

Analysis of English Learning Conditions in a Mastery-Based Flipped Classroom during the Digital Era for Senior High School Students

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ABSTRACT

This study explores students' learning needs as a foundation for developing interactive video media based on a Mastery Learning–Flipped Classroom model, specifically for teaching procedure text in senior high school. Using the frameworks of Hutchinson and Waters (1987) for needs analysis and Nation's (2001) lexical model, the study identifies both content and vocabulary gaps that hinder student performance. Data were gathered from 50 tenth-grade students through a needs analysis questionnaire and a vocabulary pretest focusing on verbs, connectors, and functional terms. The findings show that students struggle with key vocabulary related to procedure texts, especially in form, meaning, and use. Additionally, most students prefer self-paced, video-based learning with visual and step-by-step features. These preferences support the relevance of a flipped classroom format combined with mastery cycles to ensure deeper understanding. The results highlight the importance of designing instructional media that respond directly to learners' needs and readiness. This paper is the early phase of an R&D development process and provides a clear basis for designing the next stage of digital media tailored to the English procedure text curriculum.

Keywords: flipped classroom; mastery learning; needs analysis; procedure text; vocabulary; Paul Nation

INTRODUCTION

English learning in Indonesian classrooms continues to face major challenges, especially in the digital era. While digital tools offer access and flexibility, many students still struggle to engage with materials meaningfully. In senior high school English classes, students are expected to understand and produce various text types, including procedure texts. Yet, in practice, many students show limited vocabulary mastery when working with common procedural instructions. Words like cut, tie, tighten, and insert—frequently found in texts such as “How to Make a Keychain” or “How to Make a Bracelet”—are often unfamiliar to them. This lack of basic functional vocabulary hinders comprehension and production.

The current curriculum, whether based on the 2013 Curriculum (K13) or the more recent Kurikulum Merdeka, emphasizes student-centred learning and independent skill-building. Students are expected to prepare at home, explore learning materials independently, and come to class ready to engage. This demands both a solid language foundation and strong self-regulation. In this context, effective pre-class learning support becomes essential.

To design such support, a clear understanding of student needs is critical. Hutchinson and Waters (1987) propose two categories of needs: target needs (what learners must know to function effectively) and learning needs (how they learn best). Meanwhile, Nation's (2001) lexical framework stresses the importance of knowing a word's form, meaning, and use. When applied together, these frameworks help identify student readiness and learning gaps—especially in vocabulary areas essential for task-specific texts like procedures.

Despite these insights, there is currently no interactive learning media specifically designed for teaching procedure texts using a Mastery Learning–Flipped Classroom model. Existing resources often lack structured feedback, independent cycles of mastery, and relevant, task-based vocabulary support. This study addresses that gap by conducting a needs analysis to inform the development of

METHODS

This study used a qualitative descriptive approach to explore the English learning needs of vocational students in the context of a mastery-based flipped classroom. This method was chosen to allow a detailed, contextual analysis of classroom realities, student perspectives, and learning patterns, based on non-numerical data collected through questionnaires and interviews.

Participants in this study included 30 first-semester students and 4 English lecturers from Politeknik Negeri Media Kreatif in Jakarta. The students represented four departments: Graphic Design, Animation, Publishing, and Hospitality. Two students from each study program were selected to ensure diverse input across different vocational fields. The lecturers were selected based on their teaching experience in General English courses at the institution.

Data were collected using two instruments: a structured questionnaire and semi-structured interviews. The questionnaire was based on the framework by Hutchinson and Waters (1987), focusing on both target needs—such as necessities, lacks, and wants—and learning needs, which include preferred learning methods, available resources, and learning environments. The questionnaire was distributed using Google Forms to ensure accessibility. In parallel, interviews were conducted with English lecturers via Zoom to gather their views on student needs, teaching challenges, and the role of technology in the classroom. All participants gave informed consent prior to data collection.

Questionnaire data were analyzed descriptively using percentage calculations to identify common trends in student responses. Interview transcripts were analyzed thematically by identifying key patterns and categories related to language skills, digital learning tools, and instructional barriers. The combination of survey and interview data allowed for triangulation and strengthened the validity of the findings.

This material and method as much as possible to give an idea to the reader through the methods used (Sa'aati, 2003) (references on this template are just an example). Sub-subhead on this method comprising at least one research design, research participants, data sources/instruments, data collection, and data analysis.

RESULTS AND DISCUSSION

The results from the needs analysis questionnaire revealed clear patterns in both students' target needs and learning needs, as defined by Hutchinson and Waters (1987). When asked about their purpose for learning English, 72% of students said they wanted to be able to give instructions clearly and correctly, especially in practical contexts. Another 60% indicated they struggled to understand written procedures without teacher assistance. In terms of learning preferences, 68% of respondents preferred visual and video-based learning, while 54% expressed interest in using interactive media that allowed repetition and self-paced access. These findings suggest a strong desire for focused, contextualized, and digitally supported learning tools.

Table 1

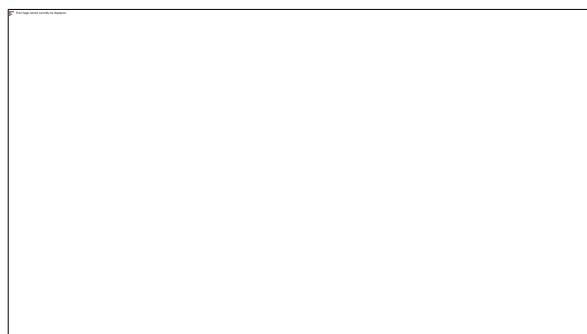
Summary of Target and Learning Needs Based on Student Responses

Category	Percentage (%)
Target Need: Give instructions clearly	72%
Target Need: Understand written procedures	60%
Learning Need: Prefer video-based materials	68%
Learning Need: Prefer self-paced practice	54%
Learning Challenge: Limited vocabulary knowledge	70%
Learning Challenge: Difficulty understanding sequence	63%

This table should include categories such as: "Reasons for Learning," "Preferred

Vocabulary Gaps Based on Nation's Framework

In the pretest, students were assessed on 20 key vocabulary items commonly used in procedure texts, including verbs (tie, tighten, insert, fold), connectors (first, next, finally), and noun phrases (string, hook, clasp). The analysis followed Nation's (2001) framework: form, meaning, and use. The results showed that: Only 38% of students could recognize the correct spelling and pronunciation of the verbs. 31% correctly matched words to their meanings in procedural contexts. Just 24% used the words accurately in example instructions.



These data confirm that students lack not only vocabulary knowledge but also the ability to apply it in context. Without mastery of this basic procedural language, it's difficult for students to follow or create instructions, making independent learning harder.

Preferences for Digital Learning

When asked about digital learning experiences, most students were familiar with tools like Google Classroom, YouTube, and WhatsApp-based assignments. However, only 12% had ever used interactive video media with branching choices, embedded quizzes, or feedback. 76% preferred media that they could pause, replay, and interact with. 65% said they would feel more confident learning English if the media were “step-by-step” and focused on one skill at a time.

Table 2

Digital Learning Preferences – Tools Used vs. Tools Desired

Digital Tool	Used by Students (%)	Preferred by Students (%)
Google Classroom	88%	56%
YouTube	84%	70%
WhatsApp Assignments	72%	48%
Interactive Video (with quizzes)	12%	76%
Replayable Step-by-Step Media	18%	65%

These results show a clear gap between what students experience and what they actually prefer. There is strong demand for engaging, guided digital materials that support independent and repeated practice.

CONCLUSION

The findings of this study confirm that students face real challenges in understanding and producing procedure texts, particularly due to limited vocabulary knowledge in verbs, connectors, and functional terms. Students also express clear preferences for self-paced, video-based learning that allows repetition and visual support. These needs align closely with the principles of a mastery-based flipped classroom approach, where pre-class exposure and structured review cycles help improve

understanding.

Given these findings, the development of interactive instructional video media is not only relevant but necessary. Media designed to address the identified lexical gaps and learning preferences can support students in mastering procedural texts more effectively. The results of this analysis provide direct input for content selection, instructional design, and media format, all of which will inform the development phase of the learning product.

This paper is the early phase of the R&D development process. The needs analysis carried out here serves as the foundation for the next stage: designing and developing a prototype of digital learning media that integrates mastery learning cycles with flipped classroom delivery for English procedure texts in senior high school settings.

ACKNOWLEDGEMENTS

The author would like to express deep appreciation to Universitas Sebelas Maret for the academic and technical support provided during this research. Special gratitude is extended to Mrs. Dr. Nur Arifah Drajiati, M.Pd, and Mr. Dr. Eka Budhi Santosa, S.T., M.Pd, for insightful suggestions and continuous encouragement. The author also thanks the reviewers and the organizing committee of the International Conference on English Language Teaching for their helpful comments and for hosting this scholarly event. Furthermore, heartfelt gratitude is expressed to the Lembaga Pengelola Dana Pendidikan for the financial support that made this research and presentation possible.

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