



## Developing multimodal literacy-based digital material for English reading text

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### Abstract

This study addresses the problem that vocational high school students still rely on traditional learning materials that are less interactive and make it difficult for them to understand English reading texts. The study aimed to develop multimodal literacy-based digital materials that are more engaging, accessible, and relevant to students' needs. This research employed a qualitative Research and Development (R&D) design consisting of four stages: identifying problems, collecting data through interviews, designing the product, and validating and revising the product. The participants were two English teachers and four students from the Office Management major. The findings of the needs analysis revealed that students needed learning materials that were easy to access, simple to understand, related to their vocational field, and supported by multimedia elements such as videos. Based on these findings, the researcher developed digital learning materials in the form of a website and an e-book entitled English at the Office, focusing on adjective phrases in workplace communication. The developed product was validated by two English teachers and obtained a score of 94.7%, indicating that it was very valid and feasible for use in learning. The study concludes that multimodal digital materials can support students' reading comprehension and enhance their learning engagement.

**Keywords:** Multimodal Literacy, Digital Material, Reading, English for Specific Purposes (ESP), Vocational High School

## INTRODUCTION

Reading skills play an important role in students' academic success and lifelong learning because reading enables learners to understand information, interpret meaning, and develop critical thinking abilities. However, reading comprehension remains a significant challenge for many students, particularly in English as a Foreign Language (EFL) contexts where learners often struggle to understand complex texts and unfamiliar vocabulary (Navarrete, 2019; Perfetti & Stafura, 2014). In Indonesia, this issue is reflected in the Programme for International Student Assessment (PISA), which reported that only around 25% of students achieved Level 2 or

higher in reading literacy, remaining below the OECD average (OECD, 2023). These findings indicate that many students still experience difficulties in understanding reading texts critically and meaningfully, especially when learning materials are less interactive and contextualized. In vocational high schools, this problem becomes more significant because students are expected to understand English materials related to workplace communication and professional contexts.

The rapid development of technology has transformed literacy practices from traditional literacy into digital and multimodal literacy. Multimodality refers to the use of multiple semiotic modes, such as written texts, images, audio, videos, and visual representations, to construct meaning in communication and learning activities (Bura, 2020; Mills & Unsworth, 2017). In educational contexts, multimodal literacy supports students' ability to interpret and create meaning through various forms of communication simultaneously (Pramono & Suherdi, 2019). The integration of multimodal elements in English language learning can support students' comprehension, engagement, and motivation because different modes complement each other in the meaning-making process (Parcalabescu et al., 2021). Furthermore, digital learning materials such as e-books and website-based learning platforms provide flexibility and accessibility for students to access learning resources anytime and anywhere (Mumrikoh et al., 2023; Togas et al., 2021).

Several previous studies have highlighted the positive impact of multimodal digital materials in English learning. Sahiruddin et al. (2025) found that multimodal literacy-based learning improved students' engagement and understanding in English learning. Similarly, Utama et al. (2023) reported that multimodal digital materials enhanced students' digital literacy and learning motivation through the integration of audio, video, and interactive features. In addition, Mumrikoh et al. (2023) showed that multimodal e-books increased students' motivation and participation in reading activities. Although these studies demonstrated the benefits of multimodal learning materials, limited studies specifically discuss the development of multimodal literacy-based digital materials for English reading texts within vocational high school contexts.

Observations during teaching practice also revealed that students still relied heavily on conventional printed textbooks, while learning activities were often less interactive and minimally supported by multimedia elements. Listening materials were not integrated with audio features or QR links, and students tended to show low engagement during English reading activities. In addition, many existing English learning materials were not contextualized to vocational students' fields of study, particularly workplace communication contexts. These conditions indicate the need for contextual, engaging, and accessible multimodal digital materials that can support students' reading comprehension and learning engagement in vocational high schools.

Therefore, this study aimed to develop multimodal literacy-based digital materials for English reading texts for vocational high school students. The novelty of this study lies in the development of integrated digital learning materials in the form of a website and e-book entitled *English at the Office*, which combines multimodal elements with contextual English materials related to workplace communication. The developed materials are expected to support students'

reading comprehension and provide more meaningful and engaging English learning experiences.

## **RESEARCH METHOD**

This study employed a qualitative Research and Development (R&D) design adapted from Sugiyono (2012) to develop multimodal literacy-based digital materials for English reading texts for vocational high school students. The study was conducted at a vocational high school in Cirebon involving two English teachers and four eleventh-grade students majoring in Office Management. The participants were selected purposively because they were directly involved in English reading learning activities and were considered capable of providing relevant information regarding students' learning needs and classroom conditions (Creswell, 2012). The research procedures consisted of four main stages: identifying problems and students' needs, collecting data, designing the product, and validating and revising the developed product.

The data were collected through semi-structured interviews with teachers and students. Semi-structured interviews were used because they allowed the researcher to obtain detailed and flexible responses while maintaining focus on the research objectives (Creswell, 2012). The interview questions focused on students' reading comprehension problems, the use of learning materials in the classroom, students' engagement during reading activities, and the integration of digital resources into English learning. The interviews were conducted individually and recorded using a voice recorder to ensure the accuracy of the collected data. The recorded interviews were then transcribed for further analysis.

Based on the findings of the needs analysis, the researcher developed multimodal literacy-based digital materials in the form of a website and an e-book entitled English at the Office. The developed materials focused on adjective phrases within workplace communication contexts and integrated multimodal elements such as written texts, images, instructional videos, QR codes, and practice activities. The website provided several features, including learning resources, contextual reading texts, educational blogs, and supplementary learning materials that could be accessed through mobile devices and computers. The integration of multimodal elements into digital learning materials can support students' engagement and comprehension in English learning (Sahiruddin et al., 2025; Mumrikoh et al., 2023).

The developed product was validated by two English teachers to evaluate its feasibility, clarity, appropriateness, and design quality. The validators assessed the product based on learning aspects, content and language aspects, and digital and design aspects using a validation checklist. The validation results were analyzed descriptively using percentage calculations to determine the validity level of the developed product. The product achieved a validation score of 94.7%, which was categorized as "very valid," indicating that the multimodal literacy-based digital materials were feasible for use in English reading learning activities.

The interview data were analyzed using the interactive model proposed by Miles et al. (2014), which consists of data condensation, data display, and conclusion drawing or verification. During the data condensation stage, important information from the interview transcripts was selected, coded, and categorized based on themes related to students' needs and multimodal literacy-based digital materials. The data were then organized into descriptive narratives to identify patterns and relationships among participants' responses. Finally,

conclusions were drawn and continuously verified by rechecking the interview data and comparing participants' responses to ensure the consistency and trustworthiness of the findings.

## FINDINGS & DISCUSSION

### Students' Needs for Multimodal Digital Materials

The findings of the needs analysis revealed that vocational high school students still experienced difficulties in understanding English reading texts because the learning materials used in the classroom were mostly traditional and text-based. Teachers stated that the available textbooks were often less relevant to vocational school contexts, so they frequently modified and adapted the materials according to students' needs. One teacher explained:

*"The texts may still use senior high school texts, but we add some supplements, or we only take the theme, and then we create the texts ourselves, adjusted to the needs of vocational high school students." (T1)*

This finding indicates that existing learning materials were considered insufficient to support vocational students' reading comprehension effectively. Therefore, teachers needed more contextual and flexible learning resources that aligned with students' learning needs and vocational backgrounds.

The interview results also showed that multimodal elements such as videos, images, and audio helped students understand reading materials more easily. Teachers believed that reading texts should not only consist of written texts but should also integrate visual and audiovisual elements to stimulate students' understanding and engagement. One teacher stated:

*"Reading texts should not only be in the form of written texts, but should be multimodal, supported by images or diagrams." (T1)*

Students similarly expressed those videos and audio supported their comprehension of English reading materials. One student commented:

*"If there is audio, I listen to it first, then I read it so I understand better." (S2)*

These findings suggest that multimodal literacy can support students' reading comprehension by helping them interpret information through multiple modes of communication. This finding is consistent with Sahiruddin et al. (2025), who found that multimodal literacy-based learning improved students' engagement and understanding in English learning. Similarly, Mumrikoh et al. (2023) reported that multimodal e-books increased students' motivation and participation in reading activities. In addition, Parcalabescu et al. (2021) explained that multimodal learning enables students to process information more interactively through the integration of visual, textual, and audiovisual modes.

In addition, students preferred digital learning materials that were simple, flexible, and accessible through mobile devices. Students explained that digital materials could be accessed anytime and anywhere, which supported independent learning. Teachers also emphasized that digital learning materials should match students' conditions and school facilities. These findings indicate that accessibility and simplicity are important aspects in developing digital learning materials for vocational high school students.

## Development of Multimodal Literacy-Based Digital Materials

Based on the findings of the needs analysis, the researcher developed multimodal literacy-based digital materials in the form of a website and an e-book entitled English at the Office. The product was developed to support eleventh-grade students majoring in Office Management in learning English reading texts related to workplace communication. The materials focused on adjective phrases and integrated multimodal elements such as written texts, images, videos, QR codes, and practice activities.

The development of the product was based on students' and teachers' needs regarding contextual and accessible learning materials. One teacher stated:

*"Reading text is not just reading text, but multimodal, accompanied by pictures and diagrams." (T1)*

Similarly, students expressed their preference for accessible digital learning materials. One student commented:

*"If e-books can be found on the internet, they can be opened anywhere." (S1). Another student also stated: "It's easier to use a cell phone... so I prefer to use a cell phone." (S2)*

These findings indicate that students needed digital learning materials that were simple, flexible, and accessible through mobile devices. Therefore, the researcher developed a website-based learning platform integrated with an e-book to facilitate students' independent learning. This finding supports Mumrikoh et al. (2023), who explained that digital learning materials such as e-books can increase students' learning flexibility and engagement. In addition, Utama et al. (2023) found that multimodal digital materials integrating audio, videos, and interactive elements could improve students' motivation and digital literacy skills.

The website was designed with several menus, including Home, Learning Resources, Educational Blog, and Contact. The Home page introduced the learning platform and provided information about the learning objectives and available materials.

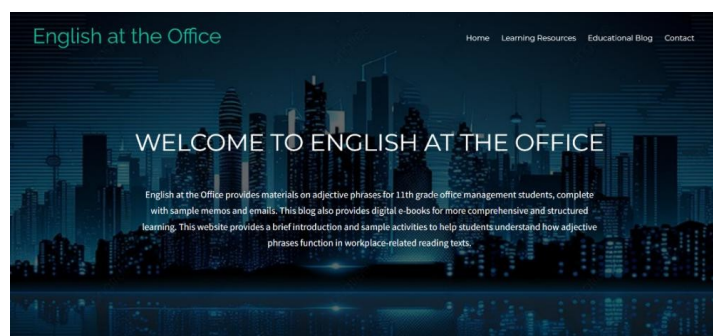


Figure 1. Homepage of English at the Office Website

The Learning Resources page provided access to the digital e-book, reading texts, and supporting learning materials related to adjective phrases in workplace communication.



Figure 2. Learning Resources Page

In addition, the website included an Educational Blog containing supplementary explanations, instructional videos, and review exercises. The integration of videos and visual elements was intended to support students' comprehension and engagement during reading activities. This finding is consistent with Sahiruddin et al. (2025), who found that multimodal literacy-based learning improved students' understanding and participation in English learning activities.

The developed e-book also integrated multimodal elements such as contextual reading texts, visual representations, QR codes linked to videos, reflection activities, and glossaries. The materials were contextualized within English for Specific Purposes (ESP) to ensure that the content was relevant to workplace communication contexts.



Figure 3. E-book Cover

The integration of multimodal elements into the website and e-book demonstrates that digital learning materials can support students' reading comprehension by combining written texts with audiovisual and contextual learning resources. The developed product also provided students with opportunities to access learning materials more flexibly and independently compared to conventional printed materials.

### **Validation of the Developed Product**

After the product development process was completed, expert validation was conducted to evaluate the feasibility of the developed digital learning materials. The validation process involved two English teachers who assessed the product based on learning aspects, content and language aspects, and digital and design aspects. The results of expert validation are presented in Table 1.

Table 1. Expert Validation Results

| No. | Aspect             | Validator 1 | Validator 2 | Maximum Score |
|-----|--------------------|-------------|-------------|---------------|
| 1   | Learning Aspect    | 38          | 39          | 40            |
| 2   | Content & Language | 35          | 32          | 35            |
| 3   | Digital & Design   | 30          | 25          | 30            |

The validation results showed that the developed product achieved a score of 94.7%, which was categorized as "very valid." This result indicates that the website and e-book were considered appropriate and feasible for supporting English reading learning for vocational high school students. The validators considered the developed materials relevant to students' learning needs and suitable for classroom implementation.

These findings indicate that multimodal literacy-based digital materials can function as effective alternative learning resources for vocational high school students. The integration of multimodal elements such as visuals, videos, and contextual reading texts can help students engage more actively in reading activities and improve their understanding of English learning materials. In addition, the findings suggest that multimodal digital learning materials can support teachers in providing more interactive and meaningful English learning experiences in vocational classrooms.

### **CONCLUSION**

This study found that vocational high school students and teachers need English reading materials that are engaging, accessible, and relevant to students' vocational contexts. The findings revealed that students experienced difficulties in understanding English reading texts when learning materials relied only on written texts without multimodal support. Both teachers and students emphasized the importance of integrating multimodal elements such as images, videos, audio, and contextual workplace texts to support reading comprehension and learning engagement. In addition, students preferred digital learning materials that were flexible, simple, and easily accessible through mobile devices.

Based on these needs, this study developed multimodal literacy-based digital materials in the form of a website and an e-book entitled English at the Office. The developed materials

integrated multimodal elements, including written texts, visual representations, instructional videos, QR codes, and practice activities related to adjective phrases in workplace communication contexts. The expert validation results showed that the developed product achieved a score of 94.7% and was categorized as “very valid,” indicating that the product was feasible for use in English reading learning for vocational high school students.

Overall, this study implies that multimodal literacy-based digital materials can support students’ reading comprehension, increase learning engagement, and provide more contextual and meaningful English learning experiences for vocational high school students. However, this study involved a limited number of participants from one vocational high school. Therefore, future research is recommended to involve broader participants and develop multimodal digital materials for other English language skills and learning contexts.

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