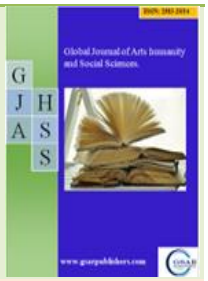
Global Journal of Arts Humanity and Social Sciences
ISSN: 2583-2034

Global Journal of Arts Humanity and Social Sciences
ISSN: 2583-2034
Abbreviated key title: Glob.J.Arts.Humanit.Soc.Sci
Frequency: Monthly
Published By GSAR Publishers
Journal Homepage Link: https://gsarpublishers.com/journal-gjahss-home/



Volume - 4 | Issue - 12 | Dec 2024 | Total pages 1093-1097 | DOI: 10.5281/zenodo.14414811

Designing A Differentiation Based Interactive E-Module For StudentsIndependent Learning Interest

BY

Susanti[1], Andi Sadapotto[2], Sam Hermansyah[3], Ibrahim Manda[4], Nuraeni Kasman[5]

[1,2,3,4,5]Education Studies, Universitas Muhammadiyah Sidenreng Rappang

Article History
Received: 01- 12- 2024
Accepted: 09- 12- 2024
Published: 11- 12- 2024

Corresponding author
Susanti

Abstract

This study aims to develop a writing e-module that suits the independent learning interests of high school students at UPTD SMAN 1 Kalukku, Mamuju Regency, West Sulawesi. Using the 4D model (Define, Design, Develop, Disseminate), researchers conducted interviews and needs analysis with students and teachers at the Define stage. The e-module was designed using "Liveworksheets" at the Design stage, validated by experts (language, material, and media) at the Develop stage, and revised based on student trials. At the Disseminate stage, a "Liveworksheets" account was created for teachers to freely access and edit the module. The results showed that the e-module met high standards: language (88.64%), material (75%), and media (92%) aspects. Student feedback showed 34% rated the e-module "Very Good" and 33% "Good." Developed by paying attention to the characteristics of a good module (self-instruction, self-contained, stand-alone, adaptive, and user-friendly), this e-module supports independent learning and was in accordance with the English curriculum for grade XI students in the first semester.

Keywords: E-module, Writing, Liveworksheets

Introductions

In the digital education era, interactive e-modules have become an essential tool to support students' independent learning. These modules were designed to accommodate a variety of learning styles and abilities, ensuring students can learn the material at their own pace and needs. Differentiation- based e-modules, in particular, offer customized learning experiences to encourage students' active participation and independence. This article discusses the development of a differentiation-based interactive e-module specifically designed for high school students' interest in independent learning at UPTD SMAN 1 Kalukku, Mamuju Regency. By integrating user-friendly and curriculum-aligned features, the e-module aims to bridge the gap between traditional and modern learning approaches, while encouraging academic achievement and independent learning skills. However, sometimes several things cause the learning process to not run smoothly, such as the teachers who were unable to attend the learning process or even the students. Thus, not a few we found learning materials not appropriately conveyed. Therefore, the researcher decided to create e-learning media to learn independently, with or without a teacher.

English syllabus for class XI at UPTD SMAN 1 Kalukku, Mamuju Regency, covers five main topics. These five topics involve student abilities write sentences or text, such as offers & suggestions, opinions & thoughts, descriptive text, analytical exposition text, narrative text and procedure text simple. Writing is quite difficult activity for students, especially since this skill is one of the most complex aspects of language to learn and teach. Based on interviews with the British. It is known that teachers at UPTD SMAN 1 Kalukku tend to have students. Difficulty in organizing ideas into text. Apart from that, they also have limitations in terms of vocabulary and grammar. Interview with several class XI students. Students also expressed that they felt their ideas were often limited and difficult to put it in good writing.

Several researchers study the same thing. First, Areta Areta et al (2018) developed an e-module that was used to meet the needs of students who required them to write reports in English after students took part in an internshipprogram. This module was in pdf format which was used by uploading and downloading it through the Edmodo application. The second was from Sucia et al (2019) which developed an electronic module based on discovery learning

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0).

writing explanation text for Indonesian language subjects. Then the third was from Anita (2021) who developed an electronic worksheet teaching material using the Liveworksheets application.

The novelty of this research lies in the development of differentiation- based interactive e-modules specifically designed to meet the self-learning needs of high school students at UPTD SMAN 1 Kalukku, Mamuju Regency. In contrast to e-modules in general, this research applies the concept of differentiation-that is, tailoring content to students' abilities, interests, and learning pace- to the digital learning platform, *liveworksheets*. The focus on writing skills, which was a complex and often neglected aspect of language learning in e-modules, adds value by providing structured interactive activities to address students' challenges in vocabulary, grammar and idea generation. In addition, this e-module was aligned with the grade XI English curriculum and meets the five characteristics of a good module (self-instruction, self-contained, stand-alone, adaptive, and user-friendly).

Literature Review E- Moduls

Interactive e-modules were a form of digital teaching material designed to support a more independent and flexible learning process. This module not only contains learning materials, but was also equipped with interactive elements, such as practice questions, quizzes, animations, and other visual media, which can increase student interest and involvement. According to Daryanto (2013), a good module must fulfill five main characteristics, namely self-instruction (can be learned independently), self-contained (complete material), stand-alone (not dependent on other media), adaptive (can be adjusted), and user-friendly (easy to use). In the context of English learning, interactive e-modules become a very useful tool to help students understand complex material, such as writing, in a more interesting and effective way.

Differentiated Learning

A differentiation-based approach aims to meet students' individual learning needs by customizing the content, process, product or learning environment based on their ability levels, interests and learning styles. According to Tomlinson (2001), differentiation-based learning allows students to learn according to their best potential, thus creating a more personalized and meaningful learning experience. In the context of e-modules, differentiation can be applied by providing a variety of tasks or activities tailored to students' ability levels, as well as providing flexibility in choosing the most comfortable way of learning. With this approach, e-modules were not only a learning tool, but also a means to develop students' independence and motivation.

Writing Skills in English Learning

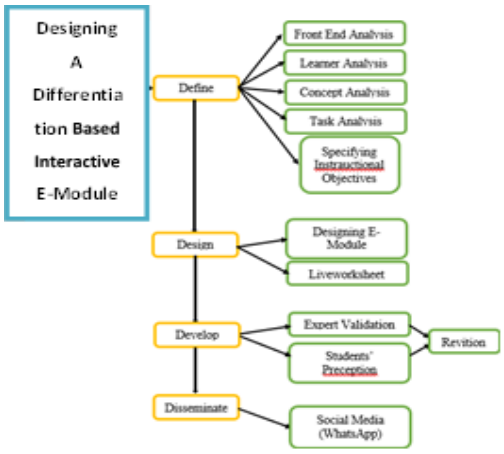
Writing is one of the most complex skills in English learning because it involves various aspects, such as organizing ideas, selecting vocabulary, and using correct grammar. According to Hyland (2003), writing skills require a deep critical thinking process to produce structured and meaningful texts. This challenge was often an obstacle for students, especially those learning a foreign language. Therefore, interactive e-modules specifically designed for writing skills can be an effective solution to help students overcome this difficulty. By utilizing interactive features, students can practice writing independently and get immediate feedback, which helps them correct mistakes and improve their writing skills gradually.

Some previous studies related to the development of e-modules for learning show varied approaches and focus on different materials. Areta Puspa, Mohammad Adnan Latief, and Emalia Iragiliati (2018) developed an e-module for report writing for Food Processing Technology Study Program students participating in an internship program, using the Edmodo platform to facilitate communication between teachers and students. This e-module was designed with a deductive approach, which includes theories, examples, and exercises to help students complete the report independently. However, this product cannot be applied in high school because it was not relevant to the curriculum and the needs of students at that level. Meanwhile, Sucia Winita, Syahrul Ramadhan, and Yasnur Asri (2019) developed a Discovery Learning-based e-module for writing explanatory texts in secondary schools, designed to achieve the Basic Competencies in the 2013 Indonesian Language Curriculum. Although effective for this purpose, this module was not relevant to the needs of high school students at SMA Modern Islamic Boarding School Datuk Sulaiman Putri Palopo because the topic of Explanatory Text was not taught there. Finally, Anita Widiyanti (2021) developed electronic teaching materials in the form of e- worksheets using Liveworksheets for mathematics materials at the elementary level, specifically about the perimeter of flat shapes. Although this module was effective in the context of distance learning during the pandemic, this product cannot be applied in senior high school because the material taught was not related to English and has different levels. Overall, these studies provide an overview of the development of digital teaching materials tailored to the specific needs of students at different levels of education, although each has limitations in its application in different contexts.

The following was an overview of the research framework called 4D model that was founded by S. Thiagarajan, Dorothy S. Semmel, dan Melvyn I. Semmel (1974) for the study that developed a differentiation-based interactive e-module in English language learning, specifically for writing skills:

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0).

Global Journal of Arts Humanity and Social Sciences
ISSN: 2583-2034



Methodology

4-D This study utilizes the Research and Development (R&D) methodology, which focuses on the development of e-modules to improve students' writing skills in online or blended learning. This research follows the 4-D model which consists of four stages: Define, Design, Develop, and Disseminate. The model was chosen for its simplicity compared to other models such as Borg and Gall or ADDIE, and was more suitable for developing learning tools and media. In the Define stage, a needs analysis was conducted to determine the right learning strategies and media. The Design stage involves making e- modules, while the Develop stage includes validation and assessment. Finally, at the Disseminate stage, e-modules were shared and used in learning. This approach ensures e-modules were developed systematically, focusing on the suitability of content and media for the targeted students.

In this study, the 4-D model was used, consisting of four main phases:

1. **Define:**
   a. Front-End Analysis: Identifies the problems students face inlearning writing skills, through interviews with the teacher and students.
   b. Learner Analysis: Examines students' characteristics and learning needs, including target needs (Necessities, Lacks, Wants) and learning needs (Input, Procedures, Setting, Learners' and Teachers' roles), gathered through questionnaires.
   c. Concept Analysis: Focuses on key materials, such as Opinion and Thought, Description, and Analytical Exposition Texts, which require writing skills.
   d. Task-Analysis: Identifies main skills to be acquired and breaks them into sub-skills.
   e. Specifying Instructional Objectives: Converts task and concept analysis into specific, measurable instructional goals.

2. Design: The researcher formulated learning objectives, prepared materials, and designed an e-module prototype using Microsoft Word and Liveworksheets. Supporting aspects like images andvideos were added to the module.

3. Develop: Experts (language, material, and media) validated the e- module, and based on their feedback, revisions were made. A try-
   out was conducted with students to gather their perceptions and identify necessary revisions.

4. Disseminate: The final e-module was shared with teachers and students through Liveworksheets, allowing easy access and edits via social media and providing students with usernames and passwords for access.

The data analysis stage in this study involved several systematic steps to obtain valid and relevant results. First, data obtained from questionnaires and interviews were analyzed qualitatively by identifying the main themes that emerged related to students' writing learning needs. Furthermore, quantitative data obtained from the results of expert assessments and e-module trials were analyzed using descriptive statistics to measure the level of validity and effectiveness of the developed e- modules.

Findings

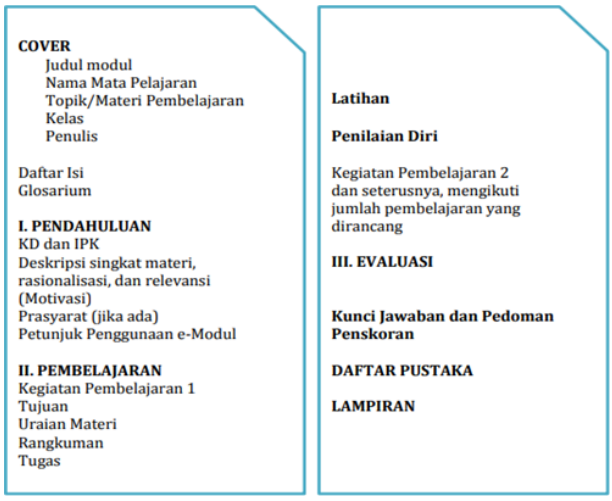
1. Define

Based on the results of the analysis of students' necessities, lacks and wants, it was found that the majority of students considered writing important to help them remember materials, recognize learning and monitor their English learning progress (50%). Others considered writing important to strengthen their mastery of language structures, idioms, and new vocabulary (23.3%), as well as to improve their overall English proficiency (16.7%). In terms of shortcomings, the biggest challenges were linguistic difficulties such as writing correct sentence structures (46.7%), followed by cognitive difficulties in understanding structures and grammar (26.7%), and obstacles in expressing ideas in writing (26.7%). In terms of desirability, the material that students were most interested in was "Opinions and Thoughts" (40%), followed by descriptive text (33%), and analytical exposition text (26.7%). These findings illustrate the urgent need for the development of learning media that can overcome these shortcomings while fulfilling students' desire to explore certain materials.

2. Design

At this stage, an e-module framework was created. According to Dwi (2015: 3), the components of the module content include learning objectives, required learner prerequisites, learning substance or material, forms of learning activities, and supporting components Meanwhile, according to Purwadi (2017: 6), the module framework was structured as follows:

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0).



And then, a module framework was developed that consisting of cover, introduction, table ofcontents, glossary, introduction (CP, brief description of the material, and instructions for using the module), learning (objectives, material description, summary, assignments, exercises, self- assessment), evaluation, answer keys and scoring guidelines, and the last bibliography.Then the researcher designed an electronic module prototype by including all the materials and supporting aspects (necessary) that had been prepared into the module framework using Microsoft Word.

3. Developed

At the "Develop" stage, researchers validated the instrument through assessment by linguists, material experts, media experts, and collected student perceptions. The instrument for linguists received a total score of 43 out of 48 maximum scores, with a percentage of 89.58% in the "Good" category.

Furthermore, the e-module trial was conducted in a computer laboratory to determine student perceptions. Of the 30 scheduled class XI students, only 20 students attended and filled out the questionnaire because the rest were unable to attend due to Independence Day activities. The trial results showed that 10 students rated the e-module as "Excellent", which means the module can be used without revision. The other ten students rated it as "Good", which means the module was feasible to use with minor revisions. Based on these results, the developed e-module was considered effective to be used in both face- to-face learning and students' independent learning. This trial also shows that the e-module can support the needs of the students.

Discussion

This research addresses the challenges in teaching writing skills at UPTD SMAN 1 Kalukku, Mamuju Regency, where limited textbooks and monotonous teaching methods become obstacles in the learning process. To overcome the problem, an electronic module (e-module) was developed using the 4D model (Define, Design, Develop, Disseminate) to support independent learning as well as with teacher assistance.

At the "Define" stage, a needs analysis was conducted on 30 students to determine the content and structure of the module. At the "Design" stage, the researcher created a comprehensive e-module framework based on the grade XI English syllabus, including objectives, materials, tasks, and interactive features through Liveworksheets. During the "Develop" stage, the module was validated by linguists, materials, and media experts, and tested on 20 students. The results showed a positive response, with most students rating the e-module in the "Very Good" or "Good" category. At the "Disseminate" stage, the e-module was socialized to students and teachers, and received positive responses regarding its practicality and effectiveness.

This research builds on the foundation of previous studies such as Areta et al. (2018) who developed an e-module in PDF format for report writing, and Sucia et al. (2019) who created a discovery learning-based e-module for explanatory text. Different from these studies, this research uses Liveworksheets to add interactive features such as videos, thus increasing user engagement. In addition, this study was in line with Anita (2021) who developed electronic worksheets using Liveworksheets, but the focus was on English writing skills. By utilizing Liveworksheets, this research offers a more dynamic and flexible learning tool to overcome the limitations of textbooks and support writing instruction effectively. This research demonstrates how technology-based learning tools can improve teaching and learning outcomes, particularly in resource-constrained environments

Conclusion

it was concluded that the E-module of Writing as a source of learning English writing was suitable for students at UPTD SMAN 1 Kalukku, Mamuju Regency. This can be seen from the results of the students' try-outs, where they can utilyze the e-module independently without the help of the teacher during offline learning. This e-module was also prepared by taking into account the 5 characteristics of a good module (Self-instruction, Self-contained, Stand-alone, Adaptive, and User friendly) by Daryanto (2013: 9) (cited in Evi: 2018).60 This e-module was developed based on English learning syllabus for XI grade at the first semester. So, this e-module was suitable for students at UPTD SMAN 1 Kalukku, Mamuju Regency, especially students at XI grade.

This research contributes to the development of an e-module based on "Liveworksheets" to improve the writing skills of grade XI students at UPTD SMAN 1 Kalukku. This e-module helps overcome the limitations of textbooks by providing interactive learning media that support independent learning as well as with teacher guidance. Using the 4D model (Define, Design, Develop, Disseminate), this research offers a systematic approach to the development of learning tools that can be used as a reference for future research. In addition, this e-module supports students in overcoming writing difficulties, such as language structure and

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0).

idea development, and provides innovation in the integration of educational technology that improves the quality of English learning. some suggestions could be given, including: 1. The developed electronic module product had not yet reached the final student learning outcome measurement with the electronic module. Therefore, it was open for other researchers to study further the measurement of students' final learning outcomes using this module. 2. The process of developing electronic modules was considered in selecting development software, and it was better to use developer software with more appropriate features. The development of electronic modules was developed even better by taking into account the interactive and mobile aspects of an electronic product.

References

1. Aditia, M. Taufik & Muspiroh, Novianti. "Pengembangan Modul Pembelajaran Berbasis Sains, Lingkungan, Teknologi, Masyarakat Dan Islam (Salingtemasis) Dalam Meningkatkan Hasil Belajar Siswa Pada Konsep Ekosistem Kelas X Di Sma Nu (Nadhatul Ulama) Lemahabang Kabupaten Cirebon." *scienticiae Educatia* 2, no. 2 (2013): 8–9.
2. Dinata, Muhammad Ali Marza. "Designing Electronic Module on English Grammar Learning Based on Lampung's Culture for The Eighth Grade Students of SMPN 12 Bandar Lampung 2019/2020."Raden Intan State Islamic University of Lampung, 2020.
3. Fidiana, Lutfi, S Bambang, and D Pratiwi. "Pembuatan Dan Implementasi Modul Praktikum Fisika Berbasis Masalah Untuk Meningkatkan Kemandirian Belajar Siswa Kelas XI." *Unnes Physics Education Journal* 1, no. 2252(2012): 39.
4. Haerazi, and Lalu Ari Irawan. "Practicing Genre-Based Language Teaching Model to Improve Students' Achievement of Writing Skills." *Indonesian Journal of English Language Teaching and Applied Linguistic*4, no. 1 (2019): https://www.researchgate.net/profile/Haerazi-Haerazi/publication/339480816_Practicing_Genre Based_Language_Teaching_Model_to_Improve_Students %27_Achievement_of_Writing_Skills/links/5e65fe76a6fd cc37dd11d945/Practicing-Genre-Based- Language-Teaching-Model-to.
5. Puspa, Areta, Mohammad Adnan Latief, and Emalia Iragiliati. "English for Academic
6. Purposes : E-Module of Writing a Report for Food Processing Technology Students." *Jurnal Pendidikan* 3, no. 3 (2018): 371–376. http://journal.um.ac.id/index.php/jptpp/article/view/1067 8.
7. Widiyanti, Anita. "Pengembangan Bahan Ajar E-LKPD Menggunakan Live Worksheet Pada Materi Bangun Datar Kelas IV Sekolah Dasar."Universitas Muhammadiyah Malang, 2021. http://eprints.umm.ac.id/73949/.
8. Wulansari, Evi Wahyu, Sri Kantun, and Pudjo Suharso. "Pengembangan E-Modul Pembelajaran Ekonomi Materi Pasar Modal Untuk Siswa Kelas Xi Ips Man 1 Jember Tahun Ajaran 2016/2017." *JURNAL PENDIDIKAN EKONOMI: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi dan Ilmu Sosial* 12, no. 1 (2018):

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0).