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Digital Multimodality for Secondary School English Learning: Development and Evaluation of a Website-Based Instructional Platform

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ABSTRACT

This study developed and evaluated a Digital Multimodality-Based Website (DMW) for teaching English language skills at the secondary school level. Grounded in social semiotic multimodality and the multiliteracies perspective, the study employed a Research and Development design using the ADDIE model: Analysis, Design, Development, Implementation, and Evaluation. Data were collected from five certified English teachers, two expert validators, and 45 students of a state secondary school (SMA Negeri) through needs analysis questionnaires, expert validation forms, and user satisfaction surveys. The needs analysis showed strong teacher demand for an integrated, accessible, and culturally contextualized digital platform that combines reading, writing, listening, and speaking. Validation by ICT and English Language Teaching (ELT) experts showed that the DMW achieved high feasibility scores of 87.5% and 92.5%, indicating strong technical usability and pedagogical appropriateness. The product trial further showed positive student responses across usefulness (3.30), ease of use (3.35), ease of learning (3.35), and satisfaction (3.36). These findings indicate that the DMW was relevant to classroom needs, feasible to implement, and well-received by users. The study contributes a context-sensitive model for multimodal English learning that integrates digital literacy, local cultural content, and four-skill language instruction within a single platform.

Informasi Artikel

Kata Kunci:

Multimoda digital;
Pembelajaran bahasa Inggris;
Website multimoda;
Pendidikan menengah;

ABSTRAK

Penelitian ini mengembangkan dan mengevaluasi *Digital Multimodality-Based Website* (DMW) untuk pengajaran keterampilan bahasa Inggris di tingkat sekolah menengah. Didasarkan pada multimodalitas semiotik sosial dan perspektif multiliterasi, penelitian ini menggunakan desain Penelitian dan Pengembangan (R&D) menggunakan model ADDIE: Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi. Data dikumpulkan dari lima guru bahasa Inggris profesional bersertifikat, dua validator ahli, dan 45 siswa SMA Negeri melalui kuesioner analisis kebutuhan, formulir validasi ahli, dan survei kepuasan pengguna. Analisis kebutuhan menunjukkan permintaan guru yang kuat akan platform digital yang terintegrasi, mudah diakses, dan dikontekstualisasikan secara budaya yang menggabungkan antara keterampilan membaca, menulis, mendengarkan, dan berbicara. Validasi oleh pakar TIK dan Pengajaran Bahasa Inggris menunjukkan bahwa DMW mencapai skor kelayakan yang tinggi sebesar 87,5% dan 92,5%, yang menunjukkan kegunaan teknis dan kesesuaian pedagogis yang kuat. Uji coba produk lebih lanjut menunjukkan respons positif siswa di seluruh kegunaan (3,30), kemudahan penggunaan (3,35), kemudahan belajar (3,35), dan kepuasan (3,36). Temuan ini menunjukkan bahwa DMW relevan dengan kebutuhan kelas, layak untuk diterapkan, dan diterima dengan baik oleh pengguna. Penelitian ini menyumbang model pembelajaran bahasa Inggris yang peka konteks untuk multimoda yang mengintegrasikan literasi digital, konten budaya lokal, dan pengajaran bahasa yang memuat empat keterampilan berbahasa dalam satu platform..

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1. Introduction

The rapid expansion of digital technology has transformed how learners access information, communicate, and construct meaning in everyday life. In English language teaching (ELT), this shift has important pedagogical implications because students increasingly engage with language through combinations of written text, image, audio, video, and interface design rather than through print alone. Multimodality, therefore, is no longer peripheral to literacy; it has become central to how meaning is produced and interpreted in contemporary communication. From a social semiotic perspective, meaning is made through the orchestration of multiple semiotic resources, including linguistic, visual, auditory, spatial, and gestural modes, each contributing differently to communication [1]. In school settings, this view challenges traditional language instruction that privileges written text over other meaning-making resources and invites teachers to design learning experiences that better reflect students' communicative realities [1], [2].

This issue is especially relevant at the secondary school level, where learners are already immersed in digital environments, but classroom practices often remain textbook-centered and teacher-dominated. Although students routinely navigate social media, video-sharing platforms, and interactive websites, English instruction in many schools still relies heavily on linear texts and decontextualized exercises. Such a mismatch can create a gap between students' out-of-school literacy practices and the forms of literacy recognized in formal education. It is no longer sufficient to treat literacy purely as linguistic because communication in schools and society increasingly depends on multimodal forms [2]. Similarly, literacy education must respond not only to the multiplicity of communication channels but also to growing linguistic and cultural diversity [3]. Together, these perspectives suggest that English learning should move beyond conventional print-based instruction toward pedagogies that integrate multiple modes, digital tools, and socially meaningful content [2], [3], [4].

A growing body of research has shown that digital multimodality can support language learning in productive ways. Studies on multimodal composing and digital storytelling have reported gains in learner engagement, creative expression, communicative confidence, and language performance, including speaking, reading, and writing development [5], [6], [7]. Research has also shown that when learners work with multimodal materials, they are not merely consuming language input but actively designing meaning through the interaction of modes, tools, and contexts. It aligns with constructivist and socially situated views of learning, in which learners build understanding through participation, interpretation, and production. More recent work on digital multimodal composing further indicates that multimodal tasks can promote learner agency, autonomy, and strategic language use, while also underscoring the need for further research on how such practices contribute to long-term linguistic development [8], [9].

Web-based platforms are particularly promising for this purpose because they can integrate text, images, audio, video, hyperlinks, and interactive elements within a single accessible environment [10]. For language learning, such platforms offer opportunities to connect listening, speaking, reading, and writing in more authentic and coherent ways than isolated classroom materials often allow. They also enable embedding formative activities, repeated access to learning resources, and flexible learner interaction with content. However, the pedagogical value of a digital platform depends not only on its technological features but also on the coherence of its instructional design. A platform is pedagogically meaningful when it is grounded in an explicit theoretical framework, aligned with language-learning objectives, and responsive to learners' context [11]. For this reason, the present study is guided by social semiotic theory and the multiliteracies perspective. Social semiotic theory explains why multimodal resources matter for meaning-making, while multiliteracies provides the pedagogical rationale for integrating multiple modes and diverse cultural contexts into classroom literacy practices [1], [3], [4].

In the Indonesian context, this need is even more significant, as English teachers are expected to develop students' digital literacy while also maintaining relevance to local culture and classroom realities. Cultural contextualization is important because learners engage more meaningfully with content that reflects familiar values, experiences, and narratives. Integrating local cultural materials into English instruction serves a dual purpose: supporting language learning while reinforcing students' cultural identity. However, this integration remains underdeveloped in much of the digital ELT literature, which often focuses either on technology use in general or on multimodal practices in tertiary settings rather than in secondary schools [12]. Existing studies have demonstrated the promise of multimodal pedagogy, but at least three issues remain insufficiently addressed. First, relatively few studies examine how digital multimodality can be operationalized as a website-based instructional platform for secondary school English learning. Second, limited attention has been paid to integrating local cultural content into multimodal digital materials for EFL learners. Third, prior research often emphasizes either learning outcomes or learner perceptions, whereas fewer studies evaluate a multimodal platform through a combination of development, expert validation, and classroom-based user testing [13], [14], [15].

Accordingly, this study seeks to address those gaps by developing and evaluating a digital multimodality-based website for teaching English language skills at the secondary school level. The website integrates reading, listening, speaking, and writing activities through multimodal resources and culturally

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grounded materials drawn from local folklore. In doing so, the study extends earlier work by moving beyond general discussion of multimodal pedagogy toward the development of a concrete, context-sensitive teaching platform. Its contribution lies not only in proposing a pedagogically grounded digital model for English learning but also in providing empirical evidence of its feasibility and user response through expert validation and classroom implementation. In this way, the study aims to contribute to the growing conversation on how multimodal, culturally relevant, and digitally mediated instruction can better support English learning in contemporary secondary education.

In light of the gaps identified in previous studies, this study seeks to develop and evaluate a digital multimodality-based website for English language learning at the secondary school level. The objectives of the study are: (1) to develop a digital multimodality-based website that supports the teaching of English language skills at the secondary school level; (2) to assess the pedagogical and technological feasibility of the developed website through expert validation; and (3) to investigate students' responses to the website in terms of usefulness, ease of use, ease of learning, and satisfaction.

2. Method

This study employed a Research and Development (R&D) design using the ADDIE model, comprising five stages: Analysis, Design, Development, Implementation, and Evaluation. This design was selected because the study aimed not only to investigate a pedagogical issue but also to develop a tangible instructional product in the form of a digital multimodality-based website for English language learning at the secondary school level. The R&D approach was considered appropriate because it enables the systematic identification of instructional needs, the design and development of a prototype, and the evaluation of its pedagogical and technological feasibility in an authentic educational setting [16]. Through this design, the study generated evidence on the practicality and appropriateness of the website as a teaching platform. However, this design does not primarily aim to establish broad causal claims or wide generalizability beyond the specific context in which the product was developed and tested.

The study was conducted at a state secondary school (SMA Negeri) in Palangka Raya, Indonesia. It involved three groups of participants, selected based on their relevance to the development and evaluation process. The first group consisted of five certified English teachers, each with more than 10 years of teaching experience. These teachers participated in the needs analysis stage and provided input regarding pedagogical demands, classroom realities, and the suitability of digital media for English instruction. The second group included two expert validators: one in Information and Communication Technology (ICT) and one in English Language Teaching (ELT). Their role was to assess the website's technical quality and instructional relevance. The third group comprised 45 students aged 15 to 17 years who were involved in the implementation and user testing of the developed platform. The sampling procedure used in this study was purposive, as participants were selected intentionally based on their expertise, teaching experience, and direct involvement in using the product.

Data were collected using three main instruments. The first instrument was a needs analysis questionnaire comprising 15 items designed to elicit teachers' perceptions of instructional needs, the limitations of existing learning media, and expectations for a multimodal digital platform for English learning. The second instrument consisted of expert validation forms with 10 items per expert to evaluate the website from both technological and pedagogical perspectives. These forms used a four-point Likert scale ranging from 1 (not feasible) to 4 (highly feasible). The third instrument was a user satisfaction questionnaire adapted from Lund [17], which measured four dimensions of user response: usefulness, ease of use, ease of learning, and satisfaction. This instrument was administered to students after they had used the website in classroom learning activities.

To enhance the instruments' credibility, content validity was established through expert judgment. All questionnaires and validation items were reviewed prior to implementation to ensure their relevance to the research objectives and their suitability for the context of digital multimodality-based English learning. In addition, reliability was supported through the use of structured Likert-scale instruments, clear item construction, and consistent scoring procedures across respondents. Since the study primarily focused on product development and feasibility testing, the emphasis was on the appropriateness and consistency of the instruments for the instructional product and research objectives.

The data collection procedures followed the ADDIE sequence. In the analysis stage, the researchers conducted a needs assessment with the participating English teachers to identify pedagogical challenges, existing limitations in English learning media, and the need for a website-based multimodal platform. In the design stage, the structure, content organization, and multimodal learning features of the website were planned based on the findings from the needs analysis and the study's theoretical orientation. During the development stage, the website prototype was created by integrating digital multimodal materials, such as flipbooks, picture series, and *GenAI*-based story videos, to support the teaching of reading, listening, speaking, and writing. During the implementation stage, the developed website was tested in classroom trials for three weeks, involving student participants. Finally, in the evaluation stage, the product was assessed through expert validation and student feedback in order to identify strengths, weaknesses, and areas for refinement.

The data were analyzed using both quantitative and qualitative

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procedures. Quantitative data obtained from the Likert-scale instruments were analyzed descriptively by calculating the mean and standard deviation of the responses. In addition, validation percentages were computed to determine the overall feasibility level of the developed website. Qualitative feedback from experts and users was analyzed thematically to identify recurring patterns in usability, technological performance, pedagogical value, and user experience. The combination of these two forms of analysis enabled the researchers to evaluate the product more comprehensively, not only through numerical ratings but also through practical insights for improvement.

3. Result and Discussion

3.1 The Need Analysis

The need analysis was conducted to identify teachers' perceptions of the need for a web-based Digital Multimodality platform for English language learning at the state secondary school in Palangka Raya. The questionnaire was administered to five certified English teachers, each with more than 10 years of teaching experience. The instrument used a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The results are presented in Tables 1, 2, and 3.

Table 1. Questionnaire Results on the Need for Interactive and Integrated Digital Learning Media

No.	Statement	Answer Score Questionnaire (1-5)					Mean	SD
		Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5		
1.	I need digital learning media that integrates skills of reading, writing, speaking, and listening in one platform.	4	4	5	4	4	**4.2**	**0.45**
2.	I often use digital media in the English Language class.	5	4	4	5	4	**4.4**	**0.55**
3.	Website-based media that allows direct interaction between students and materials (such as web-based quizzes or exercises) is very important for learning.	5	4	5	4	4	**4.4**	**0.55**
4.	The learning media I use right now are already well integrated for teaching four skills simultaneously.	2	2	1	2	2	**1.8**	**0.45**
5.	I need digital media that can be accessed anywhere, anytime, to support English language learning.	5	5	4	5	4	**4.6**	**0.55**

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Table 1 presents the results regarding the need for interactive, integrated digital learning media. The mean scores for the five items ranged from 1.8 to 4.6. The item on the need for digital learning media that integrates reading, writing, speaking, and listening in a single platform obtained a mean score of 4.2 (SD = 0.45). The item on teachers' use of digital media in English classes obtained a mean score of 4.4 (SD = 0.55). The item on the importance of website-based media that allows direct interaction between students and materials also obtained a mean score of 4.4 (SD = 0.55). The item stating that current learning media are sufficiently integrated to teach the four language skills simultaneously obtained a mean score of 1.8 (SD = 0.45). The item on the need for digital media that can be accessed anytime and anywhere obtained a mean score of 4.6 (SD = 0.55). Across the five items in Table 1, the reported mean scores ranged from 1.8 to 4.6.

Table 2. Questionnaire Results on the Need for Contextual and Engaging Digital Multimodal Content

No.	Statement	Answer Score Questionnaire (6-10)					Mean	SD
		Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5		
6.	I need teaching materials in text, image, and video formats that can be customized to local cultural contexts, such as stories about the people of Central Kalimantan.	4	4	4	4	4	**4.0**	**0.00**
7.	The use of visual media such as flipbooks, picture series, or videos can increase students' motivation for study.	4	4	5	5	4	**4.4**	**0.55**
8.	Students are more interested in studying English with digital content that combines text, images, sound, and video.	4	5	5	5	5	**4.8**	**0.45**
9.	I need learning media that facilitate the exploration of local culture in English learning.	5	4	5	4	4	**4.4**	**0.55**
10.	Interactive features such as animation, narration, sound, or visualization are important for engaging students' interest in learning English.	5	4	4	5	4	**4.4**	**0.55**

Table 2 presents the results regarding the need for contextual, engaging digital multimodal content. The mean scores ranged from 4.0 to 4.8. The item on the need for teaching materials in the form of text, images, and videos adapted to local cultural

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contexts obtained a mean score of 4.0 (SD = 0.00). The item on the use of visual media, such as flipbooks, picture series, and videos, to increase students' motivation received a mean score of 4.4 (SD = 0.55). The item stating that students are more interested in studying English with digital content combining text, images, sound, and video obtained the highest mean score in this set, at 4.8 (SD = 0.45). The item on the need for learning media that facilitate exploration of local culture in English learning received a mean score of 4.4 (SD = 0.55). The item on the importance of interactive features such as animation, narration, sound, and story visualization also obtained a mean score of 4.4 (SD = 0.55). Across the five items in Table 2, the reported mean scores ranged from 4.0 to 4.8.

Table 3. Questionnaire Results on the Need for Technological Features Supporting Effective and Collaborative Teaching

No.	Statement	Answer Score Questionnaire (11-15)					Mean	SD
		Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5		
11.	I need web-based quizzes and exercises to directly measure and understand students.	5	4	4	5	5	**4.6**	**0.55**
12.	Feed features that automatically return (auto feedback) are important for helping students understand their results and study quickly.	4	5	5	5	4	**4.6**	**0.55**
13.	Collaborative features, such as discussion forums or student-to-student room sharing, are needed on a digital learning English platform.	5	5	4	5	5	**4.8**	**0.45**
14.	I need a digital system that can automatically evaluate students' speaking and writing skills.	5	4	4	5	4	**4.4**	**0.55**
15.	I am willing to use a multimodal digital platform to support English learning at school.	4	5	5	5	5	**4.8**	**0.45**

Table 3 presents the results related to the need for supporting technological features in digital multimodality-based learning media. The mean scores ranged from 4.4 to 4.8. The item on the need for web-based quizzes and exercises to measure students' understanding obtained a mean score of 4.6 (SD = 0.55). The item on the importance of automatic feedback obtained a mean score of 4.6 (SD = 0.55). The item on the need for collaborative features, such as discussion forums or shared spaces among students, obtained a mean score of 4.8 (SD = 0.45). The item on the need for a digital system capable of automatically evaluating students' speaking and writing skills obtained a mean score of 4.4 (SD = 0.55). The item on teachers' willingness to use a multimodality-based digital platform if available obtained a mean score of 4.8 (SD = 0.45). Across the five items in Table 3, the reported mean scores ranged from 4.4 to 4.8.

The findings suggest that the Digital Multimodality Website (DMW) addressed a clearly identified instructional need in secondary school English instruction. Teachers reported strong

demand for media that integrate the four language skills, combine text with image, audio, and video, and remain accessible beyond classroom time. This pattern is consistent with social semiotic accounts of multimodality, which argue that contemporary meaning-making is distributed across multiple modes rather than confined to print alone [1]. Kress frames multimodality as the coordinated use of semiotic resources for communication. At the same time, literacy in school cannot be understood solely as linguistic, as learners increasingly engage with multimodal forms in educational and everyday contexts [2]. Read alongside Jones and Hafner's account of digital literacies, the needs-analysis results indicate that the teachers were not simply asking for more technology, but for learning media that better reflect how communication is now organized in digitally mediated environments [4]. Research on digital multimodal composing in L2 classrooms further supports this interpretation by showing that the field has expanded in response to changing literacy expectations and has generated evidence related to learner motivation, agency, autonomy, identities, and multiliteracies [8].

This interpretation of the findings is also supported by prior empirical studies on multimodal learning in language education. Digital storytelling-integrated writing instruction has been shown to improve EFL learners' narrative writing, with the experimental group outperforming the control group in the post-test [6]. Likewise, digital storytelling has been reported to improve young EFL learners' writing and positively affect their attitudes toward writing and motivation [7]. These findings reinforce the view that the value of multimodal pedagogy lies not merely in media variety but in its capacity to connect input, production, and interaction within a single learning environment [18]. At the same time, although substantial evidence supports the affective and sociocultural benefits of digital multimodal composing, debates remain about the strength of its linguistic benefits, and more research is still needed on writing development [8]. In this sense, the present study confirms the relevance and classroom appeal of multimodal pedagogy, but it should not be read as conclusive evidence of long-term language gains.

3.2 Developed Product Design

Figure 1 presents the structural display and system flow of the Digital Multimodality website developed in this study. The developed website consisted of three main multimodal components. The first component was a flipbook containing three folklore stories for reading activities. The second component was a picture series containing three folklore stories for speaking activities through visual storytelling and guided oral tasks. The third component was a movie-based multimodality module developed using the *GenAI* Story Movies application for listening and writing activities through audiovisual materials. The *GenAI*-based story videos were created through a structured prompting process. First, the learning objectives, language focus, and target skills were identified, particularly listening comprehension and writing response activities. Then, short story prompts were developed by specifying the topic, characters, setting, cultural context, language level, and expected moral or communicative message. These prompts were entered into the *GenAI* Story Movies application to generate audiovisual story materials.

To ensure the accuracy of cultural content, the prompts included clear cultural references, such as local values, social practices, character interactions, and contextual details relevant to the learners' environment. The generated videos were then checked against reliable cultural knowledge and the researchers' understanding of the local context to avoid inaccurate, stereotypical, or culturally inappropriate representations. When necessary, the prompts were revised and regenerated until the cultural elements, language use, and visual representation were suitable for instructional purposes. Thus, the GenAI-based story videos were not used directly without review, but were validated through careful prompt design, content checking, and revision.

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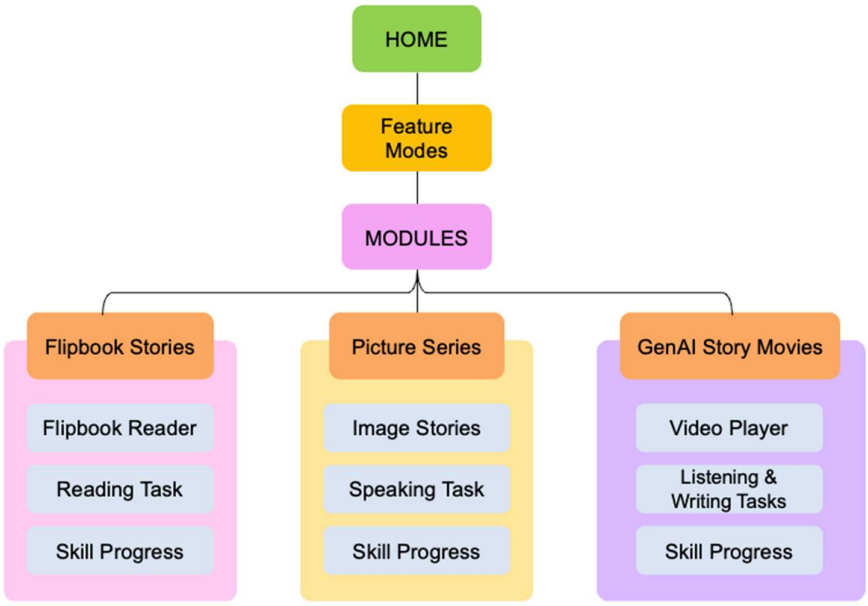

Figure 1. The system flow of the Digital Multimodality website has been developed.

All three multimodal components were developed using folklore from Central Kalimantan, Indonesia. Each language-skill component was accompanied by feedback and evaluation features, including online quizzes, skill practices, and enrichment materials.

These findings also highlight the cultural grounding of the platform. Teachers responded positively to multimodal materials based on Central Kalimantan folklore, suggesting that digital innovation was more meaningful when tied to familiar cultural narratives. This finding strongly aligns with the multiliteracies framework, which argues that literacy pedagogy must address both the multiplicity of communication channels and the importance of cultural and linguistic diversity [3]. It also supports the view that learning becomes more meaningful when local knowledge and values are integrated into broader literacy practices [13]. In the Indonesian context, a local-culture-based digital storytelling project helped young Indonesian EFL-learners express identity, make meaning through local stories, and increase motivation [14]. The present study extends that line of work by showing that local culture can be embedded not only in a single storytelling task but also in a website-based multimodal platform that integrates several language skills and was positively evaluated by the ELT expert for its cultural relevance and integration of local values. A necessary qualification, however, is that cultural relevance alone does not guarantee pedagogical effectiveness; its value depends on how well the content is sequenced, scaffolded, and aligned with instructional objectives.

3.3 Expert Validation

To validate the feasibility of the developed product, two experts were involved: one specializing in Information and Communication Technology (ICT) and one specializing in English Language Teaching (ELT). The validation process used a four-point rating scale, where 1 = not feasible, 2 = less feasible, 3 = feasible, and 4 = highly feasible. The results are presented in Tables 4 and 5.

Table 4. Validation Results from the ICT Expert

No.	Validation Statement	Validation Score	Validation Comment
1.	The website's navigation structure is easy to understand and supports accessibility of digital multimodality features.	4	*Navigation is highly intuitive; users can easily locate multimodal features.*

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2.	The website interface (UI) is well-designed to display multimodal content effectively.	4	*The UI is clean and modern, suitable for presenting multimodal elements.*
3.	Multimodal features (flipbook, picture series, video) function properly without technical issues.	3	*Flippbook and video occasionally experience longer loading times; optimization is recommended.*
4.	The website maintains good access speed when displaying multimodal content.	3	*Access speed is adequate, but media compression is needed to improve loading speed.*
5.	The integration of audio, visual, and video media runs stably across different devices.	3	*Testing on mobile devices produced good results, though video resolution sometimes decreases.*
6.	The website is user-friendly and does not require advanced digital skills.	4	*User-friendly interface; suitable for teachers with basic ICT competence.*
7.	The website design is responsive across different screen sizes.	4	*Responsive and consistent display across multiple screen dimensions.*
8.	The quiz, exercise, and automatic feedback systems function effectively.	3	*Quiz features work properly, but automatic feedback should be made more informative.*
9.	The website ensures data security and system stability.	3	*Additional basic data protection is needed for login security.*
10.	The website supports efficient user interaction with multimodal features.	4	*Multimodal interaction operates smoothly with quick system responses.*
	Total Score and Percentage	**35**	**87.5%**

Table 4 presents the validation results from the ICT expert. The expert evaluated ten indicators related to multimedia technical aspects, system stability, responsiveness, and user-friendliness. The total score obtained was 35 out of 40, equivalent to 87.5%, and categorized as Highly Feasible. Scores of 4 were assigned to the website's navigation structure, interface design, user-friendliness, responsiveness across screen sizes, and support for efficient user interaction. Scores of 3 were assigned to the functioning of multimodal features, access speed, media integration stability across devices, quiz and automatic feedback systems, and data security and system stability.

The expert comments indicated that the navigation was intuitive, the interface was clean and modern, and the display was responsive across multiple screen dimensions. The comments also noted that the flipbook and video features occasionally required longer loading times, that media compression was needed for faster access, that automatic feedback could be made more informative, and that additional data protection was needed for login security.

Table 5. Validation Results from the ELT Expert

No.	Validation Statement	Validation Score	Validation Comment
1.	The multimodal content is aligned with English learning objectives at the senior high school level.	**4**	*The content is aligned with senior high school learning objectives and supports contextual learning.*
2.	The flipbook materials support students' reading comprehension.	**4**	*The flipbook provides a clear storyline and effective reading exercises.*
3.	The picture series effectively stimulates students' speaking skills.	**3**	*The picture series is appropriate, but the speaking activities could be made more varied.*
4.	The GenAI-based movie videos support students' speaking and writing skills.	**3**	*The GenAI-based videos show strong potential, but the writing tasks need to be further enriched.*
5.	The integration of multimodal elements provides a communicative learning experience.	**3**	*The flow of the materials follows appropriate scaffolding principles.*
6.	The sequence of the materials follows ELT pedagogical principles.	**4**	*User-friendly interface; suitable for teachers with basic ICT competence.*

7.	The multimodal content is relevant to local culture, particularly Central Kalimantan folklore.	**4**	*The use of folklore effectively integrates local cultural values.*
8.	The multimodal exercises and quizzes are appropriate for assessing language skills.	**3**	*The multimodal quizzes are appropriate, but the speaking assessment is not yet fully optimal.*
9.	The use of text, images, audio, and video is well balanced.	**3**	*The combination of text, visual, audio, and video media is proportional.*
10.	The multimodal features increase students' motivation to learn English.	**4**	*Students tend to be more active because the content is more engaging and immersive.*
	Total Score and Percentage	**37**	**92.5%**

Table 5 presents the validation results from the ELT expert. The expert evaluated 10 indicators related to the pedagogical quality of the developed website, including alignment with learning objectives, support for language-skill development, communicative value, sequencing of materials, cultural relevance, appropriateness of assessment, balance of multimodal elements, and motivational potential. The total score obtained was 37 out of 40, equivalent to 92.5%, and categorized as Highly Feasible. The expert comments indicated that the multimodal content was aligned with senior high school English learning objectives and that the flipbook materials supported reading comprehension. The picture series was reported to support speaking activities, although greater variation in speaking tasks was recommended. The *GenAI*-generated videos were considered supportive of speaking and writing activities, with a suggestion to enrich the writing tasks further.

The expert also noted that the multimodal integration reflected a communicative approach, that the sequence of materials followed appropriate scaffolding principles, and that the use of Central Kalimantan folklore effectively incorporated local cultural values. In addition, the multimodal exercises and quizzes were considered appropriate for assessing language skills, although the speaking assessment was noted as not yet fully optimal. This may be because speaking assessment requires more complex criteria, such as pronunciation, fluency, accuracy, confidence, and interaction, which may not be fully captured through simple quiz-based activities. The limited opportunities for students to produce oral responses may also have affected the effectiveness of the speaking assessment. The balance of text, images, audio, and video was also evaluated positively, and the multimodal features were reported to increase students' motivation to learn English. Based on the reported scores in Tables 4 and 5, the developed product was categorized as Highly Feasible by both expert validators. Taken together, the validation results indicate that the website met both technological and pedagogical feasibility criteria for implementation in secondary school English learning.

The expert-validation results help explain why the product was judged highly feasible. From the technological perspective, the positive ratings for navigation, interface clarity, responsiveness, and overall usability indicate that the platform reduced barriers that often limit the classroom use of digital tools. It is consistent with prior work emphasizing that intuitive web-based design can enhance learner autonomy and reduce cognitive overload [19]. From the pedagogical perspective, the ELT expert's evaluation showed that the website was not only technically functional but also instructionally coherent. The flipbook, picture series, and *GenAI*-based movie materials were linked to different language-learning functions. At the same time, the overall platform was positively evaluated for alignment with secondary school English learning objectives, communicative learning value, appropriate sequencing of materials, cultural relevance, balance of multimodal elements, and motivational potential. It is theoretically important because, in social semiotic terms, different modes have different affordances for meaning-making [1].

Taken together, these validation findings support the claim that the DMW was designed as a multimodal learning system rather than merely a digital repository of content. This interpretation is further strengthened by the ELT expert's view that the integration of multimodal elements supported a communicative learning experience, indicating that the platform was pedagogically organized not only around media variety but also around meaningful language use. In addition, the expert's positive evaluation of material sequencing suggests that the platform followed appropriate scaffolding principles, which is important for helping learners move through multimodal tasks in a pedagogically structured way. At the same time, the experts' recommendations regarding loading speed, feedback informativeness, speaking-task variation, writing-task enrichment, and speaking assessment refinement introduce a useful qualification: the platform was highly feasible, but still open to refinement. This point also aligns with the observation that digital multimodal composing requires careful task design, feedback practice, assessment, and teacher preparation if it is to function effectively in L2 classrooms [8].

3.4 Product Trial Results

The product trial examined users' responses to the web-based Digital Multimodality platform for English language learning at the senior high school level. The trial was carried out over three weeks, from the first week of November 2025 to the third week

of November 2025, in English classes at the state secondary school in Palangka Raya. After the trial, participants completed a user satisfaction questionnaire. A total of 45 students participated in the trial and completed a 20-item questionnaire adapted from Lund's User Satisfaction Questionnaire [17]. The instrument measured four aspects: usefulness, ease of use, ease of learning, and satisfaction. The questionnaire used a four-point Likert scale, where 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. The results are presented in Tables 6, 7, 8, and 9.

Table 6. The result of the product trial based on the aspect of usefulness

No.	Questionnaire statements	Mean scores (N=45)
1.	The website helps them learn English more effectively.	**3.36**
2.	The multimodal features help me better understand the material.	**3.40**
3.	This website makes learning to speak, read, and write English easier to understand.	**3.16**
4.	This website helps me learn independently.	**3.29**
5.	This website makes English learning more interesting.	**3.31**
	Total Mean	**3.30**

Table 6 presents the results for the usefulness aspect. The total mean score was 3.30. The statement "The multimodal features help me understand the material better" obtained the highest mean score, at 3.40. The statement "The website helps them learn English more effectively" obtained a mean score of 3.36. The statement "This website makes the process of English learning more interesting" obtained a mean score of 3.31. The statement "This website helps me learn independently" obtained a mean score of 3.29. The statement "This website makes learning to speak, to read, and to write English easier to understand" obtained a mean score of 3.16. The total mean score for the usefulness aspect was 3.30.

Table 7. The result of the product trial based on the aspect of ease of use

No.	Questionnaire statements	Mean scores (N=45)
6.	This website is easy to use.	**3.47**
7.	I have no difficulty understanding how to use website features.	**3.29**
8.	The website navigation is clear and easy to follow.	**3.47**
9.	I can easily switch between features.	**3.18**
10.	It is convenient to use this website without any help from others.	**3.33**
	Total Mean	**3.35**

Table 7 presents the results for ease of use. The total mean score was 3.35. The statements "This website is easy to use" and "The website navigation is clear and easy to follow" each obtained a mean score of 3.47. The statement "I feel confident using this website without any help from others" obtained a mean score of 3.33. The statement "I have no difficulty understanding the way of using website features" obtained a mean score of 3.29. The statement "I can easily switch between features" obtained a mean score of 3.18. The mean ease-of-use score was 3.35.

Table 8. The result of the product trial based on the aspect of ease of learning

No.	Questionnaire statements	Mean scores (N=45)
11.	I quickly learned how to use this website.	**3.18**
12.	The multimodal features are easy to understand from the first use.	**3.53**
13.	The instructions for using the website are easy to understand.	**3.43**
14.	I can learn English faster by using this website.	**3.44**
15.	I do not need a long time to get used to the website.	**3.33**
	Total Mean	**3.35**

Table 8 presents the results for the ease-of-learning aspect. The total mean score was 3.35. The statement "The multimodal

features are easy to understand from the first use" obtained the highest mean score, at 3.53. The statement "I can learn English faster by using this website" obtained a mean score of 3.44. The statement "The instruction of using the website is easy to understand" obtained a mean score of 3.43. The statement "I do not need a long time to get used to the website" obtained a mean score of 3.33. The statement "I quickly understand how to learn using this website" obtained a mean score of 3.18. The total mean score for the ease-of-learning aspect was 3.35.

Table 9. The result of the product trial based on the aspect of satisfaction

No.	Questionnaire statements	Mean scores (N=45)
16.	I am satisfied with learning English using this website.	**3.40**
17.	This website motivates me to learn English more.	**3.29**
18.	My learning experience is enjoyable.	**3.29**
19.	I want to use this website again in the future.	**3.44**
20.	This website is appropriate for use as an English learning medium in schools.	**3.40**
	Total Mean	**3.36**

Table 9 presents the results for the satisfaction aspect. The total mean score was 3.36. The statement "I would like to use this website again in the future" obtained the highest mean score, at 3.44. The statements "I am satisfied learning English using this website" and "This website is appropriate for use as an English learning medium in schools" each obtained a mean score of 3.40. The statements "This website motivates me to learn English more" and "I find my learning experience enjoyable" each obtained a mean score of 3.29. The total mean score for the satisfaction aspect was 3.36.

These product-trial results further indicate that students found the platform useful, easy to use, easy to learn, and satisfactory. These four dimensions correspond directly to Lund's usability framework, which identifies usefulness, ease of use, ease of learning, and satisfaction as key dimensions of user experience [17]. The relatively balanced scores across these aspects suggest that the website functioned not only as learning content but also as a usable learning environment. It is significant because digital tools often fail in classroom settings, not because the instructional concept is weak, but because the system is difficult for learners to navigate. In this case, the positive responses suggest that multimodal presentation and interface design worked together to support access to the materials. This interpretation is consistent with earlier arguments that multimodal environments can make language learning more accessible by distributing meaning across visual, textual, and audiovisual modes [1], [2], and with prior empirical work showing that digital storytelling can provide a more favorable and enjoyable context for EFL writing instruction [7]. It is also consistent with the ELT expert's evaluation, which found that the multimodal features had motivational potential, suggesting that the positive student responses were supported not only by usability but also by the content's engaging, immersive quality.

Even so, these trial findings should be read with some caution. Several item means were slightly lower than others, especially those related to switching between features and some learning-process statements. These lower results suggest that the overall positive experience did not extend equally across the platform. Such variation is compatible with the view that the success of digital multimodal composing depends heavily on task design, feedback, assessment, and teacher preparation, and that multimodal environments may sometimes draw attention away from language itself if they are not carefully orchestrated [8]. Thus, the present findings broadly support the promise of multimodal platforms, but they do not justify the assumption that adding more media automatically produces better learning. Rather, they suggest that multimodality is most effective when it is pedagogically organized and technically smooth.

Taken together, these findings support the use of social semiotic multimodality and multiliteracies as complementary frameworks for designing digitally mediated English learning. The former explains why combining text, image, sound, and interaction can enrich meaning-making [1], while the latter explains why such design is more educationally effective when it is culturally situated [3], [13]. For secondary-school ELT, this implies that digital innovation should not be understood merely as the adoption of tools, but as the deliberate design of learning environments that integrate the four language skills, provide interactive practice, and embed meaningful local content. These implications are consistent with broader scholarship arguing that digital literacies in language education involve changes in communicative practice rather than simple changes in classroom equipment [4]. This point is further reinforced by the positioning of digital multimodal composing as a response to evolving literacy expectations in L2 classrooms rather than as a temporary technological trend [8].

Several limitations should nevertheless be acknowledged from these findings. The study was focused mainly on needs, feasibility, and user responses rather than on direct measures of language proficiency gains. Accordingly, the study supports

claims about relevance, usability, and contextual appropriateness more strongly than claims about long-term language improvement. Additional refinement could also focus on multimedia optimization, expanding speaking and writing tasks, and improving feedback systems, as suggested by the expert validation results and the future research agenda proposed in recent digital multimodal composing scholarship [8].

4. Conclusion

This study developed and evaluated a Digital Multimodality Website (DMW) for teaching English language skills at the secondary school level. The findings showed that teachers expressed strong needs for an integrated, accessible, and culturally contextualized digital platform. At the same time, expert validation indicated that the developed website was highly feasible from both technological and pedagogical perspectives. In particular, the validation results showed that the website was not only technically usable but also instructionally coherent, culturally relevant, and appropriate for supporting multimodal English learning at the senior high school level. In terms of the speaking assessment was noted as not yet fully optimal, this may be because speaking assessment is more difficult to rate because it involves pronunciation, fluency, accuracy, confidence, and interaction, which cannot be measured well through simple quizzes. Therefore, future product development should include more speaking tasks, and a clear speaking rubric is also needed so students understand the criteria and teachers can assess speaking more fairly and objectively.

The product trial also yielded positive student responses on usefulness, ease of use, ease of learning, and satisfaction. Overall, these results indicate that the DMW was relevant to classroom needs, feasible to implement, and well received by users, thereby offering a pedagogically structured and contextually grounded model for multimodal English learning.

The study has several implications for English language teaching and digital pedagogy. It suggests that multimodality-based digital platforms can support more integrated English instruction by combining reading, writing, listening, and speaking within one environment. The findings also highlight the importance of designing digital materials that are not only technologically functional but also pedagogically sequenced, communicative, and culturally contextualized. In addition, the study implies that successful implementation of digital multimodality depends not only on media richness but also on instructional coherence, assessment design, and teacher readiness, indicating the need for stronger teacher preparation in multimodal pedagogical design. The use of local folklore further suggests that digital learning materials can support English learning while also reinforcing learners' cultural relevance and engagement.

Several limitations should be noted. The study was conducted in a single school with a limited number of participants, and the product trial lasted only a relatively short period. Moreover, the study focused on needs analysis, feasibility, and user responses rather than on direct measurement of long-term gains in English language achievement. For this reason, the findings provide stronger evidence of relevance, usability, and acceptability than of long-term instructional effectiveness. In addition, although the pedagogical validation results were positive, several aspects of the product still require refinement, particularly the variation of speaking activities, the enrichment of writing tasks, and the optimization of speaking assessment. Future research is therefore needed to test the platform in broader contexts, over longer periods, and through designs that examine its impact on specific English language skills.

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