ISSN: 2288-7709
JEMM website: https://accesson.kr/jemm
doi: http://dx.doi.org/10.20482/jemm.2025.13.3.1

Designing English Learning Content for Flipped Classrooms: Strategic Approaches through Case-Based Digital Modules

Myeong-Hee SHIN[1]

Received: April 29, 2025. Revised: May 24, 2025. Accepted: June 15, 2025.

Abstract

Purpose: This study investigates the instructional design and implementation of digital learning modules in a university-level flipped English course, with a focus on how video lectures, LMS-based materials, and formative quizzes are structured to enhance learner engagement, comprehension, and autonomy. **Research design, data and methodology:** Employing a mixed-methods case study design, data were collected over a 15-week semester from 70 Korean EFL learners through learner surveys, formative quiz performance, classroom observations, and post-course interviews. The flipped instruction was organized into a three-phase sequence—Pre-class, In-class, and Post-class—each embedded with targeted digital components. **Results:** Survey results indicated high learner satisfaction with the clarity and pacing of video content (M = 4.32, SD = 0.48), as well as the usefulness of LMS-based materials and embedded formative quizzes. Qualitative feedback underscored themes such as learner flexibility, structured routines, and relevance of content. From these findings, five pedagogical design principles emerged: modular flexibility, phase-aligned scaffolding, formative self-regulation, structured autonomy, and authentic engagement. **Conclusions:** These results suggest that flipped learning in EFL settings is most effective when the digital materials are purposefully designed to support learner-centered outcomes. This study offers a theoretically informed and empirically grounded content design framework that can guide educators in optimizing flipped English instruction.

Keywords : Flipped learning, Digital content design, Learner engagement, Autonomy, EFL

JEL Classification Code: I21; I23

1. Introduction

In recent years, the widespread adoption of digital technologies in higher education has significantly transformed the landscape of instructional delivery. Among the pedagogical innovations emerging from this digital shift, Flipped Learning (FL) has drawn considerable attention for its learner-centered structure and integration of multimedia content (Bergmann & Sams, 2012). By moving foundational content outside the classroom and reallocating in-class time to higher-order tasks such as problem-solving, discussion, and peer interaction, FL offers an alternative to the traditional lecture-based format and more closely aligns with constructivist learning principles. While previous research has widely demonstrated the effectiveness of FL in improving learner outcomes—especially in terms of academic achievement, learner autonomy, and engagement (Shin & Kang, 2019)—a growing body of literature suggests that its success hinges not merely on the shift in instructional sequence, but critically on the quality and strategic design of digital learning content. In this context, video lectures,

1 First Author. Associate Professor, General English, Hannam University, Republic of Korea. Email: scindy@hnu.kr

learning management system (LMS)-based modules, and embedded quizzes serve not only as knowledge transmission tools but also as scaffolds for cognitive engagement and reflective learning. Despite this recognition, there remains a lack of systematic research on the specific design principles, integration strategies, and learner experiences related to such digital components, particularly within the domain of English language education. Without clear design guidelines, flipped classrooms risk becoming fragmented or ineffective, undermining learner engagement and autonomy.

This study seeks to address this critical gap by examining the instructional design and implementation of digital modules in a university-level English course structured around the FL model. In particular, it analyzes how video content, LMS-integrated materials, and formative quizzes are organized and function within the learning sequence to support learner comprehension, autonomy, and interaction. The investigation is rooted in both the practical teaching experience of the author and the observed patterns of student engagement and feedback within a real classroom setting.

Moreover, this research contributes to the discourse by proposing a strategic framework for the design of digital English learning content, one that is grounded in instructional theory, informed by learner-centered principles, and applicable across diverse institutional contexts. While many studies on FL focus on general outcomes such as student satisfaction or test scores, this paper narrows its lens to the granular level of content design decisions: What makes a flipped video module effective? How should quizzes be timed and structured to reinforce learning? In what ways can LMS-based materials be optimized to promote interaction beyond class time?

Importantly, the study is positioned within the broader imperative of curriculum innovation in higher education, especially in light of the COVID-19 pandemic, which exposed the urgent need for resilient, technology-enhanced, and student-responsive learning environments. As such, the findings of this research are expected to inform not only educators seeking to adopt or refine flipped models, but also educational designers, curriculum developers, and policy makers aiming to advance digital pedagogy.

This paper begins by reviewing the theoretical foundations of flipped learning (FL) and digital content design in the context of second language education. It then outlines the research methodology used to examine instructional artifacts, learner feedback, and quiz performance in a university-level English course. The results section provides insights into how video lectures, LMS-based materials, and formative quizzes contributed to learner engagement, comprehension, and autonomy. Finally, the paper discusses key instructional design strategies and offers evidence-based guidelines for educators aiming to enhance flipped English instruction through effective content integration. To guide this investigation, the following research questions are posed:

1. How are video lectures, LMS-based materials, and formative quizzes designed and organized within a university-level English course using the Flipped Learning model?
2. In what ways do these digital learning modules support learner comprehension, engagement, and autonomy throughout the course?
3. What instructional design principles can be derived from the observed learning outcomes and student feedback to inform future flipped English content development?

2. Literature Review

2.1. Flipped Learning in Language Education

Flipped Learning (FL) has emerged as a transformative pedagogical approach in higher education, offering an alternative to traditional lecture-based instruction by shifting the content delivery phase outside the classroom and repurposing in-class time for interaction, application, and feedback. In the context of English language education, this approach has shown particular promise. According to Hsieh, Wu, and Marek (2016), FL contributes to improved speaking fluency and self-regulated learning among EFL learners by providing more time for communicative tasks and peer collaboration during class sessions.

Further supporting this claim, a meta-synthesis conducted by Zainuddin and Halili (2016) concluded that FL increases student motivation and learning satisfaction across various educational contexts, including language education. They particularly emphasized the importance of pre-class preparation, noting that learners felt more confident and less anxious during in-class activities when they had prior exposure to the lesson content. These findings align with constructivist learning theory, which advocates for learner autonomy and active engagement.

Recent large-scale meta-analyses by Lo and Hew (2017) and Tseng and Yeh (2019) further support these claims, finding consistent gains in language proficiency, learner motivation, and in-class participation in flipped EFL courses. However, as several scholars note, including O'Flaherty and Phillips (2015), the structural shift of FL alone is insufficient;

its ultimate success hinges on the quality of the digital content delivered outside the classroom. Aksoy and Takkac (2023) also point out that flipped instruction may fail to improve learning if poorly aligned with learner needs or technology readiness.

2.2. Digital Content Design Principles

Multimedia instructional design plays a vital role in the success of FL. Mayer (2001) proposed the Cognitive Theory of Multimedia Learning, which outlines twelve design principles—including coherence, signaling, redundancy, and modality—that enhance learners' processing of multimedia content. When applied to FL contexts, these principles suggest that video lectures should be concise, well-structured, and supported by visual cues and narration. Research by Fiorella and Mayer (2015) and Moreno and Mayer (2007) further emphasized that segmenting information into manageable chunks and encouraging learner-generated explanations can significantly improve knowledge retention and transfer. This segmentation becomes particularly critical when addressing the cognitive demands placed on EFL learners.

In practical terms, EFL instructors implementing FL must ensure that pre-class video content not only delivers language input but also scaffolds comprehension. As noted by Paas, Renkl, and Sweller (2003), cognitive load increases when learners are exposed to both novel language and poorly designed multimedia. Sweller, Ayres, and Kalyuga (2011) stress that minimizing extraneous load through streamlined presentation and segmenting is especially important in EFL learning, where dual challenges of new content and unfamiliar language converge. Thus, attention to multimedia learning principles becomes especially critical in EFL settings.

Moreover, Learning Management Systems (LMS) serve as central platforms in FL environments, hosting not only videos but also readings, quizzes, vocabulary activities, and discussion prompts. Al-Harbi and Alshumaimeri (2016) found that well-structured LMS modules enhanced Saudi EFL learners' academic performance and motivation by providing consistent access to resources and timely feedback. Meanwhile, Martin and Bolliger (2018) highlight that digital modules designed with interactive and clear layouts improve engagement and persistence.

Formative assessments, particularly low-stakes quizzes embedded before and after lessons, are also essential for supporting metacognitive reflection and retrieval practice. Roediger and Butler (2011) argued that such quizzes not only promote learning retention but also reinforce engagement when learners perceive them as constructive rather than punitive. Hung (2015) found that embedded formative checks in flipped English courses enhanced student accountability and readiness.

2.3. Research Gaps and Rationale for the Present Study

While the effectiveness of FL in improving academic outcomes has been widely studied, there is still a lack of research focusing on the specific instructional design of the digital modules themselves—particularly how video lectures, LMS-based materials, and formative quizzes work in tandem to support language learning. This gap is significant, as effective digital module design directly influences the extent to which learners engage meaningfully with pre-class materials. Most studies tend to isolate one component or emphasize broad learning outcomes rather than examining the content-level design strategies that drive engagement and understanding.

Furthermore, few studies integrate learner feedback, cognitive load considerations, and multimedia learning theory into a cohesive evaluation framework. Zimmerman (2002) and Lai (2015) argue that self-regulated learning and digital content engagement are most successful when paired with structured, feedback-rich environments. Öztürk and Çakıroğlu (2021) found that flipped EFL courses incorporating explicit self-regulation scaffolds significantly outperformed traditional formats across multiple language domains.

This study addresses these gaps by conducting a case analysis of a flipped English course at a South Korean university. By analyzing the instructional artifacts, learner feedback, and classroom observations, the study aims to develop a strategic framework for designing digital English learning content in flipped environments. In doing so, it seeks to contribute practical insights for educators and content designers navigating the evolving landscape of technology-enhanced language education.

While this study focuses on the flipped learning model, it is also important to acknowledge the potential of alternative digital pedagogies, such as blended learning, synchronous online instruction, and game-based learning, as complementary approaches to EFL instruction. Incorporating comparative analyses of these approaches in future studies may deepen theoretical insights into effective digital content design for language education.

3. Research Methods and Materials

3.1. Research Design

This study adopts a mixed-methods case study design to investigate the instructional design, implementation, and learner response to digital content used in a flipped English

course at the university level. By combining quantitative and qualitative approaches, the design enables a comprehensive understanding of both measurable outcomes and lived student experiences. This design was chosen to allow for a comprehensive examination of both quantitative survey data (e.g., Likert-scale evaluations, t-test comparisons) and qualitative insights (e.g., open-ended responses, focus group interviews, and instructor observations).

The case study approach enabled a contextualized analysis of how digital modules—including video lectures, LMS-based learning materials, and formative quizzes—were integrated into a 15-week course and experienced by learners in real instructional settings. Furthermore, the mixed-methods structure allowed for triangulation of multiple data sources, enhancing both the depth and the trustworthiness of the findings (Creswell & Plano Clark, 2011).

The primary objective was to analyze how the structure and sequencing of these digital components supported learner engagement, comprehension, and self-directed learning, and to identify instructional design principles that may inform future content development in flipped English education. Such a design is particularly appropriate for capturing the complexities of technology-mediated language learning.

3.2. Research Context and Participants

The research was conducted over a 15-week semester from March to June 2024 at H University, a mid-sized private institution located in South Korea. Participants were drawn from two sections of a General English Course offered as part of the university's elective general education curriculum. A total of 70 undergraduate students participated in the study, distributed across two course sections. Both groups were instructed by the same teacher, using identical digital content and lesson plans, thereby controlling for instructor effects.

All participants were classified as intermediate-level English as a Foreign Language (EFL) learners, based on the university's placement testing and course prerequisites. The course was conducted entirely in English and focused on improving learners' academic communication, vocabulary development, and interactive language use. A Flipped Learning approach was adopted throughout the course, requiring students to engage with digital modules—including video lectures, LMS-based materials, and formative quizzes—prior to in-person sessions. These face-to-face classes were then used for task-based activities, group discussion, and language application exercises.

Participation in the study was entirely voluntary. Students were informed of the research purpose and process during the first week of the course. It was made clear that their participation—or decision not to participate—would have no impact on their grades or standing in the course. All participants provided written consent prior to data collection, in alignment with ethical practices for classroom-based educational research. The instructional model was structured in three sequential phases in line with the flipped learning framework. In the Pre-class phase, students engaged with instructor-created video lectures to acquire key concepts before class. The In-class phase emphasized collaborative learning through group discussion and presentations. The Post-class phase provided opportunities for learners to reflect on what they had learned and how they might apply it in practical contexts. Feedback was encouraged both between students and with the instructor. This structure is summarized in Figure 1.

Figure 1: Instructional Sequence of the Flipped Course

Pre-class	In-class	Post-class
Self-directed learning using instructor-created video lectures, provided in advance to build foundational understanding for upcoming lessons.	Collaborative activities including small-group discussions and peer presentations to deepen engagement and communication.	Reflection on what was learned and how it can be applied to real-life contexts; exchange of feedback between instructor and students, and among students themselves.

3.3. Instructional Content and Tools

The flipped classroom model was implemented using three core digital content components:

Video Lectures (n = 12): Each week, students accessed 10–15-minute instructor-created videos covering vocabulary, grammar explanations, or discourse strategies. The videos followed Mayer's multimedia learning principles (e.g., segmentation, narration with visuals) and were hosted on a university LMS platform.

LMS-Based Materials (n = 12 sets): Supplementary learning modules included PDF reading passages, comprehension guides, vocabulary lists, and discussion prompts. These were organized in weekly folders and aligned with the corresponding video content. Formative Quizzes (n = 12): Pre- and post-class quizzes were delivered using Google Forms and embedded within the LMS. Each quiz contained 5–10 items focusing on vocabulary, structure, and content comprehension. All instructional content was developed by the course instructor, based on needs analysis from previous semesters.

3.4. Data Collection

To examine both the structure and the effectiveness of the digital modules, the study collected data from the following sources:

Instructional artifacts: Video scripts, LMS module files, and quiz items were collected and analyzed using a content analysis framework based on Mayer's (2001) principles of

multimedia learning and cognitive load theory.

Learner survey: A post-course survey was administered to all 70 students, with 62 complete responses collected (response rate: 88.6%). The survey included Likert-scale items and open-ended questions regarding clarity, usefulness, engagement, and perceived effectiveness of the digital modules.

Focus group interviews: Two 45-minute interviews were conducted with a total of 10 volunteer participants (5 from each class section), focusing on learners' experiences with content flow, self-regulation, and cognitive load.

Instructor field notes: Weekly reflections and classroom observations were documented throughout the semester to track learner behavior and content usability.

3.5. Data Analysis

Instructional materials were coded based on Mayer's (2001) cognitive theory and cognitive load theory frameworks. Survey data were subjected to descriptive analysis, with Cronbach's alpha yielding a high reliability score ($\alpha = 0.87$), indicating strong internal consistency. (Table 1)

Table 1: Reliability Analysis of the Survey Tool

Assessment Item	Cronbach's α	Correlation Coefficient Range
Digital Content Usefulness (Survey)	0.87	-
Open-ended Response Coding (Qualitative)	-	≥ 0.89

Open-ended survey responses and interview transcripts were analyzed thematically, with inter-rater reliability calculated at 0.891, confirming strong coding agreement.

Table 2: Comparison of Learner Perceptions by Group

Variable	Group A (n = 35) M(SD)	Group B (n = 35) M(SD)	t	p
Content Usefulness	4.21 (SD = 0.56)	4.28 (SD = 0.49)	−0.52	0.61
Learner Engagement	4.33 (SD = 0.47)	4.25 (SD = 0.50)	0.61	0.54
Self-regulated Learning	4.10 (SD = 0.51)	4.08 (SD = 0.53)	0.16	0.87

Inferential statistical analysis (independent samples t-tests) indicated no significant differences between Group A and Group B across key variables: content usefulness, learner engagement, and self-regulated learning ($p > 0.05$) (Table 2). This suggests that the instructional materials were experienced consistently across groups.

Finally, quantitative findings were cross-validated against qualitative data sources to reinforce the validity of the interpretations.

4. Results and Discussion

4.1. Module Design and Structure

The flipped learning course was organized around three core digital content components: video lectures, LMS-based supplementary materials, and formative quizzes. Each component was purposefully designed and sequenced in accordance with the three-phase instructional model illustrated in Figure 1. These modules were informed by Mayer's (2001) multimedia learning theory and grounded in instructional scaffolding principles to promote learner autonomy, cognitive clarity, and engagement.

4.1.1. Video Lectures

Video-based content was used from Weeks 3 through 8, across six instructional units. Each video, approximately 10–15 minutes long, was created by the instructor using screencasting tools with embedded visuals. Videos introduced key vocabulary, grammar patterns, and discourse strategies aligned with the week's topic. To reduce cognitive overload and support comprehension, the videos were segmented and designed according to Mayer's principles of modality, redundancy, and coherence. Students were required to view the videos prior to class by the posted LMS deadline. Learners described the videos as "short enough to rewatch," "helpful for understanding," and "a good way to get ready before class." These responses point to the videos' effectiveness in facilitating self-paced, autonomous preparation.

4.1.2. LMS-Based Materials

A total of 12 LMS modules were created and distributed weekly via the university's learning platform. Regardless of whether a video was assigned, the LMS always contained: 1) Reading passages or vocabulary lists, 2) Visual organizers, 3) Comprehension worksheets, 4) Discussion prompts. These materials functioned as scaffolds for Pre-class preparation, In-class engagement, and Post-class review. Student feedback emphasized the materials' clarity, ease of use, and their value for "checking again after class," underscoring their role in maintaining instructional coherence and continuity.

4.1.3. Formative Quizzes

A total of 12 formative quizzes were implemented using Google Forms and integrated into the LMS modules. Each quiz contained 5–10 items, focused on vocabulary, grammar, or reading comprehension. Depending on pedagogical intent, quizzes were used either before class (for preparatory checks) or after class (for consolidation). They also featured immediate feedback, allowing learners to assess and regulate their understanding. Student comments confirmed that the quizzes "kept [them] focused" and "showed [them] what [they] didn't fully get." This reflects their value as diagnostic and metacognitive tools.

The digital components were intentionally aligned with the three-phase structure of flipped learning, each contributing a complementary function: 1) Video lectures offered structured knowledge input for the Pre-class phase, 2) LMS-based materials provided continuous scaffolding before, during, and after class, 3) Formative quizzes operated in both Pre- and Post-class contexts, reinforcing comprehension and reflective learning. This purposeful organization allowed for learner preparation, peer collaboration, and self-regulated reflection, forming a cohesive instructional experience. The design was not incidental, but pedagogically structured to operationalize flipped learning principles and maximize student engagement.

Table 3: Alignment of Digital Components

Components	Flipped Learning Phase	Instructional Role
Video lectures	Pre-class	Deliver core instructional input and foundational knowledge
LMS Materials	Pre-, In-, and Post-class	Provide scaffolding, continuity, and opportunities for review
Formative Quizzes	Pre- and Post-class	Enable comprehension checks, feedback, and metacognitive regulation

Thus, in direct response to RQ1, the results demonstrate that the course's digital components were systematically designed and organized to function within and enhance the flipped learning model for university-level English education.

4.2. Learner Perceptions and Engagement

This section explores how students perceived the instructional design and learning experience of the flipped English course.

Table 4: Summary of Survey Results on Learner Perceptions

Dimension	Survey Items	M	SD
Comprehension	The video content helped me understand key concepts before class.	4.32	0.48
Engagement	This English course was more interactive than other English classes.	4.25	0.50
Autonomy	The course helped me develop independent study habits.	-	-

The analysis focuses on three key learner dimensions: comprehension, engagement, and autonomy, as reflected in both quantitative and qualitative data.

4.2.1. Perceived Comprehension

Learners consistently indicated that the digital modules enhanced their understanding of course content. The statement "The video content helped me understand key concepts before class" received a high level of agreement (M = 4.32, SD = 0.48). Many students appreciated being able to watch videos multiple times, pause, and take notes at their own pace.

Interview data supported this trend. Students stated:

"I understood more in class because I already saw the ideas in the video."

"The quizzes before class helped me realize what I didn't get."

These responses indicate that the Pre-class phase, with its structured video lectures and quizzes, served as an effective scaffolding mechanism for comprehension, preparing students to participate more meaningfully in class.

4.2.2. Perceived Engagement

The flipped learning format appeared to increase learner engagement. The majority of students found the course to be more interactive compared to traditional English classes (M = 4.25, SD = 0.50). Students frequently described in-class tasks as "fun," "different," and "active."

Representative interview quotes included:

"I enjoyed talking with classmates instead of just listening."

"The materials made me think about what I would say before class."

This shift from passive listening to active discussion reflects the power of flipped learning to activate social and cognitive engagement, particularly when the digital preparation phase is well-aligned with in-class collaborative tasks.

4.2.3. Perceived Autonomy

While overall perceptions of autonomy were positive, they varied more than other categories. Many students valued the flexibility of the Pre-class phase, yet some admitted difficulty managing time or staying on track. Still,

82% of survey respondents agreed that the flipped format helped develop independent study habits. Students emphasized how the routine of watching videos and taking quizzes made them more responsible for their own learning.

Interview insights included:

"Knowing a quiz was coming made me actually study the video."

"The routine helped me be more disciplined."

These findings suggest that flipped learning can indeed promote self-regulation, but its success depends on clear deadlines, consistent structures, and supportive accountability mechanisms embedded within the digital modules.

4.2.4. Conclusion: RQ2 Response

The findings show that the flipped digital modules—when properly sequenced and structured—effectively supported:

Comprehension, by allowing learners to engage with foundational input at their own pace

Engagement, through meaningful in-class interaction built upon prior preparation

Autonomy, by establishing habits of independent study reinforced by regular feedback

In direct response to RQ2, the digital module design successfully advanced cognitive, affective, and behavioral engagement in the flipped learning environment. These outcomes affirm that well-designed digital content plays a central role in enhancing learner experience—not the flipped format alone, but the quality and structure of what is flipped.

4.3. Pedagogical Implications

This section identifies instructional design principles derived directly from the observed learning outcomes and student feedback, providing evidence-based implications for future flipped English course development. Each sub-section draws on survey data, quiz performance, and qualitative responses to articulate how specific instructional elements shaped the learning experience. These implications address RQ3: What instructional design principles can be derived from the observed learning outcomes and student feedback to inform future flipped English content development?

4.3.1. Ensure Modular Flexibility and Accessibility

Survey data show that 92% of students rated the video modules as either "agree" or "strongly agree" in terms of clarity and usefulness for pre-class preparation (M = 4.32, SD = 0.48). This high endorsement was echoed in student interviews:

"I could pause and take notes when I wanted. I watched some videos two or three times."

Quiz performance also reflected this trend: students who reported watching videos more than once achieved higher average post-lesson quiz scores (M = 8.6/10) than those who only viewed videos once (M = 6.7/10). These findings indicate that video modularity and learner-controlled pacing enhanced both comprehension and retention. These findings align with Mayer's (2001) multimedia learning theory and Hung's (2015) study, which emphasized that modular and learner-paced videos support self-directed EFL learning.

4.3.2. Align Content across Phases with Instructional Scaffolding

Students consistently reported that learning materials across phases felt connected. Thematic coding of interviews identified "content flow" and "linked tasks" as frequently mentioned benefits:

"When I already knew the vocabulary and ideas, the class felt like applying, not learning for the first time."

87% of survey respondents agreed that "preparation helped me participate better in class," and 74% rated the LMS materials as "clearly connected to class activities." This alignment across phases fostered a sense of continuity that facilitated meaningful classroom engagement. These results reinforce the importance of instructional scaffolding across time, echoing the conclusions of Martin and Bolliger (2018), and Moreno and Mayer (2007), who noted that alignment between instructional components promotes sustained learner engagement.

4.3.3. Use Formative Quizzes as Metacognitive and Motivational Tools

More than half of students (n = 35) described the formative quizzes as motivating or reflective tools:

"The quiz reminded me I didn't get the second part of the video."

"It helped me realize what I really knew."

Quiz completion rates were also correlated with overall participation. Students who completed all 12 quizzes were 27% more likely to actively participate in class discussion, based on instructor field notes. This supports the role of low-stakes, frequent quizzes in promoting accountability and metacognitive regulation. These findings align with Zimmerman's (2002) model of self-regulated learning and Lai's (2015) research showing that regular formative assessments strengthen learners' metacognitive awareness in EFL contexts.

4.3.4. Build Structured Routines to Support Autonomy

While 82% of students agreed that the flipped structure helped them form study habits, many emphasized the importance of consistent scheduling and reminders:

"The weekly schedule helped me make a routine."

"If the deadline moved, I also lost focus."

Students who followed the posted weekly checklist showed significantly higher quiz accuracy (M = 89%) compared to those who did not (M = 73%). This suggests that structured environments scaffold learner autonomy by guiding self-directed learning behaviors. These results support Sweller et al.'s (2011) cognitive load theory and Zainuddin and Attaran's (2016) observations that clear routines help reduce cognitive burden and promote sustained engagement in flipped classrooms.

4.3.5. Embed Authentic Content to Foster Engagement

Student reflections repeatedly cited the value of meaningful, relevant content. In interviews, several noted how real-life topics increased their willingness to participate:

"We talked about things I could use in real life. I felt like I was using real English."

Survey responses mirrored this view, with 79% agreeing that the content "felt practical" and 72% stating that it "made them want to contribute to group discussions." Peer interaction was higher in weeks featuring current events or student-selected topics, further supporting the importance of relevance in fostering active learning. This insight is supported by Tseng and Yeh (2019), who demonstrated that authentic, contextually relevant topics enhance learner participation and critical thinking, and by O'Flaherty and Phillips (2015), who advocate for meaningful content as a driver of engagement in flipped learning environments.

Table 5: Alignment of Digital Components

Design Principle	Learner Evidence	Instructional Implication
Modular Flexibility	92% agreement; higher quiz scores for repeat viewers	Use short, segmented videos with learner pacing
Phase-Aligned Scaffolding	87% noted better participation; 74% saw content alignment	Integrate pre-, in-, and post-class phases as one sequence
Formative Quizzes	35+ students cited quizzes as motivational; 27% higher participation	Use regular low-stakes quizzes with feedback
Structured Autonomy	82% habit formation; checklist followers had 16% higher scores	Provide weekly structure with deadlines and guides
Authentic Engagement	72% increased discussion with relevant content	Use real-world and student-driven themes

4.3.6. Conclusion: RQ3 Response

In direct response to RQ3, this study identifies five empirically grounded design principles for flipped English instruction. These principles demonstrate that instructional content, when aligned with cognitive, behavioral, and emotional dimensions of learner engagement, can significantly improve comprehension, participation, and self-regulation. Future flipped learning designs should therefore focus not just on reversing classroom order, but on strategically sequencing and contextualizing digital content to scaffold engagement across all learning phases.

5. Conclusions

This study explored the instructional design and implementation of digital learning modules in a university-level flipped English course. Using a mixed-methods approach that integrated learner survey responses, interview data, quiz performance, and classroom observations, the research examined how video lectures, LMS-based materials, and formative quizzes were designed and perceived within a three-phase flipped learning model.The aim of the study was not only to evaluate the general effectiveness of flipped learning, but more importantly, to investigate how the design of specific digital content elements—videos, LMS modules, and quizzes—contributed to learner outcomes in an EFL university context. This objective was shaped by a noted gap in the literature: while many studies focus on macro-level outcomes like satisfaction or achievement, few analyze the pedagogical value of the digital content itself.

The findings substantiate this focus by offering empirical evidence on how each content type functioned within the instructional structure. Modular video content with learner-controlled pacing improved comprehension; scaffolded sequencing across pre-, in-, and post-class phases enhanced engagement; and formative quizzes acted as tools for self-regulation. These results were consistent across data sources and led to the identification of five key design principles: modular flexibility, sequenced scaffolding, formative self-regulation, structured autonomy, and authentic engagement. Thus, digital module design emerges not as a supplementary feature but as a critical foundation of effective flipped English instruction.

In this regard, the study successfully fulfills its original purpose. It offers a practical and theoretically grounded framework for flipped English content design—one that goes beyond changing the order of instruction to reimagining how content can be strategically integrated to support meaningful learning. Rather than presenting flipped learning as a delivery technique, this research positions it as an intentional design philosophy rooted in learning science and learner-centered principles. Specifically, RQ1 was addressed through a detailed analysis of how content modules were structured and sequenced; RQ2 was explored through learner perceptions of comprehension, engagement, and autonomy; and RQ3 was answered by synthesizing multi-source data into pedagogically actionable design principles.

5.1. Limitations and Future Research

Although the study yields meaningful insights, it is bounded by certain limitations. The data were collected from a single university over one semester with a relatively homogenous cohort of Korean EFL students. As such, generalizability may be limited, particularly in more diverse or digitally variable learning environments. Future research should validate and extend these design principles across broader linguistic, cultural, and disciplinary contexts. Comparative designs involving control groups or pre-/post-test learning assessments would also strengthen the explanatory power of similar studies. Additional outcome measures such as speaking and writing proficiency should be considered to evaluate deeper language acquisition.

5.2. Final Reflection

Flipped learning demands more than a change in delivery—it requires purposeful, learner-centered design. Designing such content is not just a technical task but a pedagogical and ethical responsibility. Meaningful learning environments should reflect the very values we hope to instill: autonomy, engagement, and deep understanding. This study presents one model informed by learner data and grounded in practice.

References

Aksoy, B. N. Ç., & Takkaç Tulgar, A. (2024). The effects of flipped classroom on EFL students' autonomy and motivation. *GIST – Education and Learning Research Journal, 27*, 1–20. https://doi.org/10.26817/16925777.1727

Al-Harbi, S. S., & Alshumaimeri, Y. A. (2016). The flipped classroom impact in grammar class on EFL Saudi secondary school students' performances and attitudes. *English Language Teaching, 9*(10), 60–80. https://doi.org/10.5539/elt.v9n10p60

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International Society for Technology in Education.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). SAGE Publications.

Fiorella, L., & Mayer, R. E. (2015). *Learning as a generative activity: Eight learning strategies that promote understanding*. Cambridge University Press.

Hsieh, J. S. C., Wu, W.-C. V., & Marek, M. W. (2016). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning, 30*(1–2), 1–21. https://doi.org/10.1080/09588221.2015.1111910

Hung, H. T. (2015). Flipping the classroom for English language learners to foster active learning. *Computer Assisted Language Learning, 28*(1), 81–96. https://doi.org/10.1080/09588221.2014.967701

Lai, C. (2015). Modeling teachers' influence on learners' self-directed use of technology for language learning outside the classroom. *Computers & Education, 82*, 74–83. https://doi.org/10.1016/j.compedu.2014.11.005

Lo, C. K., & Hew, K. F. (2017). A critical review of flipped classroom challenges in K–12 education: Possible solutions and recommendations for future research. *Research and Practice in Technology Enhanced Learning, 12*(1), 1–22. https://doi.org/10.1186/s41039-016-0044-2

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning, 22*(1), 205–222. https://doi.org/10.24059/olj.v22i1.1092

Mayer, R. E. (2001). *Multimedia learning*. Cambridge University Press.

Moreno, R., & Mayer, R. E. (2007). Interactive multimodal learning environments. *Educational Psychology Review, 19*(3), 309–326. https://doi.org/10.1007/s10648-007-9047-2

O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education, 25*, 85–95. https://doi.org/10.1016/j.iheduc.2015.02.002

Öztürk, M., & Çakıroğlu, Ü. (2021). Flipped learning design in EFL classrooms: Implementing self-regulated learning strategies to develop language skills. *Smart Learning Environments, 8*(2). https://doi.org/10.1186/s40561-021-00146-x

Paas, F., Renkl, A., & Sweller, J. (2003). Cognitive load theory and instructional design: Recent developments. *Educational Psychologist, 38*(1), 1–4. https://doi.org/10.1207/S15326985EP3801_1

Roediger, H. L., & Butler, A. C. (2011). The critical role of retrieval practice in long-term retention. *Trends in Cognitive Sciences, 15*(1), 20–27. https://doi.org/10.1016/j.tics.2010.09.003

Shin, M. H., & Kang, P. W. (2019). A study on the self-regulating learning ability of general English and Spanish learners in the flipped learning strategy. *Journal of the Korea Convergence Society, 10*(4), 73–80. https://doi.org/10.15207/JKCS.2019.10.4.073

Sweller, J., Ayres, P., & Kalyuga, S. (2011). *Cognitive load theory*. Springer.

Tseng, H., & Yeh, H. T. (2019). Learning-related soft skills among online business students in higher education: Grade level and managerial role differences in self-regulation, motivation, and social skill. *Computers in Human Behavior, 95*, 179–186.

Zainuddin, Z., & Halili, S. H. (2016). Flipped classroom research and trends from different fields of study. *The International Review of Research in Open and Distributed Learning, 17*(3), 313–340. https://doi.org/10.19173/irrodl.v17i3.2274

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2