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Multimedia-Assisted Learning in 2D Animation Education

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ABSTRACT

The advent of the digital era has significantly transformed the educational domain, fostering the incorporation of technology within the learning process to enhance efficacy and foster active participation among students. Innovative learning approaches are necessary to overcome the problems in conventional learning when it comes to 2D animation, which is a valuable asset in education, entertainment, and creative industries. The objective of this study is to create an interactive multimedia platform that can enhance proficiency in 2D animation by employing an educational, captivating, and inspiring design. This study employs the multimedia development life cycle approach to create an interactive educational tool that facilitates students' acquisition of fundamental concepts in 2D animation and the cultivation of practical proficiencies. The findings indicate that the utilization of interactive multimedia holds promise in enhancing students' comprehension of the subject matter, fostering motivation, and cultivating interest in the acquisition of knowledge pertaining to 2D animation. Consequently, this contributes significantly to the realm of contemporary digital education.

Keywords:
Interactive Multimedia Learning, 2D Animation, Digital Learning Animation Skills

INTRODUCTION

In the contemporary digital landscape, the utilization of 2-dimensional (2D) animation holds significant significance across several domains, encompassing education, entertainment, and the creative sector. Proficiency in 2D animation is a useful asset that facilitates the production of captivating and educational visual content. Nevertheless, the process of learning 2D animation frequently encounters obstacles, including the absence of engaging and interactive educational materials, as well as traditional instructional approaches that fail to actively engage students (Pandansari & Gafur, 2016) (Sutrisno et al., 2018). The utilization of interactive multimedia in the context of 2D animation education has significant opportunities for addressing these challenges, owing to the progress made in technology. The advancement of information and communication technology (ICT) has prompted the education sector to swiftly embrace technological integration into the learning process (Paramansyah & SE, 2020; Sutrisno et al., 2017). This includes the utilization of mobile devices to enhance the educational experience within schools.

Developing an engaging and enjoyable learning experience is crucial due to the convenience of online resources in facilitating the distribution of information (Dewantara et al., 2022; Suhardjono et al., 2022) and utilizing technology-driven educational materials. Teachers play a pivotal role in facilitating digital-based learning (Hasad et al., 2018; Muamar et al., 2021a). This implies that educators possess the necessary skills and knowledge to effectively utilize digital-based media in order to develop and implement interactive learning materials that facilitate the learning process (Abdullah et al., 2019; Solong & Bobihu, 2020). Additionally, teachers have the ability to devise instructional approaches that incorporate technology, such as interactive learning media.

Technology can be utilized to enhance the learning process by including interactive learning media. This approach aims to engage students and promote their interest in learning. Additionally, the utilization of learning media to visualize complex content is anticipated to facilitate the comprehension of challenging information. Enhancing proficiency in 2D animation necessitates the acquisition of instructional techniques that are not only efficacious but also capable of augmenting student motivation and engagement. Conventional approaches frequently prove ineffective in establishing a conducive and satisfactory educational setting that promotes a comprehensive and profound learning encounter(Livana et al., 2021; Muamar et al., 2021b). However, the limited access to contemporary tools and technology in the field of 2D animation may impede students' ability to cultivate the necessary creative and technical proficiencies demanded in the professional realm. Hence, it is imperative to incorporate additional dynamic and interactive learning solutions in order to enhance the educational experience of 2D animation(Lim et al., 2020).

The research goal is that interactive multimedia will help students better understand the basic concepts of 2D animation and improve their practical skills through interactive exercises and simulations. This is based on an explanation of how technology has grown to support education and several literature reviews about the use of interactive learning media in schools. A nice-looking dynamic multimedia design can get students more excited and motivated to learn 2D animation, which makes the process more fun and interactive.

METHOD

The multimedia development life cycle model(Mustaghfaroh et al., 2021) is utilized in the media development approach. This model provides a specific explanation of the steps of data analysis that are involved in the process of media creation. The information used in this study was gathered by means of the distribution of questionnaires via Google Form to students attending vocational schools. The questions were designed to inquire about the students' comprehension of the process of creating 2D animation and the content that they were exposed to during the learning process(Sugiyono, 2017). The purpose of this is to determine the level of comprehension that students have of the subject matter, and it is possible for students to provide input concerning material points that can be presented on the interactive media application that has been developed.

Design and Build Concept

The fundamental principle underlying the design of interactive multimedia learning animation encompasses two crucial criteria within the realm of interactive media. Firstly, the

interactive media to be constructed should encompass a diverse range of informative content pertaining to the nature of animation, the twelve principles governing animation, and fundamental tutorials on the utilization of two-dimensional animation processing software. 2) The interactive medium is anticipated to possess persuasive qualities, hence enhancing students' engagement with the educational content being presented. This research employed the notion of "simplicity" or simplicity in the presentation of learning materials for interactive media based on the aforementioned criteria. The term "simplicity" refers to the act of conveying messages in a manner that is not excessively intricate, but rather succinct, simple, and unambiguous.

Software Analysis

Software or apps are very important for making digital media because they let you make the work. There are a lot of different kinds of software that can help you make good digital works. For example, Adobe Animate is the main software used to make vector drawings and animations for TV shows, online videos, websites, and web apps. Adobe Illustrator is a program for working with vector drawings and images and making changes to them. Adobe Premiere is a tool for editing videos. It is part of Adobe Creative Suite, which is a set of programs made by Adobe Systems for graphic design, video editing, and making web apps. As the name suggests, Adobe Audition is a tool for working with audio and video files. We can record sound, make the sound better, add sound effects, and mix different sound tracks into one track with Adobe Audition.One app that can change the format of media items like pictures, videos, sounds, etc. is Format Factory. With Format Factory, you can not only change video files, but you can also make them smaller.

Multimedia Menu Flow

The beginning, which has a start button to start the interactive media, is the first thing that will be shown in this interactive multimedia design. The main menu, which has material, jobs, and profiles, shows up when you press the "Start" button. There are four materials you can choose from when you press the "material" button. They are "what is two-dimensional animation," "twelve animation principles," "two-dimensional animation techniques," and "two-dimensional animation practice." If you click on the "what is two-dimensional animation?" button, a definition of two-dimensional animation will show up. Then, press the "twelve principles of animation" button. This will show you the twelve basic animation rules you will learn along with some examples. Two animation methods will show up when you press the two-dimensional animation technique button: frame by frame and tweening. When you press the animation practice button, you will see an intro to Adobe Animate CC, as well as practice with frame-by-frame animation and tweening animation. If you go back to the main screen and press the "Task" button, you'll see instructions on how to make a simple animation example that were already covered in the material. After that, go back to the main page and press the profile button. This will show you the interactive media maker's profile.

RESULTS AND DISCUSSION

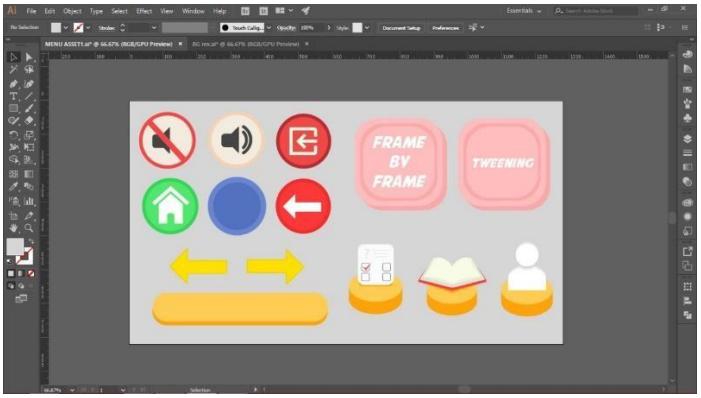
Production Stage

After everything is prepared properly, then you can continue with the animation production process stages and the techniques used in making Interactive Media.

Animation Asset Creation

In creating assets such as backgrounds, character preparation, buttons for interactive media, application icons and supporting objects, what is done is to draw them digitally using Adobe Illustrator and Adobe Photoshop CS Six software.

Figure 1. Application icon



Figures2. Button icon

Audio

For audio in the form of sound effects and background sound, the author downloaded it from the youtube.com site and the audio downloaded is audio that is free from copyright.

Voice Over

In making voice overs, the author writes a script then records the voice over using a mobile phone and edits it to include it in a video tutorial and character using Adobe Audition software.

Embodiment of Animation

After all the assets are prepared, the author then starts structuring the assets and animating the assets that need to be animated. In this stage the author uses Adobe Animate CC software.

Figure 3. Arranging Animation

Finishing Stages

Then the process continues to the Finishing stage. In this stage, the animation file that has been exported will be given additional sound effects, background sound, voice over and additional effects as needed. And after that it will be published as an Android application. In this stage, use Adobe Animate and Format Factory software.

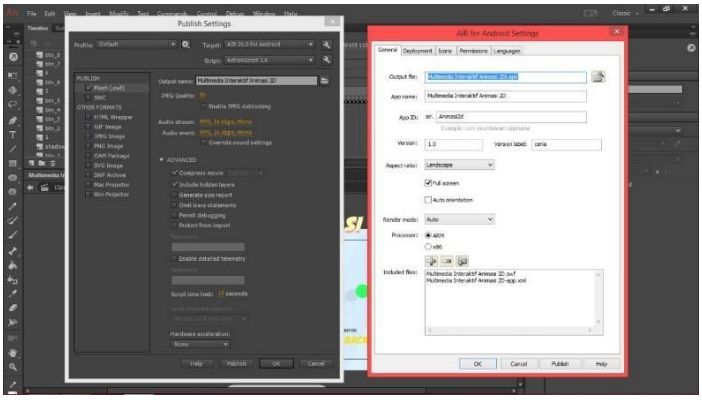


Figure 4. Publishing Interactive Media to Apk (Android)

Multimedia Display

The following is a preview of interactive multimedia learning 2D animation which can be seen in the image below.

Figure 5. Intro view

Figure 6. Display of Animation Engineering Material

Figure 7. Display of Animation Practice Materials

Based on Figure 5, it can be explained that in interactive multimedia learning 2D animation, there is an intro display that appears at the beginning when the multimedia is running. Next, there is a menu display of material related to learning 2D animation. In Figure 6 you can see one of the materials from the animation technique which can be clicked and displays related material information. Furthermore, in figure 7 you can see that there is material from animation practice which is equipped with material information in the form of text, as well as animation from practical animation making material.

CONCLUSION

The research findings indicate that interactive multimedia has emerged as a highly effective and engaging medium for learning 2D animation. This media employs a design that prioritizes simplicity, informativeness, and persuasiveness. It provides a novel learning strategy, enhances comprehension of intricate content, and boosts students' motivation and enthusiasm for learning 2D animation. The utilization of information and communication technology (ICT) in the realm of education has demonstrated its capacity to surmount obstacles encountered in traditional learning approaches, hence facilitating a more comprehensive and profound educational encounter for students. The findings indicate that incorporating interactive multimedia into 2D animation education can enhance students' learning experience, enhance comprehension of the subject, and promote the acquisition of practical animation abilities. This highlights the significance of incorporating adaptability and innovation into instructional approaches in order to equip students with pertinent competencies in the digital age.

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