of learning,"* while Student M described noting new forms encountered in tasks: *"If there are new tenses or new vocabularies, I will take a note of it as my own source of learning."* Others emphasized memorization and comprehension checking, such as *"Assignments help me to memorize better… and re-check my own understanding"* (Student A) and *"Assignments help me in repeating the lesson materials so I can have better comprehension"* (Student H). These practices reflect attribution of success to sustained effort and strategic use of learning opportunities.

Another finding concerns students' willingness to take academic risks, which further illustrates mastery-oriented engagement. During pre-class learning, students reported taking risks by asking questions and responding to lecturers during online sessions. As Student D stated, *"I am willing to take risks during online class, like answering the questions from my lecturer,"* while Student A added, *"Sometimes, I willingly take academic risks, like answering lecturer's questions during online classes."* This willingness continued during in-class activities. Students described asking questions during discussions and volunteering to respond when prompted. For instance, Student M noted, *"If I still have not understand any lesson materials… I will ask my lecturer during Q and A session,"* while Student A explained, *"When my lecturer asks someone to answer any question, I volunteer myself to do it."* Even during post-class activities, students reported readiness to take risks, such as volunteering to answer questions in front of the class. As Student D stated, *"When my lecturer asks us to go to the front of the class to answer a question, I would volunteer to do it."*

In short, the findings indicate that students engaged cognitively in the EFC by setting personal mastery goals and attributing success to effort. This engagement was manifested in students' perception of assignments as learning opportunities, their use of interaction and discussion to deepen understanding, their reflective use of tasks to identify learning gaps, and their willingness to take academic risks across learning phases. These findings align with Jamaludin and Osman (2014), who highlight cognitive engagement through connecting ideas and experiences in flipped learning, and with Latipah et al. (2020), who emphasize willingness to engage with learning materials as a key indicator of cognitive engagement in EFC contexts.

Investing time, attention, and effort in learning

Investing time, attention, and effort emerged as a key indicator of students' cognitive engagement in the EFC in English I. The findings show that students deliberately regulated their focus, prioritized learning over other activities, and extended effort beyond task requirements across pre-class, in-class, and post-class learning. A prominent thematic pattern concerns students' sustained time-on-task, achieved by actively regulating focus and minimizing distractions. During pre-class learning via Simari and online sessions, students described using various strategies to maintain concentration while working on assignments or listening to lectures. As Student D explained, *"I turn on the focus mode on my phone… so I won't get distracted,"* highlighting intentional control over digital interruptions. Others described bodily or environmental strategies to support concentration, such as *"I make some random doodles… so I can focus"* (Student M) and *"I do my assignments while listening to music so I can focus"* (Student H). Student A described removing connectivity altogether: *"I turn off my data so I can maintain my concentration."* This sustained focus extended into post-class learning, where students reported maintaining concentration until tasks were completed or meaningful progress was achieved. Student M noted, *"I work on the assignment until I finish it… if there are any distractions, I will remove said distractions,"* while Student H described a self-imposed rule to sustain effort: *"If I don't finish my assignment, I won't be going home."* Student D similarly emphasized boundary-setting: *"I will try to tell my friends to not distract me."* These accounts indicate purposeful allocation of time and deliberate persistence during learning activities.

A second thematic pattern reflects students' investment of attention by prioritizing learning tasks over other activities, including leisure pursuits. Students reported postponing or abandoning non-urgent activities to ensure assignments were completed or discussions were fully engaged in. As Student M explained, *"I work on my assignment first, then I will work on other things so I can have a calm mind,"* even when deadlines were distant. Student D similarly stated, *"I will make my assignment as my priority… If the other activity is not urgent, I will work on my assignment despite the deadline is still far away."* Students also demonstrated selective attention during in-class discussions, distinguishing between relevant and irrelevant interruptions. Student H explained, *"If I receive an important chat on WhatsApp, I let myself get distracted briefly… if I receive unimportant chat, I ignore it."* These responses suggest intentional control of attention, allowing students to remain cognitively engaged with learning tasks despite competing demands.

A third thematic pattern highlights students' investment of effort beyond what was required by instructional tasks. Students reported deliberately exceeding assignment instructions to deepen understanding and prepare for future learning. For instance, Student M stated,

> *"If the lecturer gives 5 tenses… I will search about another tenses… If I am asked to make two sentences, then I will make five sentences,"* keeping additional work as a personal learning resource. Similarly, Student A explained, *"If I am instructed to find three examples… I find five examples, the remaining examples are for when in case I make any mistakes."*

These practices demonstrate proactive effort and persistence aimed at mastery rather than mere task completion.

The findings indicate that students engaged cognitively in the EFC by investing substantial time, attention, and effort in their learning. This engagement was manifested through sustained focus and time-on-task, prioritization of learning over competing activities, and extending effort beyond task requirements across learning phases. These behaviors align with Ammade et al. (2023), who identify attention, time-on-task, effort, and persistence as core indicators of cognitive engagement in EFC contexts. Through deliberate focus regulation, task prioritization, and proactive effort, students demonstrated meaningful cognitive investment in their English learning within the flipped classroom environment.

Use of cognitive, metacognitive strategies to self-regulate one's learning

Planning

Planning emerged as an important indicator of students' cognitive engagement in English I, reflecting learners' ability to anticipate learning demands, set goals, and organize tasks strategically across pre-class, in-class, and post-class phases. The interview data indicate that students actively planned both their lesson preparation and assignment completion, demonstrating intentional regulation of their learning processes in the EFC. One prominent thematic pattern concerns students' planning for lesson preparation, particularly in organizing learning materials and note-taking prior to and during class. Students reported preparing lesson materials in advance, identifying which topics required focus, and arranging notes to support classroom engagement. As one student explained, *"When I have to attend a class, the night before I at least have already prepared the lesson material that are needed to be learnt later and I have already prepared the notes that will be discussed in the class later"* (Student D). Another student similarly noted, *"For planning, I do have it. For example, on a class' learning, I have to make sure which lesson materials I need to study on"* (Student F). Other students described systematic routines to support planning, including organizing their study space and aligning preparation with instructional expectations. Student M explained, *"I follow the schedule, tidy up my desk, and if I have already told about what materials that we need to learn, I will prepare those lesson materials by making notes. If there are any more explanations from the lecturer, then I will take notes again."* These practices indicate that students set learning goals and structured their preparation to support comprehension and participation during class.

A second thematic pattern relates to students' planning for assignments, particularly through breaking tasks into manageable components and prioritizing workload. Students reported beginning with easier tasks before progressing to more complex ones, reflecting strategic task management. As Student M stated, *"I will work on the easiest assignments first, then when I have finished it, I will check my answers before submitting it."* This approach suggests deliberate sequencing to reduce cognitive overload and maintain focus. Students also described planning assignments by visualizing task requirements, allocating time, and preparing necessary resources in advance. For instance, Student D explained, *"If I am given a video assignment, I plan how will I make the video, for example, I will make a sound record for the assignment."* Similarly, Student H noted, *"I plan my time in working on my assignments. Which assignment I should prioritize more."* Student A further described preparatory strategies: *"Usually, I check how the assignment is, after that I search the sources for the answers and keep it for the time when I start working on the assignment."* These accounts demonstrate intentional planning through goal setting, time management, and resource preparation.

The findings indicate that students engaged cognitively in English I by demonstrating planning as a metacognitive strategy, evidenced by their ability to set learning goals, prepare lesson materials, and organize assignments into manageable steps across learning phases. Planning was manifested in students' anticipation of learning requirements, strategic sequencing of tasks, and thoughtful allocation of time and resources. These findings align with Latipah et al. (2020), who highlight students' willingness to engage with learning materials as an indicator of cognitive engagement in EFC contexts, and with Ammade et al. (2023), who identify sustained effort and strategic task management as key manifestations of cognitive engagement. Through these planning behaviors, students demonstrated active regulation of their learning, reinforcing planning as a significant component of cognitive engagement in the EFC.

Using specific study skills or learning strategies

The use of specific study skills or learning strategies emerged as another important indicator of students' cognitive engagement in the EFC in English I. The findings reveal that students actively employed learning strategies to enhance comprehension and retention, particularly by processing lesson materials through their own words rather than relying on literal note-taking. A dominant thematic pattern concerns students' practice of taking notes using their own words to facilitate understanding and memory. Students reported transforming lesson materials into key points, examples,

and summaries that reflected their personal interpretation of the content. As one student explained, *"I make keynotes and examples of the lesson materials. I take notes with my own words so I can understand the lesson materials better. I also turn my notes into summary"* (Student M). Another student emphasized extensive note-taking and post-class refinement, stating, *"I record the Zoom meeting or the Google meeting of the class. I take notes as much as possible during the class, then when the class ends, I will make tidier notes. I take notes with my own words and turn it into a summary"* (Student D). Student F similarly noted, *"I am more using my own words to take notes so I can understand the lesson material easier."* These practices indicate active cognitive processing, as students reorganized information to align with their own understanding.

Second, it is reflected that the students' use of note transformation strategies, such as converting notes into summaries, bullet points, or mind maps. Rather than keeping notes in raw form, students reshaped information into structured formats that supported retention and recall. One student described this process by stating, *"I try to take notes of everything that I have understood with my own words. I turn that note into a bullet-points summary instead of paragraphs summary"* (Student A). Similarly, Student M explained, *"Using my own words, but I make into more like a resume,"* while Student H noted, *"I take notes using my own words and then turn it into a mind-map."* These strategies demonstrate intentional organization of information to support meaningful learning.

Students also reported using supplementary techniques to support comprehension, such as recording online classes and annotating difficult concepts. Student D described adapting notes to address theoretical difficulty: *"Since the lecturer's explanation mostly theoretical, I make a small box in my notes that consists of synonyms of the theoretical terms I struggle to understand."* This strategy illustrates students' efforts to bridge conceptual gaps and personalize learning materials, further reinforcing active engagement with content.

In summary, the findings indicate that students engaged cognitively in the EFC by employing specific study skills and learning strategies, particularly through note-taking in their own words and transforming information into structured formats such as summaries and mind maps. These practices were evident during both pre-class and in-class learning and supported easier comprehension and retention of lesson materials. Such strategic processing aligns with Ammade et al. (2023), who report that students demonstrate cognitive engagement in EFC environments through the use of cognitive and metacognitive strategies, including summarizing materials, visualizing information, and repeatedly practicing lesson content. Through these learning strategies, students actively constructed understanding rather than passively receiving information, underscoring the role of study skills as a key dimension of cognitive engagement in the EFC.

Monitoring progress and adjusting strategies

Monitoring progress and adjusting strategies emerged as another important indicator of students' cognitive engagement in the EFC in English I. The findings reveal that students actively checked their understanding, evaluated the accuracy of their work, and modified learning strategies when necessary across pre-class, in-class, and post-class learning phases. A prominent thematic pattern concerns students' self-monitoring of comprehension by engaging in exercises, quizzes, and peer interaction. To evaluate their understanding of lesson materials during pre-class and in-class learning, students reported searching for online quizzes, completing exercises, and discussing concepts with peers and lecturers. As one student explained, *"If there is a quiz about a lesson material, I will try to search for online quizzes on Quizziz… from there I can see how far my own skill is"* (Student D). The same student further emphasized confirmation through peer comparison:

> *"I do confirmation about the lesson materials to my friends… if my friends have the same comprehension as myself, then that means I have understood the lesson materials." Other students described similar strategies. Student H noted, "I usually compare my mind-map with my lecturer's PowerPoint slides. If I have the time, I will do some exercises to test how much I understand about lesson material," while Student M explained, "Me and my friends also give each other a quiz about the lesson materials." These practices indicate that students actively*

monitored their learning progress rather than assuming comprehension, reflecting deliberate regulation of learning.

A second thematic pattern reflects students' adjustment of strategies based on feedback, particularly through comparison with peers' understanding and responses. During post-class activities, students reported checking the accuracy of their assignment answers by matching them with friends' work and reviewing discrepancies. As Student D stated, *"I match my answers of my assignments with my friends… if their reason makes more sense from mine, I might change my answer to be the same as theirs."* Student M described a similar but selective approach: *"If I am feeling alright with my own answers, I will not change my answer… then later, if we already know which answer is correct, I will do a review with my friends."* These responses illustrate flexible strategy use, where students weighed feedback critically rather than adopting it unreflectively. Students also employed individual checking strategies to ensure task accuracy. Student H explained, *"I do skimming. I also make sure if my answers match to the assignments' instructions."* This practice highlights students' attention to task requirements and self-evaluation before submission.

Across learning phases, students demonstrated a consistent tendency to ensure comprehension before progressing to subsequent materials or tasks. They monitored understanding by attempting quizzes, explaining content to peers, and revisiting materials when necessary. This indicates that learning progression was contingent upon perceived understanding rather than task completion alone. Such behavior reflects active cognitive engagement, as students regulated their learning pace and strategy use based on ongoing evaluation of their performance. The findings indicate that students engaged cognitively in the EFC by monitoring their learning progress and adjusting strategies accordingly. This was manifested in students' use of self-testing, peer discussion, comparison of answers, and careful review of assignments across instructional phases. These behaviors align with Iswandari (2022), who identifies group interaction, inquiry, and explanation as indicators of cognitive engagement in EFC contexts, and with Hulwana (2022), who highlights recognizing errors and thinking carefully during quizzes as manifestations of cognitive engagement. Through continuous monitoring and strategic adjustment, students demonstrated active regulation of learning, reinforcing monitoring as a key component of cognitive engagement in the EFC.

Self-evaluating and reflecting

Self-evaluating and reflecting emerged as the final sub-indicator of cognitive engagement demonstrated by students in English I. According to Pohl (2020), this sub-indicator involves learners comparing their current performance with prior performance or pre-assessment results to evaluate development and improvement. The findings indicate that students engaged cognitively in the EFC by continuously evaluating their understanding, identifying learning gaps, and reflecting on their progress across pre-class, in-class, and post-class learning. A central thematic pattern concerns students' use of reflection to identify areas of weakness in their learning. Students reported making notes on lesson materials they had not fully understood, allowing them to revisit and address these gaps later. One student explained, *"When lesson materials are being taught in a class, then there are materials I do not understand, I will take a note about it… and I will know in which part I am lacking"* (Student D). Similarly, Student M stated, *"I also take notes on which lesson materials I have not understood."* These practices indicate reflective awareness of learning limitations, which supports targeted improvement rather than surface completion of tasks.

Another prominent thematic pattern reflects students' use of explanation as a self-evaluation strategy. Students assessed their understanding by attempting to explain lesson materials to themselves or their classmates, using successful explanation as evidence of comprehension. As Student D noted, *"If I can explain the lesson materials to my friends, that means I have made improvement in my learning."* Student A similarly stated, *"If I can explain the lesson materials to myself or my friends, then it means I have understood the lesson materials."* These findings align with Iswandari (2022),

who identifies explaining and informing others as key indicators of cognitive engagement in EFC contexts.

A third thematic pattern highlights students' comparison of current learning outcomes with previous performance as a means of evaluating progress. During post-class activities, students reflected on improvement by comparing assignment scores, identifying incorrect responses, and analyzing changes over time. For example, Student H stated, *"I compare the answers from my assignments, and I memorize in which lesson materials I lack."* Student F described a broader reflective process: *"I compare my learning outcomes from the previous one with my learning outcomes now… if my previous learning outcomes are better, then… I will try to find in which part I am lacking."* Students also demonstrated detailed evaluative practices by tracking errors and learning improvement. Student M explained, *"I compare my scores and I also check how many correct and incorrect answers I have… if I answer it incorrectly, I will know from there that I have not made any learning improvement… I take notes of the correct answers."* Student A similarly noted, *"I compare my scores from assignments."* These practices reflect deliberate comparison and reflection, which are central to self-evaluation and learning regulation.

The findings indicate that students demonstrated cognitive engagement in the EFC by self-evaluating and reflecting on their learning. This engagement was manifested through identifying learning gaps, testing comprehension by explaining content to peers, and comparing current learning outcomes with previous performance to monitor development. Such behaviors align with Pohl's (2020) conceptualization of self-evaluation and reflection and are consistent with prior EFC research highlighting recognizing errors and reflective comparison as indicators of cognitive engagement (Hulwana, 2022; Iswandari, 2022). Through these reflective practices, students actively regulated their learning processes, reinforcing self-evaluation and reflection as integral components of cognitive engagement in the EFC.

CONCLUSION

This study demonstrates that the English Flipped Classroom (EFC) can facilitate meaningful cognitive engagement among novice EFL learners, particularly when examined through Pohl's (2020) multidimensional framework. The findings reveal that cognitive engagement is not uniformly distributed across dimensions. Instead, motivational and effort-related aspects—such as valuing learning, self-efficacy, and sustained investment of time and attention—emerged as the most dominant forms of engagement. These dimensions were consistently evident across pre-class, in-class, and post-class learning phases, suggesting that the EFC structure supports learners' initial transition toward more active and autonomous learning practices.

However, metacognitive dimensions, including planning, monitoring, and self-evaluation, while present, appeared less consistently developed and more dependent on individual strategic awareness. This imbalance indicates that cognitive engagement in EFC contexts is developmental rather than immediate, particularly for first-semester students who are still adapting to independent and technology-mediated learning environments. Therefore, the effectiveness of EFC should not be assumed as inherent to its design, but rather as contingent upon learners' readiness and the availability of pedagogical support. These findings highlight the need for explicit instructional scaffolding within EFC implementation. Practices such as strategy modeling, guided reflection, and structured support for self-regulated learning are essential to foster deeper and more balanced cognitive engagement. While the study provides in-depth insights into high-achieving learners, future research should include more diverse learner profiles to better capture variability in engagement and strengthen the generalizability of findings.

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