Analysis validation of gamification fashion photography

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Abstract. The objectives of this study are: 1) developing game interactive for learning photography in fashion, 2) analysis validation of the application. Development of game using the R&D method with Hannafin and Peck Adaptation, which includes several stages, namely needs analysis, design, development, and implementation. In this case, the game can be applied in fashion education student who takes related computer courses in fashion photography. The result of this research are applications about the game of learning how to photograph and the object in Fashion. Analysis validation such as validation value for the aspect of media display obtained 94% results, for the programming aspect it obtained a validation result of 90%, while for the benefit aspect it obtained a value of 90% for the usefulness of media. Based on the average of all components of the instrument question obtained a percentage of 92%. It can be concluded that the media used can help replace the role of lecturers in learning, and students can play the role of a fashion photographer.

1. Introduction
Learning photography is usually obtained from specialized courses [1] or courses on subjects about photography. But the applied computer courses applied to fashion students at Surabaya State University were given at 2-4 meetings so that the basics of photography could be exploring in other subjects. The learning that done is direct learning so students can hold, feel, try the camera to produce photos that match the fashion field.

When students do not conduct direct education with lecturers, they can use other supporting media such as animation media or learning media that explain photography [2]. It becomes an opportunity to develop interactive learning media for students to explore photography material.

In a study entitled Creative Digital Worksheet Base on Mobile Learning states that digital paper-based learning media get excellent and effective results as a learning medium, then student work is done with student worksheets using mobile [3]. The strength of animation media has advantages such as overcoming abstract learning into concrete, overcoming the limitations of equipment, helping the boundaries of the human [4] so that animated media is the right media that can explain how the camera works. Besides interactive animation media can facilitate the user in the learning process [5] because the user can operate as desired through the button provided. The creative game as media can be made
by changing the function of the camera to a different color photo, the other term is false-color [7]. Creativity can be realized by seeing examples of inspiration that already exist then imitate and modify [8]. Many teachers have used the role-playing method effectively to help solve problems between classes in the classroom and to teach human relations skills in the classroom [13].

In connection with the pandemic coronavirus that is happening, it is increasingly strengthening teachers to develop media [6] that make fashion students use the media as if they are professionals such as photographers and play a role in creating creative portfolios in the field of fashion.

1.1. Gamification
Gamification is the integration of game elements and game thinking in activities that are not games. The game has several distinctive features that play an important role in gamification [11]:

- **users are all participants** - employees or clients (for companies), students (for educational institutions);
- **challenges/tasks** performed by users and developing towards the specified goals;
- **points** accumulated as a result of carrying out the task;
- **the level** the user passes depends on the points;
- **badges** that serve as gifts for completing actions
- **user rank** according to their achievements.

1.2. Content creation and educational activities for gamification
Educational content must be interactive, interesting, and rich in multimedia elements [11]

- **Various performances** - learning activities need to be designed so students can repeat them in the case of the failed attempt. It is very important to create conditions and opportunities to achieve the ultimate goal. As a result of repetition, students will improve their skills.
- **Eligibility** - learning activities must be attainable. They must be adjusted and adjusted to the level of potential and skills of students.
- **Increasing the level of difficulty** - each subsequent assignment is expected to be more complex, requires more effort from students, and by the knowledge and skills, they have just acquired.
- **Various paths** - to develop a variety of skills in learners, they must be able to achieve the objectives by various pathways. This allows students to build their strategies, which is one of the key characteristics of active learning

2. Methods
This research includes the type of research development or Research and Development with Hannafin and Peck adaptation, which consists of 3 stages, namely Needs asses (needs analysis), design (design), Develop & Implement (development and implementation) [12]:

2.1. Needs Assess Stage State of the classroom analysis includes the availability of learning tools, media, and learning methods used are limited to 2-4 meetings that teach about basic photography to fashion photography.

2.2. Design Stage This stage includes the learning media flowchart, flowchart, and storyboard. The flow of interactive animation media is the initial display consisting of five menus, namely instructions, material, simulations, quizzes, and about, as figure 1.

- **Hint menu**, Users can see brief instructions for using interactive animation media, making it easier for users to use media.
- **Material menu**, The material menu is divided into five submenus namely material 1, material 2, material 3, material 4, and material 5, each menu contains an animated learning video.
- **Simulation menu**, The simulation menu contains a camera simulator with shooting angle material. Here students can set the angle of shooting, iso, diaphragm, and shutter speed.
- **Quiz Menu**, The quiz menu contains 10 multiple-choice questions.
2.3. Development and Implementation Stage. This stage consists of developing animated video material, developing games, then validated by expert lecturers, after which it is tested on the 2017 fashion designation students.

2.4. Data Analysis. Expert validation analysis is carried out by gathering experts to assess the media to find out the media shortcomings.

Validation Percentage (%) = \frac{\text{Total score}}{\text{Score of criterion}} \times 100\%

Information:
The score of criterion = Maximum score of each item \times \sum \text{score of item} \times \sum \text{validator}

| Value of percentage | Interpretation       |
|---------------------|----------------------|
| 0 – 20%             | invalid              |
| 21 – 40%            | Less valid           |
| 41 – 60%            | Valid enough         |
| 61 – 80%            | Valid                |
| 81 – 100%           | Very Valid           |

3. Results and discussion
The game which was created using Adobe Flash CS6 and designed for photographic material on applied computer courses, with the following display design:
3.1. Initial Display

![Figure 2. Initial Display of MANTRA.](image)

Figure 2 is the initial display of the game (MANTRA). In this display, the of the game is MANTRA (Interactive Animation Media), as well as the material to be discussed in the media which is the angle of shooting to show that this media is specifically designed for digital photo composition subjects and discusses the material of the angle of shooting.

3.2. Menu Display

![Figure 3: Menu Display.](image)

Figure 3 shows the menu display instructions menu, simulator menu, material menu, quiz menu, and menu about. In this view, the user is free to choose the desired menu.

3.3. Display Simulator

![Figure 4. Camera Simulator Display.](image)

Figure 4 shows the simulator menu display containing an interactive camera simulator where the user can make several settings namely the angle of shooting, aperture, and iso. Besides, users can also take photos by clicking on the button with the camera picture.
3.4. Display Photo Results

Figure 5. Display Photo Results.

Figure 5 shows the display of photos the user can see the images after setting the angle of shooting, Aperture and ISO before, besides the user is given the option to save the photos by clicking the disk image button or return to the camera simulator menu by clicking the left arrow button.

3.5. Quiz Display

Figure 6. Quiz Menu Display

Figure 6 shows the quiz display contains 10 multiple choice questions that are randomized. The value will increase by 10 for each correct answer.

3.6. Media Validation Results

Media validation is divided into three aspects with 13 indicators broken down. Each of these aspects is aspects of media appearance, programming, and usefulness. Validation results are obtained from six validators. The following are the results of media validation in graphical form.

Figure 7. Media Validation

Based on figure 7 the validation value for the aspect of media display obtained 94% results, for the programming aspect it obtained a validation result of 90%, while for the benefit aspect it obtained a value of 90% for the usefulness of media. Various performances are 89%, eligibility is 87%, increasing
the level of difficulty is 88%, and various paths are 89%. Based on the average of all components of the instrument question obtained a percentage of 92%. Media validation results are included in the category of very valid for use in learning digital photo composition.

3.7. Completion of Psychomotor creativity results

Student learning outcomes obtained from the post-test value of psychomotor questions after using the game of MANTRA. The average grade value of 86 which is usually only an average grade of 78, of all 80 students all completed shown as figure 8. Every time students do the work according to their role, then produce work is always consulted with lecturers to get the right direction, most likely this is what causes students to score high

![Psychomotor Learning Outcomes Graph](image)

Figure 8. Student Psychomotor Learning Outcomes Graph

4. Conclusions

Learning with games can be done independently so that it is expected to be fun and can portray the tasks themselves to be done so that the results of creativity can be satisfying. As research that produces media based on augmented reality to learn about the composition of photographs [9].

Based on the validation of media experts, this media gets a percentage of 92% and is declared very valid for use. The average value of class A is 89.5, while class B is 86.5. The ordinary creativity of class A with an amount of 86.6, Class B, with a value of 85. It can be concluded that the media used can help replace the role of lecturers in learning, and students can play the role of a fashion photographer.

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