



The Implementation of Differentiated Instruction Integrated with Technology in English Class at SMA Negeri 7 Denpasar

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Abstract. This study investigated the implementation of differentiated instruction integrated with technology in English classrooms and students' interest in its implementation at SMA Negeri 7 Denpasar. An exploratory sequential mixed-methods design was applied. The qualitative phase involved classroom observations focusing on content, process, and product differentiation supported by technology. The quantitative phase used a 20-item Likert-scale questionnaire to measure students' interest based on enjoyment, attraction, attention, and involvement. The participants were one English teacher and 106 tenth-grade students from three classes (X8, X9, and X10), selected through purposive sampling. Qualitative data were analyzed using an interactive model, while quantitative data were analyzed using descriptive statistics. The findings showed that the teacher implemented differentiated instruction through varied learning materials, ability-based grouping, and flexible product options supported by digital platforms. The results revealed that students' interest was categorized as high, with a mean score of 72.5. Students demonstrated positive engagement reflected in their enjoyment, attraction, attention, and involvement. Overall, the findings indicate that differentiated instruction integrated with technology supports both instructional practices and students' interest in learning English.

Keywords: Differentiated Instruction; English Learning; Mixed Methods Design; Students' Interest; Technology Integration.

1. INTRODUCTION

The use of technology in education has grown rapidly and plays an important role in supporting teaching and learning processes. Technology offers various opportunities for teachers to provide learning experiences that are more flexible and engaging while addressing students' diverse learning needs (Major & Francis, 2020). In EFL classrooms, technology can assist students in accessing learning resources, participating actively in classroom activities, and improving their language skills through interactive learning activities.

However, EFL classrooms often consist of students with different readiness levels, learning preferences, and interests. These differences may create challenges for teachers in designing instruction that accommodates all students effectively (Damayanti & Sadikin, 2023; Marshanda et al., 2024). Therefore, instructional approaches that address learner diversity are needed to ensure that students can participate meaningfully in the learning process.

One approach that has received increasing attention is differentiated instruction. Differentiated instruction allows teachers to adjust content, process, and product based on students' readiness, interests, and learning profiles (Tomlinson, 2017). When integrated with technology, differentiated instruction can create more personalized learning experiences by providing various learning materials, activities, and assessment methods that address students' individual needs (Major & Francis, 2020). This approach is particularly relevant in the context

of Kurikulum Merdeka, which emphasizes learning that accommodates students' diverse needs and characteristics.

In addition to addressing students' diverse learning needs, differentiated instruction integrated with technology may also support students' interest in learning. Interest is important in learning because it encourages students to pay attention, participate actively, and become involved in learning process (Hidi & Renninger, 2006). In EFL classrooms, students' interest helps them stay engaged and develop their language skills (Dörnyei & Ushioda, 2011). Therefore, it is important to understand students' interest in the implementation of differentiated instruction integrated with technology to create meaningful and engaging learning experiences. In light of these considerations, this study aims to investigate the implementation of differentiated instruction integrated with technology in English classrooms and to explore students' interest in its implementation at SMA Negeri 7 Denpasar.

2. LITERATURE REVIEW

Differentiated Instruction and Technology Integration

Differentiated instruction is a teaching approach that helps teachers meet students' different learning needs by adjusting the content, process, and product based on students' readiness, interests, and learning profiles (Isnaini, 2025; Tomlinson, 2017). This approach recognizes that students in a classroom have different abilities, backgrounds, and learning preferences, so teachers need to design flexible and adaptive instruction. The implementation of differentiated instruction allows teachers to adjust learning materials, classroom activities, and assessment methods to better support student learning. Content differentiation refers to what students learn and how they access learning materials. Process differentiation explains how students take part in learning activities, while product differentiation refers to how students show their understanding (Tomlinson, 2000).

The integration of technology supports the implementation of differentiated instruction by providing flexible and varied learning resources (Teguh Handoyo et al., 2025). Technology allows teachers to present materials in different formats such as text, audio, and video, and to design learning activities that match students' levels and needs (Major & Francis, 2020). In addition, digital platforms and applications help support personalized learning, give feedback, and make classroom interaction more flexible. The integration of differentiated instruction and technology helps teachers create student-centered learning environments that accommodate classroom diversity (Karima et al., 2025).

Students' Interest

Students' interest is an important factor that influences engagement, motivation, and participation in the learning process (Ningsih et al., 2025). According to Hidi & Renninger (2006), interest is a psychological state characterized by focused attention, positive feelings, and increased cognitive engagement. Interest can be classified into situational interest, which arises from environmental factors, and individual interest, which develops over time and becomes more stable. In EFL learning, students' interest plays a crucial role in supporting active participation and sustained engagement in language learning activities. Students who have higher interest tend to show greater attention, involvement, and persistence in learning English (Dörnyei & Ushioda, 2011). This interest can be observed through indicators such as enjoyment, attraction, attention, and involvement in the learning process (Ainia, 2020).

3. RESEARCH METHOD

This study employed an exploratory sequential mixed-methods design (Creswell & Clark, 2018) to investigate the implementation of differentiated instruction integrated with technology and students' interest in its implementation in an English classroom. The study was conducted at SMA Negeri 7 Denpasar, Bali, Indonesia, involving one English teacher and 106 tenth-grade students from three classes (X8, X9, and X10) selected through purposive sampling. Data were collected through classroom observations and questionnaires. In the qualitative phase, observations were conducted to explore and describe the implementation of differentiated instruction integrated with technology, focusing on content, process, and product differentiation supported by technology use. In the quantitative phase, a 20-item questionnaire was administered to measure students' interest based on four indicators: enjoyment, attraction, attention, and involvement (Ainia, 2020), using a five-point Likert scale. The qualitative data were analyzed using the interactive model proposed by Miles & Huberman (1994), including data reduction, data display, and conclusion drawing/verification, while the quantitative data were analyzed using descriptive statistics in the form of mean score. The students' interest levels were categorized using criteria adapted from Candiasa (2010) using the ideal mean (M_i) and ideal standard deviation (SD_i). The categorization consisted of five levels, namely very high, high, moderate, low, and very low. The findings from both qualitative and quantitative data were interpreted together to provide a comprehensive understanding of the phenomenon.

4. RESULTS AND DISCUSSION

Implementation of Differentiated Instruction Integrated with Technology

Based on classroom observations, the teacher implemented differentiated instruction integrated with technology through content, process, and product differentiation in three tenth-grade classes (X8, X9, and X10) over five meetings from February 6th to March 27th, 2026. The implementation was consistent across all classes. In content differentiation, the teacher delivered five types of texts (news item, expository, narrative, recount, and procedure) using various technology-based formats such as videos, texts, and presentations. Although the materials were the same for all classes, they were presented in different formats to support students' understanding. In process differentiation, students were grouped based on ability levels (basic, intermediate, and advanced) and given different tasks. The teacher facilitated group work, discussions, and presentations to support collaboration and communication skills. In product differentiation, students were given options to demonstrate their understanding through written work, presentations, or videos. The products were submitted via digital platforms such as Google Classroom, YouTube, or blogs.

Students' Interest

Students' interest in the implementation of differentiated instruction integrated with technology was measured through a questionnaire distributed to 106 tenth-grade students. The results of the questionnaire showed that students' interest in the implementation of differentiated instruction integrated with technology was generally high. The total score obtained from 106 students was 7685, with an overall mean score of 72.5. Based on the criteria adapted from Candiasa (2010), this score is categorized as high. At the class level, all three classes (X8, X9, and X10) also showed high levels of interest, with mean scores ranging from 70 to 76.1. The details are presented in Table 1.

Table 1. Students' Interest Score of the Implementation of Differentiated Instruction Integrated with Technology.

No.	Classes	Total Students	Total Scores	Mean Score
1.	X8	35	2495	71.2
2.	X9	35	2450	70
3.	X10	36	2740	76.1
Total		106	7685	72.5

Furthermore, the distribution of students' interest showed that 17 students were categorized as having very high interest, 62 students as high, and 27 students as moderate, while no students fell into the low or very low categories. Overall, these findings suggest that students demonstrated a high level of interest in learning English through differentiated instruction integrated with technology.

Discussion

The findings show that the teacher applied differentiated instruction through content, process, and product differentiation, while integrating technology to support the learning process. This implementation indicates that the teacher tried to meet students' different learning needs in one classroom. In content differentiation, students were provided with learning materials in various forms such as videos, texts, and slides, which may help them understand the material in ways that suit their learning preferences. In process differentiation, students were grouped based on their learning level and assigned tasks with different levels of difficulty, allowing them to learn according to their abilities. In product differentiation, students were given choices to demonstrate their understanding, such as writing, presenting, or making videos, which gave them more freedom to express their learning outcomes. Technology also played an important role in supporting the learning process. Digital tools such as Google Classroom, YouTube, Canva, PowerPoint, and online quizzes were used to support the delivery of materials, learning activities, and student work submission. These tools also made learning more flexible and accessible, and helped the teacher manage students with different learning needs more effectively. Overall, the combination of differentiated instruction and technology created a more flexible and student-centered learning environment. This learning approach may help students feel more comfortable and involved because it allows them to learn in different ways and at their own pace.

Regarding students' interest, the findings show that students had a high level of interest in learning English through this approach. This indicates that students generally responded positively to the learning activities. They showed enjoyment, attraction, attention, and involvement during the lessons. Enjoyment was seen when students appeared happy and interested in the learning activities. Attraction was shown when students felt drawn to the learning materials and activities, especially those using technology. Attention was seen when students focused on the teacher's explanation and learning materials. Involvement was shown when students actively participated in discussions, answered questions, and completed learning tasks. This positive interest may be caused by the availability of varied learning materials, activities, and task choices. When students are given more opportunities to choose and use technology in learning, they tend to become more engaged and interested in classroom activities. This may explain why most students showed positive interest, with no students in the low interest category. Overall, the findings suggest that differentiated instruction integrated with technology can support both learning and student interest in English classes. However,

the success of this approach may depend on how well technology is integrated to support students' diverse learning needs.

5. CONCLUSION

This study investigated how differentiated instruction integrated with technology was implemented in English classrooms and students' interest in its implementation. The findings show that the teacher implemented differentiated instruction through content, process, and product differentiation supported by the use of digital technology, which provided varied and flexible learning experiences for students. The results also indicate that students had a high level of interest, reflected in their enjoyment, attraction, attention, and involvement during the learning process. In conclusion, differentiated instruction integrated with technology supports both the learning process and students' interest in English learning. The success of this approach depends on how well it is implemented in the classroom.

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