



## Game-Based Development Using the Hannafin and Peck Model for the *Tajwid's* Learning Media

Nazliati<sup>1</sup>, Rita Sari<sup>2</sup>, Alfiatunnur<sup>3</sup>

### Abstract

The pedagogical imperative to enhance Tajweed proficiency, a fundamental Islamic educational tenet, necessitates innovative teaching methodologies, especially for learners at the concrete operational stage. This study introduces "Ludo Listas Tajwid" (Lolita), a pioneering game-based educational media designed to ameliorate the learning trajectory of Tajweed. The research developed and evaluated Lolita to ascertain its efficacy and applicability in the pedagogical domain of Quranic recitation. Utilizing the Research and Development (R&D) approach, underpinned by the Hannafin and Peck model, the study meticulously orchestrated the media development phases, incorporating design, development, and evaluation stages. The methodology entailed a comprehensive descriptive data analysis to delineate the media development steps and substantiate its educational value. This iterative process facilitated the refinement and validation of Lolita, ensuring its alignment with educational standards and learning objectives. The findings revealed that Lolita substantially ameliorated the Tajweed learning experience, evidenced by high validation scores: 88% for media, 90.7% for content, and 80% for language proficiency. These metrics underscore the media's pedagogical soundness and its consonance with Tajweed learning objectives. The implications of this research are multifaceted, extending beyond the immediate educational setting. Lolita's success illustrates the potential of game-based learning platforms in engaging students more effectively in religious education, thereby enhancing their learning outcomes. However, the study acknowledges its limitations, including the specific focus on learners in the concrete operational stage and the need for broader empirical validation across varied educational contexts. The study recommends further research to explore Lolita's scalability and its impact on long-term learning outcomes, aiming to establish a robust evidence base for game-based learning in religious education.

**Keywords:** *Tajweed Learning, Game-Based Media, Educational Technology*

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### Introduction

In the 5.0 era, students are required special skills to be familiar with technology. Especially during the Covid-19 pandemic, the education system has changed from offline to online learning (Tarkar 2020) Another impact of online learning, students can exchange information and connect to their friends through social media such as WhatsApp, however, this has become a new problem for their health and social skills. (Bibi and Nawaz 2020)

Ideally, learning should be able to develop students' knowledge according to their potential logically and systematically. (Abdul Majid 2014) Innovative learning can eliminate boredom so as to stimulate students' interest in learning. Students who have an interest in

learning tend to actively pay attention to the teacher's explanation. So interest has a significant influence on learning activities by fostering a sense of pleasure to encourage students to learn seriously.

Developments in the context of education are usually linked to generational changes and technological developments. Each has the same or different approaches in developing innovations for teaching to be more interactive so as to improve the quality of education. The step that can be taken to foster student learning activities is to provide updates in the teaching and learning process. Especially with fairly complicated subject matter such as Tajweed. Tajweed is the science of reading the Quran. Tajweed material is very urgent to be taught to students so that there are no mistakes when reading and pronouncing it so that it does not change the meaning of the reading.

Therefore, appropriate media is needed and in accordance with the age of students who are still at the concrete operational stage. To help with this, there is nothing wrong with educators using learning technology. One of them is the use of teaching media which aims to transfer information so that it is uniformly accepted by students by stimulating their five senses so that learning objectives can be achieved (Sukiman 2017). Media can also stimulate student learning. (Muyassaroh, Khamim, and Mubin 2022)(Gagne, 1985) Haney and Ullmer divide the media into three categories, namely first, media that are able to present information are called media presenters. Second, media that contain information are known as object media, and third, media that allow for interaction are called interactive media.

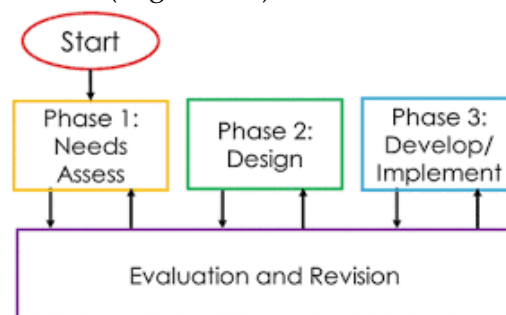
To increase activeness and help students' understanding by playing and learning together, game-based interactive media is an alternative. Game-based media called gamification is an innovation in teaching by utilizing game-based teaching media. Games allow children to receive immediate feedback on their learning gains in class or even to receive rewards (Kaap and Cone 2012). Elements of gamification in the form of perceived collaboration, favorable feedback, self-expression and sense of control can increase students' instructional motivation, so it is great for teachers to improve teaching activities.(Luarn, Chen, and Chiu 2023)

One of the teaching media that can be modified with gamification is ludo. Gamification uses elements of game mechanics that provide practical solutions by building engagement with certain groups (Miarso 2004)(Jusuf, 2016). Ludo is a game that is very familiar in many countries. Ludo is played in groups of two to four people (Zakiah, 2011).

However, this game is carried out several game modifications so that it will be integrated with tajweed teaching material. This ludo game modification was developed using the Hannafin & Peck model, which consists of three stages: need analysis, design, development and implementation.

## Methods

The research and development (R&D) design is used to identify the steps of developing a new product or improving existing products so that they can be accounted for. The Hannafin & Peck model is a development model consisting of three stages: needs analysis, design and development, and implementation (Tegeh 2014).



**Figure 1.** Hannapin and Peck Model

This development model is oriented toward learning products, in the form of media, modules, and so on. The steps in the Hannafin and Peck model are as follows:

- 1) Needs Analysis  
The needs analysis stage aims to identify problems or needs to develop suitable learning media according to needs.
- 2) Design  
Preparation of product drafts in this game-based learning media in the form of printed media based on the results of observations in the initial steps in preparation for producing a learning media, several stages are carried out, among others:
  - (a) Selection of material  
The material chosen in this research and development is the law of *mim sukun*. The selection of this material is based on the results of observations that show the lack of understanding of students about basic Tajweed material, especially *mim sukun*.
  - (b) Selection and collection of materials  
Researchers select and collect material in the form of text along with supporting images that can make the media communicative.
  - (c) Material design  
Material design is the flow of competencies from learning tajweed material. Making material is done by describing the letters of *mim sukun* reading into several discussion points. The material used is adjusted to the selection of material that has been compiled in developing learning media.
  - (d) Creating a storyboard  
The designs and storyboards that have been made are consulted with material experts, media experts and linguists. Revisions will be made if the design is not appropriate. If the design is considered good, the media development process increases to the next stage, namely the product manufacturing stage.
  - (e) Display design  
The display design on this game-based learning media product uses a type of material such as printed media in the form of banners in which images are designed and enter *hijayyah* letters in accordance with the predetermined material.

- 3) Development  
Development (Development/Implement) activities carried out in this phase are the production of game-based learning media, testing, and formative assessment and summative assessment. The storyboard document will be used as the basis for making game-based learning media that can help the process of making learning media. The evaluation conducted is formative evaluation. Formative evaluation is carried out to collect data at each stage which is used to improve and summative evaluation is carried out at the end of the program to determine its effect on students' understanding in remembering the letters in the *mim sukun* reading law.

This research was conducted at Rumah Tahfidz Nurul Mubin and Mannatul 'Ilmi Al-'Aziziyah Langsa, 3 respondents were randomly chosen as a small group of external validators and 9 respondents as a large group of external validators. Data collection techniques were carried out using validation sheets in the fields of media, material, and language by three teams of experts who are IAIN Langsa lecturers.

The data that has been obtained is then analyzed using descriptive statistical analysis using percentages, with the formula below:

$$\text{Presentase (\%)} = \frac{\text{Skor yang diperoleh}}{\text{skor maksimal}} \times 100\%$$

The results of the percentage calculation obtained from the media, material and language validators will then be categorized according to the level of media feasibility.

Table 1. Criteria for Media Feasibility

Criteria	Score	Percentage
Not feasible	1	1-20
Less feasible	2	21- 40
Quite feasible	3	41-60
Feasible	4	61-80
Very feasible	5	81-100

## .Result

The fifth stage, researchers carried out product evaluations in the form of expert questionnaire results regarding the E-Module. Based on the validation results, in general the E-module is suitable for use but needs revision. Revisions from media experts explained that revisions were needed regarding the neatness and composition of the writing and e-module background. Then material experts must make better evaluations and adapt them to existing local wisdom. Apart from that, researchers also conducted an evaluation by asking for responses from users of the E-module product. Based on the response results, the E-Module is also in a suitable condition for use. Other responses, users are happy and increase their interest in learning. Because this is a new medium for them.

This study used the Hannafin and Peck instructional development model. This model designs teaching that consists of three phases, namely the needs analysis phase, the design phase, the development and implementation phase. The research results are as follows:

### 1.1. Needs Analysis

In this phase, the needs analysis examined includes (1) the knowledge of participants aged 9-13 years on average has not mastered the understanding of *mim sukun* which they should have been able to master at that age. (2) the character of students at an average age of 9-13 years is still happy to play, joke with friends, easily feel bored, and lack focus; (3) Lack of game-based learning media that supports the learning process. Then a solution was found to overcome these problems by designing teaching media.

### 1.2. Design

The initial media product design stage researchers do after the needs analysis is completed. At this stage the researcher develops Islamic Ludo media products according to the description of the steps as follows: Game Board

1.2.1 Maturation of media concepts and materials.

1.2.2 Designing the Ludo Lintas Tajweed game board using the picsart application.

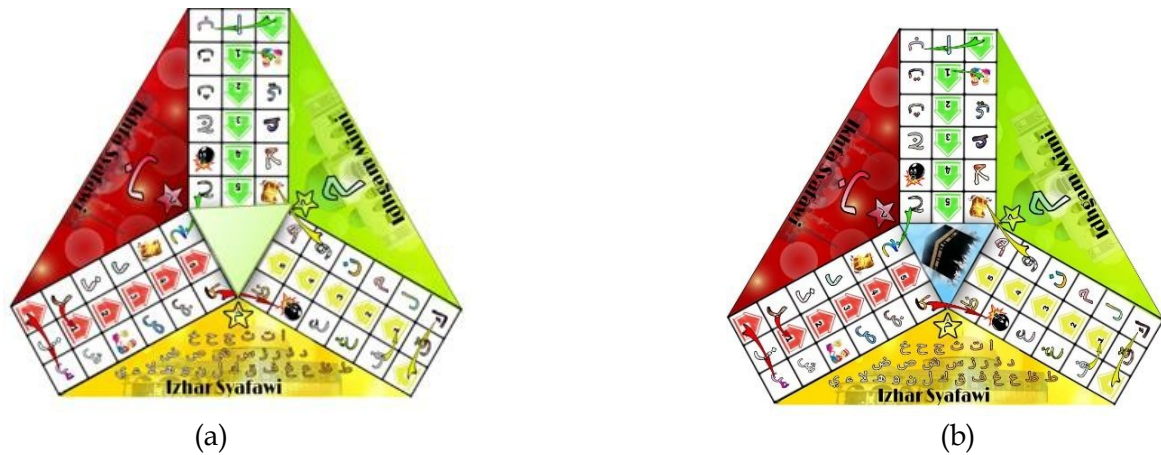
1.2.3 Designing question cards, trap cards, house cards, bonus cards using shapes on insert in word

1.2.4 Prepare the game procedures

### 1.3 Development and Implementation

The development of LOLITA game media on *sukun* / shorthand Mim material that has been made is then validated by media experts who are lecturers in educational technology, material experts who are lecturers in the field of Quran education, and language experts who are lecturers in Indonesian. Validation of this media was carried out twice after receiving directions for improvement from the experts.

(a)



**Figure 2.** This is a figure; Ludo game board display. (a) Ludo game board display before validation; (b) ) Ludo game board display after validation

Table 2. The final Validation Result

Validator	Persentase	Kriteria
<b>Internal Validator</b>		
Media	88%	Very Feasible
Content	90,7%	Very Feasible
Grammar	80%	Feasible
<b>External Validator</b>		
Small group	100%	Very Feasible
Large group	98,5%	Very Feasible

## Discussion

In the era of 5.0 society technology has controlled all sectors of human life, one of which is education. This condition has not only a positive impact but also a negative, especially for young students. The students become depends on gadgets and it has an impact on their physical and social health for example they lack social value because of less direct interaction among them. Most of the interaction is done by social media and others. This funding is related to Bibi & Nawaz which highlights the new problems of learning online affecting student health and social skill.

Referring to the problem above to stimulate students' understanding of information and also to improve the social skills of students, especially in learning the Quran, an interactional media has been created namely Lolita (Ludo Lintas Tajweed). The aim of the media is to stimulate the student's activities, especially for those aged 7-13 years old who are concerned about concrete operation. This finding relates to Sukiman's outcome which mentions the use of media effectively for transferring information by stimulating students' five senses so that learning objectives can be achieved.

The research findings have proved that students have positive responses to Lolita, 98 % above of the students like playing Lolita because the display of media has bright and interesting colors, is easy to play with, easy to carry out and the instruction is not confusing



to them. They enjoy the game with their friends. They can directly get feedback by answering the questions that have been given, and those who can answer correctly get rewarded otherwise Students are stuck in their boxes as a punishment. This finding is related to the function of gamification which is games allow children to receive immediate feedback on their learning gains in class or even to receive rewards (Kaap & Cone, 2012) and Elements of gamification in the form of perceived collaboration, favorable feedback, self-expression and sense of control can increase students' instructional motivation, so it is great for teachers to improve teaching activities. (Luarn et al., 2023). Finally Lolita is a new finding media that is feasible to be part of the instructional media game based on teaching learning the Quran.

## Conclusion

The development of Islamic nuanced Tajweed Ludo teaching media called Ludo Lintas Tajweed (Lolita) uses the Hannafin and Peck development model which has three phases including: (1) needs analysis includes knowledge, characters and media. (2) Design includes creating a Lolita learning media storyboard, using Microsoft word and PicsArt applications with 8 components (game board, question cards, answer cards, trap cards, house cards, bonus cards, pawns and dice); (3) development and implementation in this phase, the media that has been made is ready to be validated by validators which includes validation in the field of media (88%), material (90.7%) and language (80%) to determine the feasibility of the media, at this stage also conducted product trials to small groups with 3 students and large group trials with 9 students. Lolita learning media can be used as a reinforcement of tajweed learning on the hokum *mim sukun* and is taught after students are introduced to the hokum *mim sukun* in general. Lolita games are suitable for ages 7-13 years. Hopefully, this media can be upgraded to digital-based media and various Islamic game-based media can be developed in advance.

## Declarations

### Author contribution statement

The first author focused on the proposal, constructing the media, distributing the instrument, collecting and analyzing the data findings, and making the report. The second author is concerned with designing media and constructing the instruments and the last author is engaged in literature review.

### Declaration of Interests statement

The authors declare that they have no known computing financial interest or personal relationships that could have appeared to influence the work reported in this paper.

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