Development of Grammatic Learning Media A1 Artificial Intelligence (Ai) Based

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Abstract. One form of interactive learning media is Artificial Intelligence (AI) based learning media. AI is a computer science that creates an artificial brain as a machine to work and react like the human brain to process a lot of information and data and provide computer-based conclusions in a relatively short and fast time. The use of Artificial Intelligence in education has revolutionized teaching and learning methods in education. The purpose of this research is to create an AI-based learning platform using Kahoot for Grammar 1 courses. Kahoot is a free online game-based platform that allows users to arrange multiple choice assessments that turn into interactive games for students. Kahoot can help learning evaluation activities become more interesting, interactive, conducive and easy to monitor student learning outcomes. Making this media uses the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation).

Keywords: Development, Learning Media, Grammatics 1, Artificial Intelligence.

1 Introduction

In the 21st century, technological advances are rapidly progressing. The impact of this technological development is profoundly felt, particularly in the education system. Traditionally conducted face-to-face, education has now transitioned to an online system [1][2]. Consequently, educators must exhibit increased innovation and creativity in utilizing instructional media. Media serves as a vital tool in supporting educational objectives, acting as a means for teachers or lecturers to communicate messages to students. The absence of media in the teaching and learning process can lead to communication failure, impeding the effective conveyance of educational material [3][4]. Beyond mere distribution, media plays a role in clarifying messages and serving as a learning intermediary.

One prominent form of media is online learning media, which functions as a versatile tool, especially in distance learning. Online learning media empowers users by allowing them to influence and change accessed sources, facilitating information conveyance, updates, and enhanced learning experiences [5][6]. The utilization of interactive learning media has been shown to enhance learning effectiveness, making it more engaging and enjoyable for students. Supported by theoretical and practical data and learning approaches, interactive learning media, such as Artificial Intelligence (AI)-based media, holds promise in this regard [7][8][9]

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AI, defined by Karsenti as computer science creating artificial brains to function and respond like the human brain, is a defining characteristic of the Fourth Industrial Revolution [10]. Fahimirad & Kotamjani assert that innovative educational technologies, including AI, are revolutionizing teaching and learning methods at the university level [11]. AI enables machines to learn from experience and adapt to new information, mimicking human-like cognitive processes [12]. Kahoot, an AI-assisted learning platform, stands out as an interactive learning medium emphasizing student participation. Developed from the Lecture Quiz Research Project [13], Kahoot is a free online game-based platform that transforms multiple-choice assessments into interactive games for students [14]. Its unique concept aids in improving the interactive and engaging nature of learning evaluations, making them conducive for monitoring participant outcomes. Kahoot's features include quizzes, discussions, games, and surveys. Notably, Kahoot's time-limited questions promote quick and precise thinking among students. Educators can create quizzes and discussions with multimedia elements, such as videos, images, and text.

Given the background outlined above, the research questions are formulated as follows: 1. What is the process of developing AI-based Grammatical learning media 1? 2. What is the quality of the AI-based Grammatical 1 learning media, as assessed by media experts, material experts, and students?

2 Method

This study is a developmental research aimed at creating learning media for the Grammar 1 course in the German language education program. The development process follows the ADDIE model due to its systematic and theoretically grounded design. The stages of the ADDIE model, as outlined by include Analysis, Design/planning, Development, Implementation/execution, and Evaluation/feedback [15].

Data and data sources for this research are derived from the Studio Express A1 book, covering all Grammar 1 content in the German Language Study Program. The analysis involves competencies required of students and an examination of student characteristics. The design phase includes setting objectives, methods, and evaluation criteria. Development involves creating learning media products, while implementation includes expert validation and testing using the Kahoot learning platform. Evaluation is conducted formatively during product development.

The research utilizes a quasi-experimental design with a quantitative approach, employing Pre-Test and Post-Test Control. Data collection involves tests, specifically an initial test (pre-test) and a final test (post-test) assessing Grammar 1 learning achievements. The research instrument is a multiple-choice test created by the researcher. Scoring awards one point for correct answers and zero for incorrect ones.

The research procedures consist of pre-experimental preparation, pre-test, experimental treatment, and post-test stages. The T-test analysis is applied to assess differences in learning achievement between classes using Kahoot and conventional media. The effectiveness of the media is evaluated by comparing pre-test and post-test results.

3 Result and Discussion

The research findings demonstrate the positive impact of implementing Kahoot in the learning process. The results indicate that using Kahoot has significantly improved student learning outcomes, making it an effective and efficient learning medium. This aligns with previous research by Bahar, affirming the effectiveness of Kahoot in technology-based learning. Additionally, Kahoot proves to be a motivational tool, inspiring students to enhance their enthusiasm, motivation, and independence in their learning journey. The positive responses from students further support this notion, as Kahoot is recognized as an engaging and effective medium, fostering interactive learning experiences. These observations are consistent with the findings of Fauzan and Irwan, who emphasize Kahoot's attributes as a fun, interactive, and impactful learning tool. Furthermore, the comparison with PowerPoint highlights that Kahoot not only yields better learning outcomes but also enhances students' high-level thinking abilities. The overall student response to the Kahoot application is highly positive, indicating its suitability for online learning. In conclusion, the Kahoot application emerges as a versatile and effective tool that not only improves learning outcomes but also enhances thinking abilities and motivation to learn, making it a valuable asset in the educational landscape.

4 Conclusion

Based on the findings derived from the data analysis in this research, several conclusions can be drawn. Firstly, there exists a notable disparity in student learning achievements between those instructed in the German language education program using media and those taught without conventional media. This disparity underscores the substantial impact of incorporating media into the educational process. Secondly, it is evident that the utilization of media in teaching A1 Grammatics for students in the German language education program proves to be more effective compared to the traditional method of employing conventional media. This conclusion emphasizes the efficacy and advantages associated with the incorporation of media, particularly in the context of enhancing learning outcomes in the study of grammatical concepts at the A1 level.

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