



Need Analysis for Developing Technology-Based Speaking Learning Media for Junior High School Students

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Abstract

This study aimed to identify junior high school students' needs for developing technology-based speaking learning media in English language instruction. The research was conducted as the analysis phase of a Research and Development (R&D) framework using a descriptive mixed-method approach. The participants consisted of 20 eighth-grade students and one English teacher at SMP Pangudi Luhur Sukaraja. Data were collected through a nine-item Likert-scale questionnaire and semi-structured interviews. The questionnaire examined students' target needs and learning needs related to speaking difficulties, instructional preferences, and expectations regarding learning media, while the interviews explored classroom practices and challenges encountered in teaching speaking. Quantitative data were analysed using descriptive statistics and percentage calculations, whereas qualitative data were interpreted through thematic analysis to strengthen the quantitative findings. The results indicated that students demonstrated a very high need for technology-based speaking learning media, with an overall percentage score of 89.6%, which was categorized as Very High based on the predetermined interpretation scale (81–100%). Students expressed strong preferences for interactive learning environments incorporating visual and audio elements that could enhance motivation, confidence, and opportunities for authentic communication. The teacher also emphasized that conventional instructional resources and limited classroom time constrained students' speaking practice and recommended the development of more engaging multimedia tools. These findings suggest that needs analysis provides an essential empirical foundation for designing contextually relevant technology-based speaking learning media capable of improving students' communicative competence and supporting more meaningful English learning experiences.

Keywords: English Language Teaching; Junior High School Students'; Need Analysis; Speaking Skills; Technology-based Learning Media.

INTRODUCTION

Speaking is widely recognized as one of the most essential language skills in English learning because it enables learners to communicate ideas, opinions, emotions, and experiences effectively in authentic social contexts. Beyond linguistic competence, speaking proficiency also contributes to learners' confidence, critical thinking, and active participation in academic and everyday interactions (Mahdi, 2024). In contemporary English language education, communicative competence has become a major instructional goal, requiring students to apply their language knowledge through meaningful spoken communication rather than merely mastering grammatical structures. Consequently, the development of speaking skills has become a priority in secondary education to prepare students for both academic success and real-life communication demands (Derakhshan et al., 2021).

Despite its importance, speaking remains one of the most challenging skills for English as a Foreign Language (EFL) learners, particularly at the junior high school level. Students frequently encounter difficulties related to limited vocabulary, inadequate pronunciation, fear of making mistakes, and low self-confidence when expressing their ideas in English (Kurniati et al., 2024; Warohma et al., 2022). These challenges often result in communication anxiety and reduced classroom participation. Recent studies have also indicated that insufficient opportunities for authentic speaking practice and the limited use of interactive learning media significantly hinder students' oral language development (Kurniati et al., 2023). Consequently, many students prefer to remain silent or rely on their first language during classroom interactions.

The factors influencing students' speaking difficulties can generally be categorized into internal and external dimensions. External factors include family support, social environments, and community exposure to English, whereas internal factors are closely associated with instructional practices, classroom environments, and the availability of effective learning resources (Ahmad et al., 2026; Warohma et al., 2022). Among these internal

factors, the selection and implementation of learning media play a crucial role in fostering students' motivation and willingness to communicate. Conventional teaching methods that rely heavily on textbooks and written exercises frequently fail to provide meaningful opportunities for oral interaction and collaborative learning experiences. As a result, students often demonstrate low engagement and limited enthusiasm toward speaking activities (Ahmad et al., 2026).

The rapid advancement of educational technology offers promising alternatives for addressing these challenges. Technology-based learning media, including interactive videos, digital storytelling platforms, multimedia applications, and game-based learning environments, have been shown to enhance learners' motivation, engagement, and speaking performance by integrating visual, auditory, and contextual elements into the learning process (Hendra & Kurniati, 2024; Mayer & Fiorella, 2021). According to the Cognitive Theory of Multimedia Learning, students learn more effectively when information is presented through multiple channels that support active cognitive processing (Mayer & Fiorella, 2021). Therefore, integrating technology into speaking instruction has the potential to create more meaningful, enjoyable, and student-centred learning experiences.

In the context of instructional development, identifying learners' needs constitutes a fundamental stage before designing educational products or learning media. Needs analysis provides systematic information regarding learners' target needs, learning preferences, challenges, and expectations, thereby ensuring that instructional innovations address authentic classroom problems (Kaharuddin, 2025; Warohma et al., 2022). Hutchinson and Waters conceptualize needs analysis as comprising target needs-what learners need to accomplish in the target situation-and learning needs, which encompass the conditions and resources necessary for effective learning. This perspective emphasizes that educational media should be designed based on empirical evidence gathered from both teachers and students rather than solely on theoretical assumptions (Nuraeni et al., 2025; Tali & Belhaj, 2025).

Several recent studies have investigated speaking instruction and technology integration in EFL contexts. However, most previous research has focused primarily on instructional strategies, speaking materials, or digital applications without systematically examining students' needs as the foundation for media development (Ahmad et al., 2026; Lestari et al., 2026). Furthermore, limited studies have explored the specific needs of junior high school students in rural educational settings, where access to innovative instructional resources may still be constrained. This gap highlights the importance of conducting a comprehensive needs analysis to ensure that future learning media are contextually relevant and pedagogically effective.

Preliminary observations and interviews conducted at SMP Pangudi Luhur Sukaraja revealed several challenges in speaking instruction. The English teacher reported that students frequently lacked confidence when speaking English due to limited vocabulary mastery and inadequate opportunities for communicative practice. Moreover, the instructional media currently employed remained predominantly conventional, relying on textbooks and written exercises. The teacher emphasized the necessity of developing innovative and technology-based media capable of increasing students' motivation, participation, and speaking confidence. These findings align with Gusmuliana and Dermawan (2024), who argue that engaging and contextual learning environments significantly influence learners' willingness to communicate in English.

Classroom observations further demonstrated students' preferences for technology-supported learning activities. More than half of the eighth-grade students expressed greater interest in learning experiences that incorporated digital media, visual materials, and interactive elements. They perceived technology-enhanced instruction as more enjoyable, motivating, and easier to understand than traditional approaches. Such findings reinforce the growing recognition that educational technology can facilitate flexible, accessible, and learner-centred instructional practices that support students' communicative competence (Lestari et al., 2026).

Based on Research and Development (R&D) perspective, needs analysis represents the initial phase of designing instructional products that are responsive to learners' characteristics and contextual demands. By systematically identifying students' target needs and learning needs, researchers can develop media that effectively address classroom realities and support meaningful language use. Therefore, the present study positions need analysis as a crucial foundation for developing technology-based speaking learning media for junior high school students.

While previous research has largely emphasized pedagogical approaches and the development of speaking materials, this study prioritizes learners' needs as the primary foundation for designing future instructional media in junior high school EFL settings. Its distinctive contribution lies in the utilization of empirical evidence gathered from teachers and students to inform the development of technology-mediated speaking learning resources that align with contextual educational realities and the specific demands of local classrooms.

Accordingly, this study aims to identify junior high school students' target needs and learning needs in English speaking instruction. The findings are expected to provide a theoretical and practical foundation for developing innovative technology-based speaking learning media that enhance students' motivation, confidence, and communicative competence. In addition, the study is anticipated to assist English teachers in selecting instructional strategies and digital resources that better accommodate students' learning characteristics and contemporary educational demands.

The urgency of conducting this needs analysis at SMP Pangudi Luhur Sukaraja is closely related to the existing instructional conditions within the school. Preliminary classroom observations revealed that speaking activities remain predominantly dependent on textbooks, printed worksheets, and teacher explanations, with very limited integration of interactive or digital learning resources. Although students have demonstrated considerable interest in technology-assisted learning experiences, such preferences have not yet been accommodated through appropriate instructional media. Consequently, conducting a comprehensive needs analysis is essential as the initial phase of the Research and Development process to ensure that future technology-based speaking media genuinely address learners' characteristics, classroom realities, and contextual educational challenges.

METHOD

This study employed the analysis phase of a Research and Development (R&D) framework using a descriptive mixed-method approach to investigate students' needs for technology-based speaking learning media. The needs analysis was conducted to obtain empirical information that would serve as the foundation for subsequent media development stages. According to recent methodological perspectives, combining quantitative and qualitative evidence enables researchers to generate a more comprehensive understanding of educational needs and contextual learning challenges (Creswell, 2014). The research was carried out at SMP Pangudi Luhur Sukaraja, where preliminary observations had indicated the necessity of developing more interactive media to support English speaking instruction.

The participants consisted of 20 eighth-grade students and one English teacher selected through purposive sampling because of their direct involvement in the teaching and learning process. Data were collected using questionnaires and semi-structured interviews. The questionnaire comprised nine Likert-scale items designed to identify students' target needs and learning needs, including their speaking difficulties, preferences for instructional methods, expectations regarding learning media, and experiences in English learning. Meanwhile, the interview with the English teacher explored classroom practices, instructional challenges, and perceptions concerning the integration of technology-based media into speaking instruction. The use of multiple instruments also facilitated methodological triangulation to enhance the credibility of the findings (Johnson et al., 2007).

The questionnaire instrument consisted of nine statements measured using a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1).

Table 1. Likert Scale

No	Likert Scale	Score
1.	Strongly Agree	5
2.	Agree	4
3.	Neutral	3
4.	Disagree	2
5.	Strongly Disagree	1

The instrument was developed based on the needs analysis framework proposed by Hutchinson and Waters, which distinguishes between target needs and learning needs in language learning contexts. Four items were allocated to examine students' target needs, including speaking difficulties, communicative goals, and expectations regarding English-speaking competence, while five items addressed learning needs, such as preferred instructional activities, learning media, technological support, and classroom interaction patterns. Although the instrument comprised only nine items, each statement represented essential indicators required during the preliminary needs analysis phase of Research and Development (R&D) studies, where concise but contextually relevant information is needed to guide subsequent product development (Branch & Dousay, 2015; Kaharuddin, 2025). To ensure content validity, the questionnaire blueprint and item formulations were reviewed

by two experts in English Language Education, who evaluated the alignment between the indicators, research objectives, and the intended development of technology-based speaking learning media.

Tabel 2. Instrument Blueprint of the Needs Analysis Questionnaire

No	Dimension	Indicator	Item Numbers	Total Items
1	Target Needs	Speaking difficulties, communicative goals, and expectations toward speaking competence	1–4	4
2	Learning Needs	Preferred learning activities, technology and media preferences, and classroom interaction and support	5–9	5
Total				9 items

The percentage scores obtained from students' responses were subsequently interpreted using predetermined criteria to determine the level of students' needs for technology-based speaking learning media. Students' responses were subsequently interpreted using percentage intervals that classified needs into five categories: very high, high, moderate, low, and very low.

Table 3. The criteria of Students' Responses

No	Interval	Criteria
1	81% - 100%	Very high
2	61% - 80%	High
3	41% - 60%	Medium
4	21% - 40%	Low
5	0% - 20%	Very low

Quantitative data obtained from the questionnaires were analysed using descriptive statistics by calculating percentages and mean scores to determine the dominant needs expressed by students. The percentage score was calculated using the formula: $P = \sum x / \sum xi \cdot 100\%$, where (P) represents the percentage score, ($\sum x$) denotes the total score obtained from respondents, and ($\sum xi$) refers to the maximum possible score. Qualitative data derived from teacher interviews were analysed thematically to provide deeper explanations and strengthen the interpretation of the quantitative findings. The integration of both datasets enabled a comprehensive understanding of students' needs as a basis for developing effective technology-based speaking learning media (Kaharuddin, 2025).

RESULT AND DISCUSSION

The findings of this study were derived from two primary data sources, namely students' questionnaires and semi-structured interviews with the English teacher. The questionnaire data were collected from 20 eighth-grade students at SMP Pangudi Luhur Sukaraja to identify their target needs and learning needs regarding English speaking instruction. The overall analysis revealed that students obtained a total score of 806 out of the maximum possible score of 900, resulting in an average percentage of 89.6%, which falls into the *very high* category.

Table 4. Students' Responses toward Technology-Based Speaking Learning Media

No.	Aspect/Item	Percentage (%)
1	Speaking English is important for future communication needs	95.0
2	Students experience difficulties in vocabulary and pronunciation	90.0
3	Students need more opportunities to practice speaking in class	92.0

4	Students prefer communicative activities such as pair and group work	88.0
5	Visual learning media increase students' motivation to learn English	91.0
6	Audio resources help students understand speaking materials better	87.0
7	Technology-based media make speaking activities more enjoyable	93.0
8	Interactive digital resources improve students' confidence in speaking	89.0
9	Students expect teachers to integrate more educational technology	82.4
Average Overall Students' Needs		89.6 (Very High)

As presented in Table 4, all questionnaire items obtained percentages above 80%, indicating that students demonstrated consistently high expectations toward technology-based speaking learning media. The highest percentage (95.0%) was associated with the importance of English speaking for future communication purposes, while substantial agreement was also observed regarding the motivational benefits of visual, audio, and interactive digital resources. These findings suggest that students require more engaging learning environments that provide authentic opportunities for oral communication and active participation. The overall mean score of 89.6% therefore falls into the *Very High* category, confirming the urgency of developing technology-supported speaking media that align with learners' characteristics and classroom needs.

The findings further support the Cognitive Theory of Multimedia Learning proposed by Mayer and Fiorella (2021), which argues that meaningful learning is enhanced when verbal and visual information are processed simultaneously through multiple cognitive channels. Likewise, recent studies have emphasized that digital technologies contribute to more inclusive and learner-centred educational environments by promoting interaction, motivation, and communicative engagement among EFL learners (Lestari et al., 2026).

The quantitative findings were corroborated by the interview data obtained from the English teacher. The teacher reported that students frequently encountered difficulties related to limited vocabulary, pronunciation problems, and a lack of confidence when expressing ideas in English. Speaking activities were predominantly supported by textbooks and written exercises, providing limited opportunities for authentic communication practice. The teacher therefore emphasized the necessity of integrating interactive and technology-based learning media to increase students' motivation and participation. This convergence between students' responses and teachers' perspectives strengthens the credibility of the findings through methodological triangulation and confirms that the development of technology-based speaking learning media is both pedagogically relevant and contextually necessary.

The students' strong preference for technology-based instruction also reflects current developments in English language education, where digital media play an increasingly important role in promoting communicative competence. Previous studies have demonstrated that interactive learning platforms, animated videos, and multimedia applications contribute positively to students' speaking performance by reducing anxiety and increasing opportunities for authentic language use (Kaharuddin, 2025). Therefore, the high percentage obtained in this study provides empirical support for the development of innovative speaking media tailored to junior high school learners' characteristics and contextual needs.

The interview data further enriched the quantitative findings by providing insights into existing classroom practices and instructional challenges. The English teacher explained that speaking activities commonly involved short dialogues, pair work, and group conversations related to everyday topics, pronunciation, and basic grammar. Although students generally showed enthusiasm during interactive sessions, many still experienced difficulties in expressing ideas confidently in English. Limited vocabulary mastery, fear of making mistakes, and insufficient opportunities for regular speaking practice remained the major barriers to oral communication. These findings are consistent with Mahdi (2024), who identified linguistic competence and psychological factors as significant determinants of speaking performance among EFL learners.

Another important issue highlighted by the teacher concerned the limited use of instructional media. Speaking instruction primarily relied on textbooks and written exercises, with only occasional supplementary materials such as vocabulary lists and sample dialogues. The teacher emphasized that the absence of interactive and technology-supported media restricted students' opportunities to engage in meaningful communicative activities both inside and outside the classroom. Similar concerns have been reported in recent studies, which argue that conventional instructional approaches often fail to accommodate students' learning preferences in digital educational environments (Tali & Belhaj, 2025).

The integration of quantitative and qualitative findings demonstrates a strong alignment between students' expectations and teachers' instructional needs. Both groups emphasized the importance of developing learning media that incorporate visual, auditory, and interactive components to support English speaking practice. From a Research and Development perspective, these findings confirm that needs analysis constitutes a crucial preliminary stage in designing instructional products that respond to authentic classroom conditions (Kaharuddin, 2025). The identification of learners' target needs and learning needs provides valuable guidance for developing technology-based speaking learning media that are pedagogically relevant, motivating, and contextually appropriate for junior high school students.

Overall, the findings suggest that technology-enhanced learning environments have considerable potential to improve students' confidence, motivation, and communicative competence in English speaking. Consequently, future stages of this research should focus on designing, developing, and validating multimedia-based speaking learning media that align with the empirical needs identified in the present study.

CONCLUSION

The findings of this study indicate that junior high school students demonstrate a very high need for technology-based media to support English speaking learning, as reflected in the overall percentage score of 89.6%. Both questionnaire and interview data reveal that students require interactive, visually engaging, and audio-supported learning environments that can enhance their motivation, confidence, and opportunities for authentic communication. The teacher's perspectives further confirm that conventional instructional resources are insufficient to address current challenges in speaking instruction, particularly regarding limited practice time and students' reluctance to speak English. Therefore, the needs analysis conducted in this study provides an empirical foundation for the subsequent stages of developing technology-based speaking learning media that are contextually relevant to learners' characteristics and classroom realities. Future studies are recommended to proceed with the design, development, and validation of multimedia learning products to improve students' communicative competence and engagement in English learning.

REFERENCE

- Ahmad, R. A. R., Khoiruman, M. A., & Uslan, U. (2026). Effectiveness of Using Digital-Based Interactive Media in Improving Fifth Grade Elementary School Students' English-Speaking Skills. *International Journal of Educational Practice and Policy*, 4(2), 233–251. <https://doi.org/DOI:%2010.66314/ijep.v4i2.855>
- Branch, R. M., & Dousay, T. A. (2015). Survey of instructional design models (5th ed.). *Association for Educational Communications & Technology*. https://aect.org/survey_of_instructional_design.php
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed). SAGE Publications.
- Derakhshan, A., Kruk, M., Mehdizadeh, M., & Pawlak, M. (2021). Boredom in online classes in the Iranian EFL context: Sources and solutions. *System*, 101, 102556. <https://doi.org/10.1016/j.system.2021.102556>
- Gusmuliana, P., & Dermawan, R. (2024). An Exploration of Self-Directed Learning in Speaking English. *Gurindam: Jurnal Bahasa Dan Sastra*, 4(2), 80–91.
- Hendra, Z., & Kurniati, N. (2024). Development of Interactive Learning Multimedia Based on Guided Inquiry to Improve Student Learning Outcomes in Science Content Material Force, Motion and Energy Transfer Class VI SDN Bumi Arum. *FONDATIA*, 8(1), 32–42. <https://doi.org/10.36088/fondatia.v8i1.4477>
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1(2), 112–133. <https://doi.org/10.1177/1558689806298224>
- Kaharuddin, K. (2025). Needs Analysis-Based Teaching Materials Development for English Speaking Skill Course in Tertiary Level of Education. *Journal of Education Review Provision*, 5(1), 12–27. <https://doi.org/10.55885/jerp.v5i1.490>
- Kurniati, N., Kuspiyah, H. R., & Dantia, N. A. C. (2024). Pendampingan Peningkatan Kemampuan Berbicara Bahasa Inggris Santri PPNH Melalui E-Modul Interaktif. *Journal of Human And Education*, 4(1), 600–602.
- Kurniati, N., Rohmah, A., & Wiyati, D. S. (2023). Design E-Module of English Speaking Material for Students at Nurul Huda Islamic Boarding School. *Proceeding of 3rd International Conference on Research and Development (ICORAD 2023)*, 91–98. <https://doi.org/DOI:%2010.47841/icorad.v2i2.145>
- Lestari, A. N., Sofendi, & Vianty, M. (2026). Technology Integration in Indonesian EFL Classrooms: Patterns, Considerations, And Impacts. *English Review: Journal of English Education*, 14(1), 257–274. <https://doi.org/10.25134/englishreview.v14i1.137>

- Mahdi, D. A. (2024). Linguistic and non-linguistic barriers to English speaking ability among Saudi EFL learners. *Journal of Pedagogical Research*, 8(2), 2. <https://doi.org/10.33902/JPR.202426853>
- Mayer, R. E., & Fiorella, L. (2021). Introduction to Multimedia Learning. In R. E. Mayer & L. Fiorella (Eds.), *The Cambridge Handbook of Multimedia Learning* (3rd ed., pp. 3–16). Cambridge University Press. <https://doi.org/10.1017/9781108894333.003>
- Nuraeni, C., Setyarini, S., & Purnawarman, P. (2025). From Augmentation to Redefinition: ICT-Integrated EFL Learning Tasks Based on SAMR Framework. *Elsya: Journal of English Language Studies*, 7(2), 116–139. <https://doi.org/10.31849/elsya.v7i2.26002>
- Tali, H. A., & Belhaj, A. (2025). Integrating ICT in Language Classes: A Review of The Literature. *International Journal of Linguistics, Literature and Translation*, 8(6), 15–30. <https://doi.org/DOI:%2010.32996/ijllt.2025.8.6.3>
- Warohma, E., Rohmah, A., & Kurniati, N. (2022). Need Analysis of English Speaking Material for Students in Islamic Boarding School. *Seminar Nasional Bahasa, Sastra, Seni, Dan Pendidikan Dasar (SENSASEDA)* 2, 2, 247–257.