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Designing a Notation Card Game Media to Improve the Ability to Read Rhythmic Music of 7th Grade Junior High School

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A B S T R A C T

Media games are learning tools that are in great demand by students. Games can stimulate students' attention and interest in learning something. This research was the development of notation card game media which is used as a medium for learning the art of music in junior high schools. The design of notation card media is specifically designed with pictures and colors that are attractive to students. The design of this notation card media used the Analyze, Design, Develop, Implement, and Evaluate (ADDIE) model. This research was tested on 7th-grade students (20 students as subjects who had taken rhythmic reading material in the subject of music arts). This research was conducted employing tests, distribution of questionnaires to students, and documentation. The instruments used in this study were material eligibility validation sheets, feasibility validation sheets for notation card game media, practicality sheets, and student opinion sheets. The results showed that the design of this notation card game media can increase students' interest in musical rhythm. This game card can hone students' brains in memorizing and calculating music rhythms by learning while playing in groups. This notation card game media is suitable to be applied in junior high schools in music arts subjects.

A R T I C L E I N F O

1. INTRODUCTION

Various curriculum demands often cause learning obstacles including the readiness of teachers to carry out the process of teaching and learning activities that have not maximized their learning tools and media (Raihany *et al.,* 2022). The problem that is often faced is the lack of learning media available in schools. In addition, classical methods such as lectures without combining other methods have an impact on students' learning interests. Thus, students quickly feel saturated with these classical methods. Conditions like this occur due to the lack of learning media or game media such as props, videos, images, graphics, and so on. Good learning can be supported by a conducive, pleasant learning atmosphere between teachers and students (Hanipah *et al.,* 2022).

Based on this explanation, teachers are required to be more competent in facilitating students. One of the efforts is creating learning that motivates students to be more active and creative in discovering their knowledge. Thus, students can experience firsthand to use of game media. One of the problems in music education lies in the lack of insightful human resources regarding the arts and education. Music learning is part of the art and culture lesson in Indonesia which contains several learning components that can affect the implementation of maximum music learning (Amelia, 2021).

Music art education emphasizes more on providing musical arts experience, which later gives birth to the ability to utilize musical art in everyday life. One of the musical elements that needs to be taught to students is rhythm. To improve student musicality, students must first know how to understand rhythm first. The rhythm of music is closely related to musical notation. The discussion about rhythm, then naturally talks about the problem of music, because the two have a close relationship (Sa'diyah & Zaidah, 2023). Rhythm, which in everyday terms is called rhythm, is a basic element in life that is certainly not always associated with music but can take advantage of game media. Thus, children are not bored. Junior high school in Labschool, Universitas Pendidikan Indonesia, Indonesia, is one of the junior high schools in the city of Bandung that has music subjects.

To increase students' interest in music art, especially rhythmic material, the researcher designed a notation card game media to sharpen students' brains in memorizing and calculating rhythms by learning while playing in the group. The design of this notation card media is a form of learning results from the Basic Theory of Music Course. The game was piloted for junior high school students in grade VII. The method of this game is to play with groups. In addition to being a learning medium in the classroom, this notation card can also be played by students outside of school hours (Schmitz *et al.,* 2015).

Previous research on learning media in the form of cards has been studied in several subjects. In problem-based learning, students discover a concept of knowledge through a series of process skills. Through the process, students were encouraged to be directly and actively involved in learning a concept of the subject matter. Learning with this approach hones students' process skills. As is well known, process skills are provisions that can be used to find a concept or knowledge. The use of Problem-Based Learning (PBL) assisted by question card media can trigger direct student involvement in learning. Thus, it improved students' higher-order thinking skills. It is hoped that the implementation of PBL learning assisted by question card media can improve students' HOTS abilities (Wahyuni *et al.,* 2022).

Other research on learning media in the form of UNO cards has also been studied (Diani, & Dwijanto, 2020). The game method can help students feel comfortable while studying and then it becomes easier to invite them to learn. Learning media does not serve to replace the teacher teaching in the classroom, because the teacher not be replaced by his position.

Learning media serves to help teachers and teachers in the classroom serve as facilitators to help students with learning difficulties in the classroom. Therefore, learning media has been developed on optical themes. The media is in the form of cards that are played in groups called UNO card game media.

Students doing educational games need educational game tools as well. Educational game tools according to Almeida and Simoes (2019) are play tools that can improve entertaining functions and educational functions. This means that educational game tools are a means that can stimulate the activity of learners to learn something without students realizing it, either using modern technology, or simple and even traditional technology.

2. METHODS

We created a media design for the card notation game media and applied it to junior high school in lab school, Universitas Pendidikan Indonesia, Bandung, Indonesia. The stages of activity were carried out using the Analyze, Design, Develop, Implement, and Evaluate (ADDIE) method. The ADDIE method is one of the basic stages of learning model development (Mie *et al.*, 2018):

(i)   Analysis. At this stage, we analyzed the need for new product development (models, methods, media, teaching materials) and tested the feasibility and terms of product development. The development of a product was initiated by a problem in an existing/applied product (Hidayat & Nizar, 2021). Problems arose and occurred because the products that exist now or are available are no longer relevant to the needs of the target, learning environment, technology, characteristics of learners, and so on.

(ii) Design. At this stage, the instructions for implementing the design or manufacture of the product were written clearly and in detail. At this stage, the product design was still conceptual and underlined the development process in the next stage.

(iii) Development. In this stage, a conceptual framework for implementing products in the form of notation cards was compiled. The framework, which is still conceptual, was then realized into a product that is ready to be applied to a game medium.

(iv) Implementation. Initial feedback (initial evaluation) was obtained by asking for matters relating to the development objectives of the resulting game media product. The application was carried out referring to the design of the notation card game media product that was made.

(v)   Evaluation. We provided feedback to users of game media. Thus, revisions were made according to the results of evaluations or needs that had not been met by the media. The ultimate goal of the evaluation was to measure the achievement of development goals (Mie *et al.*, 2018).

3. RESULTS AND DISCUSSION
3.1. Stages of Analysis and Design

At this design stage (see **Figures 1** and **2**), we first analyzed the feasibility of the media and whether it was relevant to the target. The target of this research is the 7th-grade students. According to the analysis of designers and a team of experts, the card design, color, size, and musical notation images created are in line with the target. With a coloring that is not so dark, it is enough to attract the attention of junior high school students. The image of the notation card is still simple and easy to understand for rhythmic calculations. The note values created are full note, note 1/2, note 1/4, note 1/8, and break sign. This note value be implemented into the game by counting the number of notes in 1 4/4 rhythm.

Figure 1. Music notation card design.

Figure 2. Music notation card packaging design.

3.2. Stages of Development

After the design stage (see **Figures 3** and **4**), we analyzed the need for new product development (models, methods, media, teaching materials) and analyzed the feasibility and requirements of product development. After analyzing and interviewing various speakers, this card product is very relevant to the needs of the target in the school learning environment, especially in music subjects.
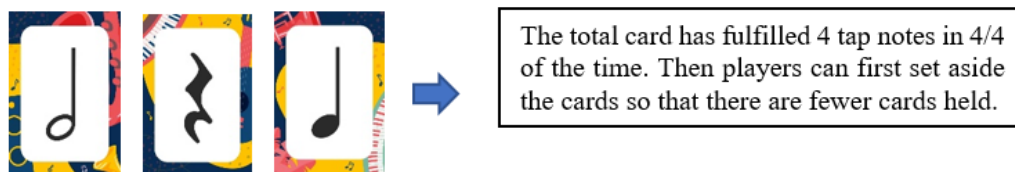
After the product was designed with a selection of colors and sizes suitable for junior high school children, we made the rules of the game first. There are several ways to play that can be developed from the medium of this musical notation card. First, the card can be used as a flashcard by the teacher to introduce various types of notations and note values.

Figure 3. Notation card media for introduction of nots.

Secondly, this musical notation card can be played by playing with the opponent, which is a game that completes the 4/4 rhythm. The goal is for students to understand that in the arrangement of one 4/4 rhythm, there are 4 notes 1/4. Researchers designed the game by handing out cards with randomization first, then distributing them to each player. The total number of notation cards made is 62 pieces containing full notes, 1/2 notes, 1/4 notes, 1/8

notes, and rest marks. If played by 2 players, then each player gets 31 cards. If the player manages to arrange the cards into a 4/4 more rhythmic array, then the player is the winner. Here's a picture of the game completing the 4/4 rhythm.

The total card has fulfilled 4 tap notes in 4/4 of the time. Then players can first set aside the cards so that there are fewer cards held.

Figure 4. The meaning of notation card media.

The player be considered a winner if the cards are completely arranged or have the least amount left. The third is a card grab game. The goal of the third game is the same as the second game, which is to arrange a 4/4 rhythm. What distinguishes the two is the playing technique. The third game technique is played by picking up stacked cards. Each player only gets 4 cards at the beginning of the game. Next, the player arranges the cards until they get a 4/4 array. If the initial 4 cards have not been arranged, then the player must take 1 card stacked in turn. Players be considered victorious if they manage to arrange a 4/4 rhythm notation card first without leaving a card in their hand or a card running out. This game can be played by more than 2 people and a maximum of 4 people can be played.

3.3. Stages of Implementation

After this game technique was designed, researchers experimented first with students of the Music Arts Education Study Program, Universitas Pendidikan Indonesia. At this stage, students can analyze whether the notation card media product is too difficult to play or easy for 7th graders of junior high school to play.

Before using card media, the students were given basic rhythmic material first by the research team. Thus, the students understood and understood the calculation of musical notation in Rhythm 4/4. After a question and answer all students understood the value of the notation. Students of the Music Arts Education Study Program invite all students to be distributed card media game groups to be given tutorials before the cards are played.

3.4. Evaluation Stages

Previously, these class VII students with a total of 25 students did not fully understand how to calculate rhythm. Of the 25 students, only 1 student understands and can read rhythmic notation. After being treated by introducing the card through a game, all students came to understand how the note value is formed, how to arrange notes into 4/4 rhythms, how the silent sign functions, and other note functions. Then researchers and teachers conduct students' rhythmic understanding tests with multiple-choice questions and essays. The content of the question is about rhythm and how to arrange it. As a result, all students can answer all the questions correctly.

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content of the question is about rhythm and how to arrange it. As a result, all students can answer all the questions correctly.

Rhythmic notation cards make it easier for students to get to know notation and rhythm. This is based on the ADDIE method (see Figure 5). In addition to being trained to be able to read rhythmically, students are indirectly responsible and motivated to study harder. Thus, they can play cards with friends in class and outside of class hours. This makes it easier for teachers to evaluate rhythmic learning in the classroom. The application of game media in the form of notation cards is an innovative learning medium for teachers in the current era. With media examples like this, teachers are motivated to develop these notation cards into other musical materials. Teachers also be motivated to create other learning media. Thus, classroom learning is fun for students. Finally, this study adds new information and is in line with other previous reports (Novrizal *et al.*, 2022; Azmiyati *et al.*, 2022; Syarifatunnisa *et al.*, 2023; Kahar *et al.*, 2024).

Figure 5. Stages of designing a notation card game through the ADDIE model.

4. CONCLUSION

Music art education emphasizes more on providing musical arts experience, which later gives birth to the ability to utilize musical art in everyday life. One of the musical elements that needs to be taught to students is rhythm. With the media of notation cards as a learning medium in the classroom, learning in the classroom attracts more students' attention. Thus, it can foster student learning motivation. Students can understand how notes and rhythms such as 2/4, 3/4, and 4/4 are worth. During the rhythmic performance, students also know the shape of some note marks and rest signs. Rhythmic material is clearer in meaning. Thus, it can be better understood by students and allow students to master the learning objectives well. Through designing using the ADDIE model, these notation cards also attract students to play outside of class hours. Indirectly, students can play while learning and get a pleasant experience in rhythmic learning.

5. ACKNOWLEDGMENT

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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