

Prototype of English reading teaching materials based on the HyFlex model



Oktariyani Oktariyani^{1,*}, Ratna Dewanti², Yumna Rasyid²

¹Postgraduate Program, Applied linguistics, Universitas Negeri Jakarta, Jakarta, Indonesia

²English Department, Faculty of Languages and Arts, Universitas Negeri Jakarta, Jakarta, Indonesia

ARTICLE INFO

Article history:

Received 19 April 2024

Received in revised form

23 August 2024

Accepted 29 October 2024

Keywords:

HyFlex (hybrid flexible) approach

Digital learning materials

English reading skills

Vocational education

Thematic and content analysis

ABSTRACT

In recent years, the use of digital learning materials has made foreign language education more engaging, interactive, and effective. This study aims to develop English reading materials using the HyFlex (hybrid flexible) approach for teaching English reading as a foreign language. The study seeks to promote the use of digital teaching materials in this area and improve teachers' ability to design flexible learning resources. To achieve this, a HyFlex-based prototype of learning materials was created and evaluated using a structured development approach. This prototype is available to vocational English teachers and accounting students. It includes modules with materials and worksheets designed for flexible learning. Data collection involved interviews and observations with English teachers and vocational students in Indonesia. The study used thematic and content analysis to process the data. The development of this English reading material prototype requires further study to improve its flexibility and readiness for use by vocational accounting students in Indonesia.

© 2024 The Authors. Published by IASE. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

The utilization of digital learning resources has experienced a notable rise in foreign language education in recent decades. However, it is apparent that the utilization of digital learning materials in the instruction of English as a foreign language (EFL) is insufficient and ineffective (Zhang and Dong, 2024). Digital learning materials are widely recognized as a vital asset for facilitating the acquisition and instruction of foreign languages, both within traditional classroom settings and beyond. The provision of audio-visual materials facilitates an alternative learning and teaching environment, enhancing the effectiveness of instructional delivery (Zhu et al., 2024). It is well recognized that there is a necessity to address this disparity by offering resources for the creation of digital educational materials in the field of EFL. Currently, there is a growing focus on foreign language education and teacher training in this domain, both domestically and internationally. This heightened attention can be attributed to the effects of globalization and

advancements in communication technology, which have led to an increased demand for foreign language acquisition. According to Alves Fernandes et al. (2016), the fundamental components of foreign language are rooted in contemporary notions of globalization, communication, intercultural communication, language planning, and language policy. The current state of education shows that English is the most widely used foreign language worldwide. This widespread use of English is linked to globalization, as noted by Kung (2019), and the enforcement of national language policies. In Indonesia, there is a strong emphasis on foreign language education, especially the teaching of EFL.

Given the context, the significance of EFL emerges as a matter of inquiry. English holds a significant position in the realm of languages due to its extensive geographical reach and the substantial number of speakers globally, including in Indonesia. There is a need for English language acquisition among diverse populations in Indonesia. The need for this has experienced a notable upsurge in recent years due to the nation's imperative for enhanced international affiliations inside a global framework.

The researchers have also identified the issue pertaining to the insufficiency of effective and suitable materials for EFL as a significant concern that impacts the quality of the instructional process. The prevailing viewpoint among scholars is that existing instructional resources are inadequate for facilitating an optimal pedagogical experience.

* Corresponding Author.

Email Address: oktariyani.yani@gmail.com (O. Oktariyani)

<https://doi.org/10.21833/ijaas.2024.11.013>

Corresponding author's ORCID profile:

<https://orcid.org/0000-0001-8551-8359>

2313-626X/© 2024 The Authors. Published by IASE.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

According to [Atkinson \(2021\)](#), a prominent contention is that the dearth of high-quality instructional resources constitutes a primary factor contributing to the challenges encountered by EFL students in Western European nations. According to [Bouckaert \(2016\)](#), there is a significant emphasis on the importance of developing teaching materials that consider the specific needs and characteristics of learners when it comes to instructing English to students studying EFL in Indonesia. Furthermore, an additional concern that should be addressed is the inadequate utilization and rare incorporation of technological resources within the educational context. In their study, [Glas et al. \(2023\)](#) examined the utilization of technology-based instructional materials and observed that contemporary foreign language education effectively incorporates technological resources, but their integration remains limited in the context of foreign language teaching. In a similar vein, [Yasmin et al. \(2016\)](#) underscored the importance of collaborative development of instructional materials among EFL teaching institutions while also highlighting the need for increased emphasis on online teaching platforms. Technological resources play a significant role in the realm of foreign language instruction, as they do in numerous other disciplines.

According to [Youde \(2018\)](#), the utilization of Internet technology offers learners the chance to conveniently access valuable language resources and engage in communication with individuals who are native speakers of the language. Furthermore, the utilization of the internet and e-learning platforms augments the development of students' abilities to engage in both synchronous and asynchronous forms of communication. [Austin and Turner \(2020\)](#) presented an examination of actual language usage. According to [Callan et al. \(2015\)](#), they facilitated the use of the target language in authentic communication settings ([Jones and Bennett, 2017](#)). The utilization of the internet and e-learning platforms is seen as a significant means for fostering language proficiency, as they present novel avenues for language instruction by including genuine resources and facilitating immersive and authentic learning settings ([Philipsen et al., 2022](#)).

Numerous literary works showcase various models of digital teaching materials employed in language instruction, with one notable example being the HyFlex (hybrid flexible) paradigm. Research has indicated that the implementation of HyFlex necessitates meticulous strategic preparation and meticulous architectural development ([Grammens et al., 2022](#)). According to [Beatty \(2019\)](#), educators are required to develop instructional materials and assignments that are effective in both traditional classroom environments and virtual learning platforms. Frequently, the process entails utilizing a learning management system (LMS) or other online platform for the dissemination of course content ([Padilla Rodriguez, 2022](#)). The presence of dependable technology is a crucial component for the successful implementation of HyFlex learning, as

emphasized by [Dowling et al. \(2003\)](#). It is imperative that both educators and learners possess the essential hardware and software components to facilitate their engagement in online activities. The study conducted by [Keiper et al. \(2021\)](#). This includes the provision of internet connectivity, electronic devices, and any specialist software or tools necessary for the purpose of acquiring knowledge and facilitating the efficient management of information. Additional empirical research supports the notion that HyFlex should also consider the physical classroom environment ([Liu and Rodriguez, 2019](#)). It is imperative to ensure that both face-to-face and online meetings are equipped with appropriate technological tools that facilitate and enhance student engagement and involvement. The technological tools encompass cameras, microphones, and interactive whiteboards. According to [Merisuo-Storm and Soininen \(2014\)](#), it is imperative for instructors to possess a level of comfort and proficiency in utilizing these technologies.

Given the concerns, it is widely acknowledged that further investigation is warranted to enhance the pedagogical practices and educational outcomes in the domain, with the aim of meeting the demands of modern foreign language instruction methodologies. One field of scholarly investigation in this context appears to involve the development of HyFlex-based instructional and learning resources, the proficient utilization of these pedagogical materials in both online and in-person settings, and the cultivation of pertinent teacher proficiencies. Given the context, the objective of this research is to create educational resources for English language instruction, specifically focusing on reading skills in a HyFlex environment. These materials will enable educators to provide students with the opportunity to exercise flexibility in their learning approach, allowing them to decide whether to attend classes physically, participate remotely, or alternate between the two based on their individual requirements. This technique can be especially advantageous in scenarios when students exhibit diverse preferences, have scheduling issues, or face constraints that hinder their ability to participate in face-to-face classes on a full-time basis.

2. Method

This article contains findings derived from a three-month study conducted with the objective of constructing a design model for English reading learning modules tailored to SMK accounting majors in Indonesia. The evidence gathered was carefully assessed, interpreted, and then discussed. The data for this study were obtained through a combination of observations and interviews conducted inside SMK schools located in the Tangerang district of Indonesia. The study presents qualitative findings and introduces a prototype for English language acquisition based on the HyFlex model. The research methodology is shown in [Fig. 1](#) which illustrates a

cyclical process for developing and evaluating teaching materials, emphasizing an iterative approach to instructional design. The process begins by defining learning objectives, which outline what students should achieve by the end of a course or module. A prototype of teaching materials is then created to align with these objectives, followed by an evaluation to ensure their effectiveness in delivering content. The cycle includes mapping sources of teaching materials, such as textbooks or online resources, and conducting diagnostic analyses to identify gaps in students' knowledge. Needs analysis

ensures the materials meet learners' requirements, while situational analysis considers factors like the learning environment and available resources. Students' interests and talents are analyzed to incorporate engaging content and personalized approaches, while their attitudes toward learning are assessed to foster positive engagement. This iterative cycle continuously refines teaching materials, ensuring they remain effective, engaging, and aligned with students' needs and educational goals.



Fig. 1: Research procedure

2.1. Data collection

The author employs two distinct methodologies for gathering data, specifically on-site observation and in-depth interview procedures. Qualitative research methods yield significant textual and graphical data that are expressed through human emotions and experiences. Hence, it is widely acknowledged that individual interviews are deemed more suitable in comparison to alternative qualitative research methodologies, such as focus group approaches. The author also acknowledges that focus groups are not appropriate for this study due to several reasons. The interviews were done within the context of classroom lessons. Consequently, authorization was provided to conduct interviews with individual students to minimize any disruption to the ongoing lecture. Furthermore, the author's prior research revealed that certain students were consistently excluded from participation in focus group sessions. Subsequently, it was revealed that these students experienced a lack of comfort when it came to articulating their viewpoints in the presence of their other classmates. The author subsequently sought

guidance from an academic expert, a university professor specializing in the field of vocational English study. The proposed recommendation entailed the implementation of in-person research methods to establish a sense of trust among the students, hence facilitating enhanced self-expression and confidence. Furthermore, given that qualitative data places emphasis on personal preferences and opinions regarding the learning environment, individual interviews are deemed more advantageous than group interviews. Furthermore, comprehensive statistics and contextual information are derived from individual interviews. The utilization of individual interviews will provide a comprehensive investigation and acquisition of deep insights necessary to scrutinize and reveal the fundamental characteristics of HyFlex-based English learning materials designed for vocational accounting majors.

The on-site observations encompassed all students in their second year, whereas the in-depth interviews were only administered to a specific group of students in year XII. Furthermore, supplementary data collection methods were employed to address the inherent constraints of

individual interviews. These included engaging in conversations and conducting brief interviews with a carefully chosen sample of teachers, school principals, and curriculum experts, thereby including diverse perspectives and sources of information. The inclusion of supplementary data served to bolster and elucidate the findings derived from the interviews conducted with the students. The study involved the collection of nonstationary observations within indoor environments, specifically classrooms. In addition, the author amassed a substantial quantity of field notes, films, and images to document spatial data pertaining to the actions of the pupils.

The following are some of the procedures we carried out in collecting data:

- a) In-depth Interview. Conduct in-depth interviews with teachers and students to understand the needs and challenges in the teaching and learning process. One of the questions we asked was: "What difficulties do you face in understanding the lesson material?" "How do you usually learn new material?"
- b) Class Observation. Observing interactions between teachers and students in the classroom to see how teaching materials are currently being used. Record activities, teaching methods, and student responses to the material taught.
- c) Document Analysis. Collect and review documents such as syllabi, learning implementation plans (RPP), and existing teaching materials. Next, we identify the strengths and weaknesses of the existing teaching materials.
- d) Open Questionnaire. Distribute open questionnaires to students and teachers to get input about their needs and expectations for teaching materials. Questions asked: "What material do you think needs to be explained more in teaching materials?" and "What makes you interested or bored when studying?"

2.2. Data analysis

The entirety of the interviews was captured by audio recording and afterward converted into written form through transcription. The transcripts underwent content analysis in conjunction with field notes, films, and student images. The analytical procedure was conducted under the guidance of critical theme analysis and content analysis, as outlined by [Widodo and Ferdiansyah \(2018\)](#). The methodology encompassed the examination of pertinent segments within the transcripts and field notes to ascertain recurring words, phrases, or sentences. The utilization of this open coding technique resulted in the reduction of the database to a more compact size, hence facilitating the creation of significant categories of information that are substantiated by the text authored by [Alves Fernandes et al. \(2016\)](#). The presence of shared themes facilitated the development of a core phenomenon, which served as the focal point for

organizing associated sub-categories ([Creswell, 2012](#)). Subsequently, an examination of the database was conducted to gain a deeper understanding of the coding categories that elucidated the core phenomenon. Upon the emergence of well-developed themes, the author proceeded to employ selective coding, focusing on generating statements and propositions that establish connections among these themes. The author ensured the accuracy and validity of the descriptions and interpretations by engaging in peer review sessions with interested peers. Additionally, external audits were employed to periodically examine the research techniques and products.

The following is the data analysis procedure using critical thematic analysis tools that we carried out:

- a) Familiarization with Data. Reread the data that has been collected to understand it in depth. Record initial impressions and emerging ideas.
- b) Initial Encoding. Carry out the initial coding process by marking data segments that are relevant to the topic being studied. Use codes that are descriptive and relevant to the research questions.
- c) Theme Search. Collect the codes that have been identified and look for themes or patterns that emerge from the data. These themes will answer the research questions and reflect the deeper meaning of the data.
- d) Theme Review. Review the themes that have been identified to ensure that they truly represent the data. Combine or separate themes as necessary to better reflect existing data.
- e) Definition and Naming of Themes. Define each theme clearly and give it a name that reflects the essence of the theme. Ensure each theme has a clear focus and supports the development of teaching materials.
- f) Writing and Interpretation. Write an analysis report explaining each theme, supported by quotes from relevant data. Interpret how these findings can be used to develop or improve teaching materials.

After analyzing the data using thematic analysis, the development of teaching materials was carried out using the following procedure:

- a) Integrating Findings. In this case, the identified themes are used to develop content and teaching methods in teaching materials. Based on the results of the theme integration findings, it was found that students needed more visualization in the material, so the teaching materials developed had to add diagrams, pictures, or videos.
- b) Trial and Evaluation. Next, a trial of the teaching materials that have been developed is carried out with a small group of students and teachers. Collect feedback and evaluate the effectiveness of teaching materials based on user experience.

c) Revision and Implementation. Finally, revisions will be made based on feedback and evaluation. The. Then, implement the revised teaching materials in a wider class.

HyFlex theory is an educational model that allows students to choose between three learning modes: face-to-face, synchronous online, and asynchronous online. Applying HyFlex theory in the process of creating teaching materials requires flexible planning and design, as well as the use of technology to ensure that all learning modes can be accessed and integrated well. Below are the steps we took to see how the HyFlex theory is applied practically in creating teaching materials.

The first step is planning and designing teaching materials. At this stage, activities are carried out to identify learning objectives so that these objectives can be achieved through the three learning modes, namely face-to-face, synchronous, and asynchronous). Next, flexible content development for teaching materials is carried out. Includes learning videos, text modules, slide presentations, and additional reading materials. The final activity at this stage is designing learning activities, both face-to-face, synchronous online, and asynchronous online activities.

The second step is creating learning materials. For this step, learning materials include Learning Videos, which are video recordings of lectures or demonstrations that can be accessed by students at any time (asynchronous) and can be used in synchronous online sessions or in face-to-face classes. The next material is the Online Interactive Module. We create interactive modules using the LMS platform that supports independent learning. This module includes texts, quizzes, and other interactive activities. The third learning material is Digital Reading material.

The third step is the provision of facilities and technology, which includes LMS. Use LMS to manage and organize learning content, including assessment, discussion, and providing feedback. Next is the Video Conferencing Platform. Integrate a video conferencing platform (Zoom or Microsoft Teams) for synchronous online learning sessions. Another facility uses interactive tools (WA group discussion forums, blogs, etc.) that allow online student interaction.

The fourth step is the implementation of learning, which involves face-to-face sessions, online synchronous learning (using platforms like Zoom, Google Meet, or Microsoft Teams), and online asynchronous learning through LMS.

The fifth step is evaluation and assessment. This includes continuous assessment conducted through formative methods such as online quizzes, weekly assignments, and group projects, applicable to all learning modes. Regular feedback is provided through LMS, email, face-to-face meetings, or synchronous online sessions. Finally, the process concludes with a final assessment, which can be

conducted either face-to-face or online, depending on the student's preferences and circumstances.

The sixth step is reflection. This reflection stage includes self-reflection by collecting feedback from students regarding the effectiveness of teaching materials and their learning experiences in the three learning modes.

3. Result

3.1. Learning outcome mapping results

Learning outcomes represent the competencies that learners are expected to achieve at each stage of the learning process. For English subjects, the desired outcomes progress from Phase A to Phase F (refer to Table 1 for details on the English phases). The components of the English subject are outlined in Table 2.

Table 1: English subject phases

Phase	Classes and levels in general
A	Grade I-II elementary school/package A program
B	Grade III-IV elementary school/package A program
C	Grade V-VI elementary school/package A program
D	Grade VII-IX junior high school/package B program
E	Grade X senior high school/ vocational school /package C program
F	Grade XI-XII senior high school/ vocational school /Package C Program

Table 2: English subject elements

Element	Descriptions
Reading	The ability to understand, use, and reflect on texts according to their purpose and interests, to develop knowledge and potential accordingly so that they can participate in society

In general, English learning in Phase E and F (SMA/MA/Package C program) focuses on strengthening oral and written language with CEFR B1 target.

Phase F is typically designed for students in grades XI and XII of SMA/MA/SMK/MAK/Package C programs. During the culmination of Phase F, learners engage in the production of oral, written, and visual texts in the English language, with the intention of effectively communicating in accordance with the specific context, objective, and target audience. In this phase of English language learning, many text kinds, including narration, description, exposition, method, argumentation, discussion, and authentic texts, serve as the primary sources of reference. Learners utilize English as a means of engaging in discussions and articulating desires and emotions. Learners employ their English language proficiency to examine an assortment of textual materials across diverse contextual domains. Individuals engage in the act of reading written texts with the dual purpose of acquiring knowledge or information as well as deriving enjoyment or satisfaction from the experience. The user's comprehension of the written word becomes more profound. The ability to make inferences is inherent in the process of comprehending information, while the capacity to evaluate various forms of English

texts is in the process of maturation. The individuals can generate organized oral, written, and visual compositions in the English language, exhibiting an expanded lexicon. Learners demonstrate the ability to create a diverse range of written and visual texts, encompassing both fictional and non-fictional genres

while being cognizant of their intended purpose and target audience.

Table 3 outlines the expected reading skills for learners at Phase F (Grade XI-XII of Senior High School or Vocational School) within the context of their education.

Table 3: Phase F learning achievements based on elements

Element	Phase F
Reading	At the end of Phase F, learners independently read and respond to a variety of texts, such as narration, description, exposition, procedure, argumentation, and discussion. They read to learn things and read for pleasure. They search for, synthesize, and evaluate specific details and the gist of a wide variety of text types. These texts can be print or digital, including visual, multimodal, or interactive texts. They demonstrate an understanding of the main idea, issues, or plot development in a variety of texts. They identify the author's purpose and make inferences to understand the implied information in the text

3.2. Diagnostic assessment results

A first observation was conducted at a selected SMK (Vocational High School) inside the Tangerang district on the 23rd of July 2022. The observed activities encompassed student engagement, attentiveness, adherence to rules, and completion of assignments. The activities that were conducted involved the distribution of English text pertaining to narrative paragraphs among the pupils. The participants observed in this study consisted of 20 students from classes X and XI. The findings of this study indicate that, in terms of student activeness, around 90% of the participants may be categorized as actively engaging in following and attending to the directions provided by the teacher. Students also engage in the proactive practice of seeking clarification regarding instructions that may be unclear to their peers. In terms of student attention, it is seen that around 80% of students exhibit a high level of engagement and compliance when presented with English texts. These students demonstrate enthusiasm in following the instructions provided by the teacher and exhibit a calm and attentive demeanor while engaging with the assigned reading material. In terms of the discipline category, many students, specifically 60%, demonstrated punctuality by attending English courses on time. In the context of the assignment category, it was seen that several students failed to document the salient aspects presented in the reading material. Their approach involved only reading the text without comprehending the meaning of the words or sentences encountered. The individuals exhibit challenges when it comes to responding to inquiries pertaining to the subject matter of the assigned reading. During the researcher's observation, they did not own an English dictionary. The approach employed involved accessing their individual Android devices and utilizing the Google Translate program to ascertain the significance of the reading material. To respond to the questions provided, the user employed Google Translate to facilitate the translation process.

The provided narrative paragraphs comprised two paragraphs, with a combined word count of 204 words. We sought to ascertain the extent of their lexical comprehension. Based on the findings derived from these observations, it is evident that the

individuals under study possess a limited comprehension of merely 15 terms, necessitating the utilization of Google Translate for assistance with the remaining vocabulary. Based on the findings of this study, the researcher deduces that the English reading comprehension proficiency of class XI SMK students is significantly deficient.

Furthermore, the findings of the documentation study shed light on the correlation between the learning outcomes of vocational students and their proficiency in reading English. In this instance, the researcher conducted a sampling procedure at a vocational institution situated in Tangerang City. The study revealed that the mean score obtained by Grade X students was approximately 60. Upon examining individual results, it was observed that out of a total of 74 students, only 28 students, or approximately 37.83%, were able to meet the Minimum Completeness Criteria. Conversely, the remaining 46 students fell below the minimum criteria. Based on the range of scores received, it can be observed that 13 students, which accounts for approximately 17.56% of the total, achieved high scores within the range of 85-100. In the interim, a total of 15 students, constituting 20.27% of the sample, achieved a moderate score falling within the range of 70-80. Out of the total student population, the remaining 46 students, accounting for 62.16% of the cohort, achieved low scores within the range of 10-65.

Additionally, interviews were held with English teachers and students from class XI SMK. From the students' perspective, a common challenge faced by teachers in the instruction of reading is the prevalent deficiency in English vocabulary among approximately 80% of the pupils in the class, as reported by teachers. Individuals may encounter difficulties in comprehending the material presented in the reading and effectively responding to challenging questions. The findings from interviews conducted with students indicate that, on average, pupils encounter challenges in comprehending English reading material due to their limited vocabulary. To comprehend the contents of the reading, it is advisable to utilize resources such as Google Translate or a dictionary for assistance. However, the examination process is a challenge as students are prohibited from utilizing dictionaries or mobile phones. Consequently, students who struggle

to comprehend the reading material may hastily respond to reading-related inquiries.

Based on the diagnosis findings, it is deduced that the development of English reading materials incorporating specific attributes to enhance students' English vocabulary is imperative. This will facilitate students' comprehension of the English reading materials they are studying. Another issue that arises is the lack of engaging media utilized by educators, resulting in decreased student interest in the subject of reading. Hence, it is imperative to incorporate visually appealing media in the development of instructional materials, along with the latest advancements in information technology.

3.3. Results of student needs analysis

Based on the findings derived from the observations and interviews, which encompassed interviews with English educators, school administrators, and students, the findings pertaining to the assessment of the educational requirements of vocational students in relation to English literacy acquisition are acquired. The English reading learning requirements for students in Vocational High Schools (SMK) can differ based on their specific levels of competence and objectives. Nonetheless, it is imperative to address some overarching educational requirements to facilitate the enhancement of English reading proficiency among vocational students.

Firstly, the topic of discussion pertains to the formation of vocabulary. A significant number of vocational students encounter challenges due to their constrained English vocabulary. It is imperative to provide individuals with opportunities to encounter a diverse range of vocabulary and expressions that are pertinent to their developmental stage and personal preferences. The process of enhancing one's vocabulary should encompass the acquisition of both academic and colloquial language. Furthermore, the development of comprehension abilities is of utmost importance. It is vital for vocational pupils to cultivate proficient reading comprehension abilities. This encompasses the capacity to comprehend major concepts, deduce implications from the surrounding context, recognize corroborating particulars, and establish relationships among various segments of the text. Next, let us discuss reading strategies. It is imperative to provide kids with a diverse range of reading strategies in the educational setting. Various tactics can be employed, such as prediction, questioning, summarization, and establishing connections. It is imperative for students to possess knowledge of the appropriate timing and methodology for implementing these tactics during the act of reading. Additionally, the fourth aspect to consider is reading fluency. The ability to read fluently is crucial for the process of comprehension. It is imperative to provide vocational students with comprehensive training in pronunciation, intonation, and reading speed to facilitate the development of

fluent and comprehensible reading skills. Furthermore, an important aspect to consider is the classification of literary works into different genres and text kinds. It is imperative that vocational students are provided with a diverse range of textual forms and genres, encompassing but not limited to fiction, non-fiction, poetry, and instructional texts. It is vital to comprehend the distinctive attributes associated with each sort of text. Furthermore, an additional aspect to consider is the need for critical thinking. It is of paramount importance to foster critical thinking skills among pupils during the process of reading. Individuals should possess the capacity to critically analyze written materials, assess the validity of arguments, and develop independent viewpoints informed by their reading.

Hence, when developing English reading instructional materials for vocational institutions, it is imperative to include the categories.

3.4. Analysis of students' learning attitudes in reading class

The learning dispositions exhibited by vocational students in reading classes possess distinct attributes. Both positive and bad learning mindsets exist. Students in the twelfth grade who possess a genuine affinity for and derive satisfaction from the assigned reading material are more likely to exhibit positive learning attitudes. These attitudes manifest in their eagerness to actively engage in the learning process, enthusiastically participate in class discussions by providing accurate responses to the instructor's queries, maintain a high level of attentiveness towards the presented material, demonstrate a desire to meticulously document the information, and display a willingness to diligently complete the assigned tasks provided by the teacher. This phenomenon can be attributed to the preference of students for reading materials that are both accessible and engaging, as well as their positive response to the instructional methods employed by teachers in the classroom. In contrast, students who possess a disinterest and dissatisfaction with the subject of reading often exhibit unfavorable learning dispositions, including a reluctance to engage in the learning process, passivity, diminished concentration, socializing with peers, and occasionally succumbing to drowsiness during instructional sessions.

Many students harbor a negative attitude towards reading material, expressing dissatisfaction and discontent due to their perception of its difficulty. Furthermore, it is worth noting that pupils harbor a certain level of dissatisfaction with the instructional methods employed by teachers during classroom sessions, resulting in a sense of ennui and disengagement with regard to English classes. The learning attitude of students in class XII at SMK is influenced by both internal and external variables. Internal factors refer to the factors that are inherent within the students themselves. These factors encompass physiological aspects, including the

physical condition of the students. Additionally, psychological factors, such as variations in student intelligence, attentiveness towards the teacher's instruction, interest in English lessons, and motivation to learn reading, are also considered internal factors. Furthermore, fatigue, resulting from physical exhaustion, and forgetting, stemming from low student memory, are additional internal factors that can influence the learning process. External factors refer to various elements that exist outside the realm of the student's immediate influence. These factors encompass the family environment, which includes aspects such as the quality of parental relationships and economic conditions. Additionally, the school environment encompasses factors such as the instructional methods employed by teachers, the nature of relationships between teachers and students, disciplinary attitudes, and the physical condition of the school building.

The teacher's response to acknowledge students' positive learning attitudes includes offering verbal praise or congrats, providing tangible rewards, and awarding additional grades to those who have a positive attitude towards learning throughout reading instruction. The objective of this endeavor is to inspire fellow students to cultivate a more positive disposition toward learning. In addressing negative student learning attitudes, the teacher employs various strategies. Initially, the teacher offers guidance and advice to the students. If the teacher's advice proves ineffective, the teacher may seek assistance from the counseling guidance teacher. If these interventions fail to yield positive results, the teacher may opt to involve the student's guardian by requesting their presence at the school. Furthermore, in addition to implementing measures, educators also administer disciplinary measures, such as assigning students the task of collecting litter dispersed inside the school premises. The primary objective of the teacher's intervention is to facilitate a shift in the learning attitudes of students who exhibit negativity, encouraging them to adopt a more optimistic approach toward their educational endeavors. Several instructor behaviors that have been described demonstrate a good effect on students, namely, resulting in improved learning attitudes among students.

3.5. Development result of HyFlex-based English reading learning prototype

The design for HyFlex-based learning can be summarized as follows:

1. Technology: Reliable technology is essential for HyFlex learning. Teachers and students have access to the hardware and software required for online participation. This includes internet access, devices, and any specialized software or tools required for learning activities.
 - a. Classroom Setup: Face-to-face classrooms are equipped with technology to support both in-person and online participation, such as cameras,

microphones, and interactive whiteboards. Teachers should be proficient in using these tools effectively.

- b. Scheduling: Teachers create a clear schedule that outlines when face-to-face and online sessions will take place. Considering time zones if students are in different regions. Ensuring all students can access recordings or materials from sessions they may have missed.
2. Communication: Effective communication is essential in HyFlex learning. Teachers provide clear instructions, guidance, and expectations for both in-person and online students, utilizing tools such as email, discussion boards, or messaging platforms for regular interaction.
3. Assessment: Teachers develop appropriate assessment methods for students face-to-face and online. Consider a combination of assignments, quizzes, and exams that can be given in multiple formats.
4. Engagement: Foster a sense of community and interaction among students no matter what mode of participation they choose. Online discussion boards, group projects, and virtual office hours can help facilitate engagement.
5. Feedback and Evaluation: collect feedback from students throughout the course to assess the effectiveness of the HyFlex approach. Adjust based on their input and the teacher's own observations.
6. Support Services: Offer support services such as technical assistance, tutoring, and counseling to help students succeed in the HyFlex environment.

Fig. 2 illustrates the design of English reading learning materials tailored for vocational schools, specifically for accounting programs. It begins with Topic Mappings, where relevant subjects or themes are identified and organized to guide the content development. These topics inform the creation of the English Reading Materials Module, which serves as the main educational resource containing reading materials aligned with the mapped topics. A Worksheet complements this module by providing exercises and activities to reinforce learning. The materials are tailored to the specific needs of vocational accounting students, focusing on practical and relevant content. The six chapters outlined in the diagram address key topics, such as accounting careers, petty cash management, cash accounting in local government, and financial accounting information. Each chapter is designed to align with the vocational focus, ensuring that students gain practical knowledge and skills relevant to their field of study. Before implementing the English reading teaching materials, a pre-test was carried out in the classes designated for the English reading teaching materials. After the pre-test was carried out, the English reading teaching materials were applied. After learning, at the final meeting, a post-test was carried out, with the following results:

From the research results, students' pre-test and post-test scores were obtained with an average pre-

test score of 64.90% and a post-test of 83.60%. This value was taken from 20 students who took English subjects. The Standard Deviation value in the pre-test was 7.919, and the post-test was 3.267. Because the average pre-test < post-test score is 64.90 < 83.60, this means that descriptively, there is a

difference in the average pre-test and post-test scores in the learning outcomes of students who take part in learning using language reading teaching materials. English. For more details, see the following Table 4.

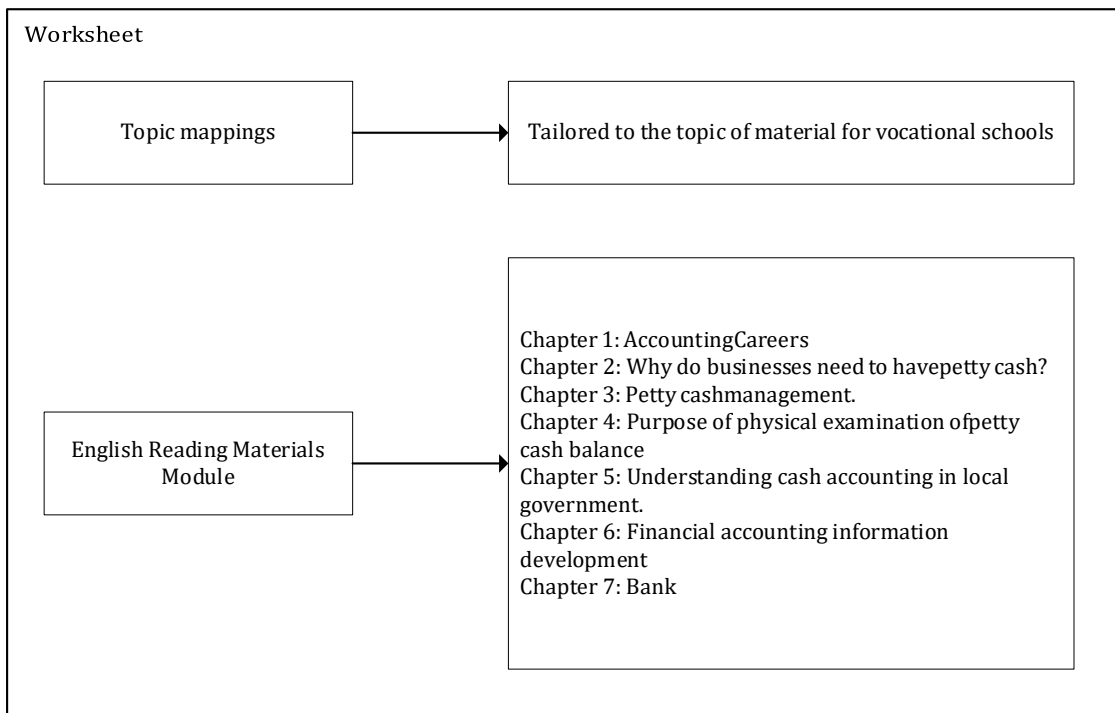


Fig. 2: Design of English reading materials for vocational accounting students, utilizing accounting-related themes to enhance language learning in a HyFlex environment

Table 4: Average pretest and post-test scores (paired samples statistics)

	Mean	N	SD	SEM
Pair 1	64.9000	20	7.91999	1.77096
Pre-test – Post-test	83.6000	20	3.26706	.73054

SEM: Standard error of the mean; SD: Standard deviation

Based on the results of the t-test presented in Table 5, the Sig. (2-tailed) value is 0.000, which is less than 0.005. With a degree of freedom (df) of 20, the t-table value is 2.085, while the t-calculated value is 10.402, which is greater than 2.085. Therefore, it

can be concluded that there is a significant difference between the average pre-test and post-test scores of students. This indicates that the English reading teaching materials are both significant and effective for use in English learning for accounting majors.

Table 5: Hypothesis test results (t-test)

	Mean	SD	SEM	95% CI_diff (L)	95% CI_diff (U)	t-statistic	df	Sig.
Pair 1	-18.7	8.04003	1.79781	-22.46285	-14.93715	-10.402	19	0.0
Pre-test – Post-test								

Sig.: Significance (2-tailed); df: Degrees of freedom; SD: Standard deviation; SEM: Standard error of the mean; CI_diff (L): Confidence interval of the difference (lower); CI_diff (U): Confidence interval of the difference (upper)

The effectiveness test results indicate a Sig. (2-tailed) value of 0.001, which is less than the threshold of 0.005. With a df of 20, the critical t-table value is 2.085. The calculated t-value of 10.402 exceeds this threshold, confirming a significant difference between the pre-test and post-test average scores of student learning outcomes. These findings demonstrate that the English reading teaching materials are both statistically significant and effective for supporting English language learning.

HyFlex-based English reading teaching materials have proven to be more effective than conventional

methods in enhancing students' reading skills. Students using the HyFlex model not only achieved greater improvements in test scores but also showed increased motivation and engagement in their learning process. Some input from students regarding the effectiveness of the material is as follows:

- Student 1 (MR):
 - Positive: "The video materials are very helpful. The explanations are clear, and I can revisit parts I don't understand."

- Suggestion: "Unstable internet makes it difficult to follow synchronous sessions. Adding more asynchronous materials that are accessible without a strong internet connection would be beneficial."
- Student 2 (AD):
 - Positive: "Forum discussions are very useful for asking questions to teachers and peers, which helps in understanding challenging texts."
 - Suggestion: "Response times in discussion forums are sometimes slow. Scheduling specific times when teachers are available online for questions would improve this."
- Student 3 (ST):
 - Positive: "Interactive activities like quizzes and games make learning enjoyable and increase my motivation."
 - Suggestion: "Some quiz instructions were unclear. Adding a tutorial at the beginning to explain how to use the interactive quizzes would help."
- Student 4 (BD):
 - Positive: "Live discussions via video conferencing are very effective for asking questions and receiving immediate answers."
 - Suggestion: "Finding a suitable time for everyone can be difficult. Offering multiple time options for synchronous sessions would make it more accessible."
- Student 5 (LN):
 - Positive: "Being able to access materials on my smartphone makes it convenient to study anywhere."
 - Suggestion: "Some videos do not play on my phone. Ensuring compatibility across all devices or using a more universal video format would resolve this issue."

The feedback from students highlights that the HyFlex-based English reading materials are effective in enhancing learning outcomes. Students appreciated the clarity and accessibility of the video materials, which allowed them to revisit the content for better understanding. Online discussion forums were noted as useful for interaction and clarification, while interactive quizzes and games increased motivation and made the learning process enjoyable. Live video conferencing was particularly effective for real-time discussions, enabling students to ask questions and receive immediate feedback. The flexibility to access materials on smartphones was also seen as a significant advantage, allowing students to study anytime and anywhere.

However, some areas require improvement to maximize the materials' impact. Students suggested adding more asynchronous, downloadable resources to address connectivity issues and introducing scheduled teacher office hours for quicker responses. Tutorials for using interactive tools, such as quizzes, were recommended to reduce confusion. Flexible time slots for live discussions and ensuring video compatibility across all devices were also proposed. Overall, while the materials are effective

and flexible, implementing these suggestions would enhance accessibility and inclusivity, improving the overall learning experience.

4. Discussion

Specific Technologies Used in HyFlex Models: The HyFlex model utilizes a variety of technologies to provide flexibility in learning, allowing students to choose between face-to-face, synchronous online (live), and asynchronous online (indirect) learning. Specific technologies used in HyFlex models include:

1. **Learning Management System (LMS).** LMS such as Moodle, Blackboard, or Canvas are used to manage learning content, assignments, and communication between students and teachers. LMS allows teachers to upload teaching materials, provide assignments, and evaluate student learning outcomes. Students can access these materials anytime and from anywhere.
2. **Video Conferencing Tools.** Platforms such as Zoom, Microsoft Teams, or Google Meet are used for synchronous online learning. Virtual face-to-face sessions are scheduled regularly, allowing for direct interaction between students and teachers. Recordings of these sessions are also uploaded to the LMS for later access.
3. **Discussion Forums and Chat Tools.** Discussion forums and chat tools on the LMS or other communication platforms are used to support communication and collaboration between students. Asynchronous discussions allow students to interact and discuss course material at a time that is convenient for them.
4. **Content Creation Tools.** Tools such as Microsoft Office 365, Google Workspace, and educational-specific software (e.g., Nearpod, Kahoot!) are used to create and share interactive learning materials. Teachers can create presentations, quizzes, and interactive exercises that students can access both synchronously and asynchronously.
5. **Assessment and Feedback Tools.** Evaluation tools such as Quizlet, Socrative, or the quiz feature in the LMS are used to assess student understanding. Teachers can provide direct and automatic feedback to students, as well as track their learning progress through the dashboard available in the LMS.

Technology accessibility is essential in the HyFlex model to ensure that all students can effectively engage with learning materials. Since not all students have reliable access to a computer or internet connection, schools could loan laptops or tablets and collaborate with internet service providers to offer affordable or free data packages for students. Learning resources should be compatible with various devices, including smartphones, and the use of responsive design in learning management systems (LMS) and content can ensure materials are easily accessible on different screen sizes and devices. Additionally, both

students and teachers may lack familiarity with the required technology, so it is important to provide initial training and ongoing technical support. Tutorials, webinars, and live help sessions can enhance their technical skills and improve the overall learning experience.

Technology integration in the HyFlex model requires a systematic approach to ensure learning materials are delivered effectively. This approach is biased by providing learning material that is divided into small modules that can be accessed independently. Each module can include learning videos, readings, quizzes, and interactive activities integrated into the LMS. Projects that integrate a variety of students' skills and knowledge. Projects can be undertaken individually or in groups, with technological support for online collaboration and presentation of project results. Students study basic material independently through videos or readings before synchronous face-to-face or online meetings. Synchronous face-to-face or online time is used for in-depth discussions, questions and answers, and active learning activities that strengthen student understanding.

Formative assessment uses online quizzes, assignments, and interactive activities. Teachers provide real-time or asynchronous feedback through the LMS, helping students to improve and understand the material more deeply. With a systematic approach and the right technology support, the HyFlex model can provide a flexible and effective learning experience for all students, improving their engagement and learning outcomes.

5. Conclusion

The importance of digital learning materials has witnessed a marked increase in the field of foreign language education; however, their efficacy in the context of teaching EFL is still not optimal. The growing phenomenon of globalization and the rapid advancement in scientific progress in the field of communication has resulted in an increased demand for mastering foreign languages, with special emphasis on English. The importance of EFL education in Indonesia has been highlighted, mainly due to the wide linguistic diversity of the country and the widespread use of English around the world. The scarcity of effective instructional resources is an important issue that significantly impacts the quality of pedagogical endeavors. One further concern relates to the limited utilization and infrequent use of technological resources in the context of educational instruction and acquisition. Internet technology provides learners with access to valuable language resources, facilitates communication with native speakers, and develops their abilities in both synchronous and asynchronous communication. Moreover, these technologies also facilitate the use of the target language in actual communication situations, thus encouraging authentic language use. Therefore, it is imperative to offer resources for the development of digital instructional materials

around EFL for SMK in Indonesia. In this case, it is a prototype of HyFlex-based English reading learning materials.

Acknowledgment

We extend our gratitude to BPI (Beasiswa Pendidikan Indonesia), LPDP (Lembaga Pengelola Dana Pendidikan) of the Ministry of Finance of the Republic of Indonesia, and BPPT (Badan Pembiayaan Pendidikan Tinggi), who have provided financial assistance to attend the conference and publish this article.

Compliance with ethical standards

Ethical considerations

Informed consent was obtained from all participants prior to their involvement in the study, and their confidentiality was safeguarded throughout the research process.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Alves Fernandes LM, Cruz Matos G, Azevedo D, Rodrigues Nunes R, Paredes H, Morgado L, Barbosa LF, Martins P, Fonseca B, Cristóvão P, de Carvalho F, and Cardoso B (2016). Exploring educational immersive videogames: an empirical study with a 3D multimodal interaction prototype. *Behaviour and Information Technology*, 35(11): 907–918. <https://doi.org/10.1080/0144929X.2016.1232754>
- Atkinson D (2021). The adaptive expertise of expert ELT textbook writers. *RELC Journal*, 52(3): 603–617. <https://doi.org/10.1177/0033688219893119>
- Austin R and Turner RN (2020). The role of blended learning for community cohesion: Lessons from Northern Ireland. *Technology, Pedagogy and Education*, 29(3): 361–376. <https://doi.org/10.1080/1475939X.2020.1756906>
- Beatty BJ (2019). Hybrid-flexible course design: Implementing student-directed hybrid classes. EdTech Books. <https://doi.org/10.59668/33>
- Bouckaert M (2016). Designing a materials development course for EFL student teachers: Principles and pitfalls. *Innovation in Language Learning and Teaching*, 10(2): 90–105. <https://doi.org/10.1080/17501229.2015.1090994>
- Callan VJ, Johnston MA, and Poulsen AL (2015). How organisations are using blended e-learning to deliver more flexible approaches to trade training. *Journal of Vocational Education and Training*, 67(3): 294–309. <https://doi.org/10.1080/13636820.2015.1050445>
- Creswell JW (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. 4th Edition, Pearson Education, London, UK.
- Dowling C, Godfrey JM, and Gyles N (2003). Do hybrid flexible delivery teaching methods improve accounting students' learning outcomes? *Accounting Education*, 12(4): 373–391. <https://doi.org/10.1080/0963928032000154512>

- Glas K, Catalán E, Donner M, and Donoso C (2023). Designing and providing inclusive ELT materials in times of the global pandemic: A Chilean experience. *Innovation in Language Learning and Teaching*, 17(1): 114–129.
<https://doi.org/10.1080/17501229.2021.1940187>
- Grammens M, Voet M, Vanderlinde R, Declercq L, and De Wever B (2022). A systematic review of teacher roles and competences for teaching synchronously online through videoconferencing technology. *Educational Research Review*, 37: 100461.
<https://doi.org/10.1016/j.edurev.2022.100461>
- Jones A and Bennett R (2017). Reaching beyond an online/offline divide: Invoking the rhizome in higher education course design. *Technology, Pedagogy and Education*, 26(2): 193–210.
<https://doi.org/10.1080/1475939X.2016.1201527>
- Keiper MC, White A, Carlson CD, and Lupinek JM (2021). Student perceptions on the benefits of Flipgrid in a HyFlex learning environment. *Journal of Education for Business*, 96(6): 343–351. <https://doi.org/10.1080/08832323.2020.1832431>
- Kung FW (2019). Teaching second language reading comprehension: The effects of classroom materials and reading strategy use. *Innovation in Language Learning and Teaching*, 13(1): 93–104.
<https://doi.org/10.1080/17501229.2017.1364252>
- Liu CYA and Rodriguez RC (2019). Evaluation of the impact of the HyFlex learning model. *International Journal of Innovation and Learning*, 25(4): 393–411.
<https://doi.org/10.1504/IJIL.2019.099986>
- Merisuo-Storm T and Soininen M (2014). Interesting reading materials and exercises encourage also reluctant boys to read. *Procedia - Social and Behavioral Sciences*, 116: 2583–2588.
<https://doi.org/10.1016/j.sbspro.2014.01.615>
- Padilla Rodriguez BC (2022). The rise and fall of the HyFlex approach in Mexico. *TechTrends*, 66(6): 911–913.
<https://doi.org/10.1007/s11528-022-00780-3>
PMid:36120499 PMCID:PMC9472182
- Philipsen B, Tondeur J, Scherer R, Pynoo B, and Zhu C (2022). Measuring institutional support for online and blended learning professional development: Validating an instrument that examines teachers' perceptions. *International Journal of Research and Method in Education*, 45(2): 164–179.
<https://doi.org/10.1080/1743727X.2021.1926973>
- Widodo HP and Ferdiansyah S (2018). Engaging student teachers in videomediated self-reflection in teaching practica. In: Kennedy KJ and Lee JCK (Eds.), *Routledge International Handbook of Schools and Schooling in Asia*: 922–934. Routledge, London, UK.
<https://doi.org/10.4324/9781315694382-89>
- Yasmin M, Sarkar M, and Sohail A (2016). Exploring English language needs in the hotel industry in Pakistan: An evaluation of existing teaching material. *Journal of Hospitality and Tourism Education*, 28(4): 202–213.
<https://doi.org/10.1080/10963758.2016.1226846>
- Youde A (2018). Andragogy in blended learning contexts: Effective tutoring of adult learners studying part-time, vocationally relevant degrees at a distance. *International Journal of Lifelong Education*, 37(2): 255–272.
<https://doi.org/10.1080/02601370.2018.1450303>
- Zhang Y and Dong C (2024). Exploring the digital transformation of generative AI-assisted foreign language education: A socio-technical systems perspective based on mixed-methods. *Systems*, 12(11): 462.
<https://doi.org/10.3390/systems12110462>
- Zhu T, Zhang Y, and Irwin D (2024). Second and foreign language vocabulary learning through digital reading: A meta-analysis. *Education and Information Technologies*, 29: 4531–4563.
<https://doi.org/10.1007/s10639-023-11969-1>