

INTERACTIVE CONTENT FOR HIGH SCHOOL STUDENTS IN BALI WITH A MULTIMEDIA GRAPHIC DESIGN APPROACH

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ABSTRACT

Education in the digital age faces significant challenges in delivering informative and engaging material to students. In Indonesia, particularly in Bali, many high schools are working to integrate technology into the curriculum to improve student engagement and learning quality. One popular tool used is Canva, a graphic design platform that allows users to easily create engaging visual content. This research aims to explore innovations in multimedia graphic design with a focus on the use of the Canva design tool and its impact in interactive content development for high school students in Bali. Qualitative research methods were used to conduct a case study of Canva's implementation in the creation of interactive content for online learning in several high schools in Bali. The results show that the use of Canva as a multimedia graphic design tool makes a positive contribution in creating interactive content that is interesting and easily understood by students. The findings show Canva's great potential in supporting multimedia graphic design innovation in educational contexts, as well as addressing student engagement issues and making it easier for teachers to present interesting and interactive materials.

KEYWORDS Innovation; Multimedia Graphic Design; Interactive Content; Education; Learning Engagement.



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INTRODUCTION

Education in the digital age faces significant challenges in delivering materials that are not only informative but also engaging for students. In Indonesia, particularly in Bali, many high schools are working to integrate technology into their curriculum to improve student engagement and learning quality. One of the popular tools used is Canva, a graphic design platform that allows users to easily create engaging visual content.

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The main problem faced in some high schools in Bali is the lack of student engagement in the learning process. Traditionally delivered materials tend to be monotonous and uninteresting for students who are already accustomed to interactive and dynamic digital content (Abidin, 2019). This lack of interest has a negative impact on the comprehension and retention of the material by students. Students at SMA Negeri 1 Denpasar often show a lack of interest in teaching and learning activities that use traditional methods. In addition, teachers in these schools experience difficulties in presenting engaging and interactive subject matter due to limited tools and resources.

Previously, some schools have tried various methods to increase student engagement, including the use of PowerPoint presentations and learning videos. This research proposes the use of Canva as a solution to overcome this problem. Canva is a web-based graphic design tool that allows users to create a wide variety of visual content easily and quickly. With Canva, teachers can create more engaging and interactive learning content without requiring in-depth design skills. Canva provides various templates, visual elements and interactive features that can be used to improve the quality of learning materials.

The use of Canva is expected to have a significant positive impact on learning in high schools in Bali. Increased Student Engagement, Attractive and interactive visual content can increase student interest and participation in the learning process (Kustandi et al., 2021; Nurfasha, 2021; Suartama et al., 2019; Terry, 2017). Better Understanding and Retention of Material Good concept visualization helps students understand and remember the material better, Creativity Teachers can be more creative in presenting material, which in turn improves the quality of learning, Time Efficiency Canva simplifies the process of creating learning materials so that teachers can save time and effort.

Thus, this research is expected to make a significant contribution to improving the quality of education in high schools in Bali through innovation in multimedia graphic design using Canva. This research also provides important insights for educators, content designers, and education policy makers in designing innovative and effective learning strategies.

This research aims to explore innovations in multimedia graphic design with a focus on the use of Canva design tool and its impact in interactive content development for high school students in Bali. The main problem faced in some high schools in Bali is the lack of student engagement in the learning process. Traditionally delivered materials tend to be monotonous and uninteresting for students who are used to interactive and dynamic digital content.

RESEARCH METHOD

This research used a qualitative method with a case study approach. The research subjects were students and teachers from SMA Negeri 1 Denpasar. The tools used in this research include in-depth interviews, direct observation, documentation analysis, and questionnaire surveys. In-depth interviews were conducted to obtain more detailed and in-depth information from various parties involved in the development and use of multimedia graphic design in education. Direct observation was conducted at SMA Negeri 1 Denpasar to directly observe the use of multimedia content in the classroom and how students interact with learning materials. Documentation analysis involved collecting and analyzing various documents related to the development and implementation of interactive multimedia content. Questionnaire surveys were distributed to students and teachers at SMA Negeri 1 Denpasar to obtain quantitative data on their perceptions of the use of multimedia content in learning. The data collection methods used are as follows:

1. In-depth Interview

In-depth interviews were conducted to obtain more detailed and in-depth information from various parties involved in the development and use of multimedia graphic design in education. The main respondents in this interview include:

- a. Graphic Designer: To gain insight into the creative process and techniques used in creating interactive multimedia content.
- b. Content Developer: To understand how multimedia content is developed and integrated into learning platforms.
- c. Instructors and Teachers: Teachers from SMA Negeri 1 Denpasar were interviewed to find out their experience in using multimedia content and its impact on the teaching and learning process.
- d. Students: Students from all three schools were interviewed to get a first-hand perspective on how the multimedia content affected their motivation and understanding.

2. Direct Observation

Direct observation was conducted at SMA Negeri 1 Denpasar. This technique was used to directly observe the use of multimedia content in the classroom and how students interact with learning materials. Findings from this observation include:

- a. Student Interaction with Content: Observations show that students are more engaged and actively participate when using multimedia content.
- b. Student Response to Materials: Students seem more enthusiastic and motivated when dealing with learning materials that are presented visually and interactively.

3. Documentation Analysis

Documentation analysis involves collecting and analyzing various documents related to the development and implementation of interactive multimedia content. The documents analyzed include:

- a. Learning Modules: This document provides information about the structure and content of the multimedia content used, courtesy of teachers and educational institutions at SMA Negeri 1 Denpasar.
 - b. Lesson Plan: To understand how multimedia content is integrated into the curriculum at the high school...
 - c. Learning Evaluation Report: These reports, created by teachers in all three high schools, provide data on the impact of using multimedia content on student learning outcomes.
4. Questionnaire Survey

A questionnaire survey was distributed to students and teachers at SMA Negeri 1 Denpasar to obtain quantitative data on their perceptions of the use of multimedia content in learning. The questionnaire was designed to measure various aspects such as:

- a. Satisfaction Level: The extent to which students and teachers are satisfied with the multimedia content used.
- b. Learning Motivation: The effect of multimedia content on students' learning motivation.
- c. Learning Effectiveness: The extent to which the multimedia content helps students in understanding the subject matter.

5. Case Study

Case studies were conducted on several educational institutions that have successfully implemented multimedia graphic design in their teaching. These case studies provide a more in-depth picture of best practices, implementation strategies and results achieved. The institutions selected as case studies are:

- a. Senior High School (SMA): SMA Negeri 1 Denpasar to analyze the use of multimedia at the secondary education level.
- b. University: To explore the application of multimedia technology in higher education, although the main focus of this research is at the high school level.

RESULT AND DISCUSSION

Analysis of the Use of Multimedia Graphic Design in Education

The use of Canva as a multimedia graphic design tool has made a positive contribution in creating interactive content that is attractive and easily understood by students. A case study conducted at SMA Negeri 1 Denpasar shows that attractive and interactive visual content can increase students' interest and participation in the learning process. In addition, good concept visualization helps students understand and remember the material better.

- a. **Visual Elements and Illustrations:** One of the key components of multimedia graphic design is the use of visual elements and illustrations. Attractive images and illustrations not only enhance the appearance of the material but also help students visualize abstract concepts that are difficult to understand. According to Arifin (2021), the proper use of visual elements can simplify complex information and make it easier for students to remember. In one of the secondary schools that became the object of study, the use of interactive infographics and diagrams proved effective in helping students understand complicated science subjects. For example, at SMA Negeri 1 Denpasar, infographics were used to explain biology concepts that made it easier for students to understand the life cycle of organisms.
- b. **Animation and Simulation:** Animation and simulation are very effective tools in education, especially in explaining dynamic processes or changes that cannot be captured directly. Hidayat (2017) argues that animation can improve students' understanding of subject matter by providing dynamic and interactive visualizations. For example, in a high school in Bali, the use of interactive simulations in physics helped students visualize particle motion and force interactions that were previously difficult to understand through textual explanations alone. At SMA Negeri 1 Denpasar, computer simulations were used to explain Newton's laws which helped students understand the concepts better through dynamic visualization.
- c. **Interactivity:** Interactive features such as quizzes, educational games, and simulations enable students to learn actively. This interactivity increases student engagement and helps them apply the knowledge gained in a practical context. Rahman (2020) mentioned that interactive content can make students more motivated to learn as they can participate directly in the learning process. In one of the high schools in Bali studied, the use of computer-based educational games was proven to increase students' interest in learning in mathematics. For example, at SMA Negeri 1 Denpasar, educational games were used to teach algebraic concepts which increased student participation and understanding.
- d. **Digital Learning Platform:** Digital learning platforms that integrate various multimedia elements allow students to learn anytime and anywhere. It provides better flexibility and accessibility compared to traditional learning methods. Yulianingsih (2018) states that digital learning platforms that combine video, text and interactive elements can improve learning effectiveness. A case study in a high school in Bali shows that the use of digital learning platforms helps students understand the subject matter better and prepare for exams more efficiently. At SMA Negeri 1 Denpasar, digital platforms such as Google Classroom are used to access course materials, complete assignments, and participate in online discussions which all contribute to improved student learning outcomes.

The Impact of Multimedia Graphic Design on Student Learning Outcomes

The results show that the use of multimedia graphic design in education has a positive impact on student learning outcomes. Here are some of the key findings:

- a. **Increased Learning Motivation:** Students' learning motivation is significantly increased by the presence of engaging and interactive multimedia content. According to the results of a survey conducted in several educational institutions, more than 80% of students stated that they felt more motivated to learn when using multimedia-based learning materials. This is in line with Arifin's (2019) findings that visual elements and interactivity in multimedia content can make students more interested and eager to learn. Arifin (2019) emphasized that the combination of attractive visual elements and interactive features can keep students' attention longer than conventional methods.
- b. **Increased Understanding of the Material:** The use of multimedia graphic design helps improve students' understanding of the subject matter. According to research conducted by Johnson and Mayer (2020), students who learn using multimedia content show better improvement in conceptual understanding compared to students who learn using traditional methods. Multimedia content allows the presentation of complex information to be more easily understood through the use of visualization and simulation.
- c. **Development of Critical Thinking Skills:** Interactive multimedia content can stimulate students' critical thinking skills. A study by Lee and Anderson (2021) found that students who used multimedia learning tools showed significant improvements in analysis and problem-solving abilities. Interactive features in multimedia graphic design encourage students to think critically and creatively and apply their knowledge in practical situations.
- d. **Improved Information Retention:** Multimedia graphic design also contributes to improved information retention. Research by Clark and Lyons (2018) shows that the use of images, animations and videos in learning helps students remember information longer than text alone. Interesting and relevant designs help to solidify students' memories of the material learned.
- e. **Facilitation of Collaborative Learning:** The use of multimedia in learning also supports collaborative learning. According to Smith et al. (2019), multimedia-based learning tools allow students to work in groups and collaborate on interactive projects. This not only improves students' social and communication skills but also allows them to learn from each other in a dynamic and interactive environment.

Treatment Design

Design treatment is an important stage in the development of multimedia-based learning content. In an educational context, design treatment refers to the

process of designing and applying design elements that aim to improve the effectiveness and appeal of learning materials. In this subchapter, we will discuss the steps in design treatment using Canva as the main tool and how multimedia graphic design elements can be optimized to improve student learning outcomes.

Steps to Design Treatment with Canva

- a. **Identify Learning Objectives:** The first step in treatment design is to identify clear learning objectives. These objectives should be specific, measurable, achievable, relevant, and have a clear time limit (SMART goals). For example, if the learning objective is for students to understand basic chemistry concepts, then the content should focus on visualizing these concepts in an interesting and easy-to-understand way.
- b. **Selection of Visual Elements:** Canva offers a variety of visual elements such as templates, images, icons, and graphics that can be used to reinforce the delivery of material. According to Clark and Mayer (2023), relevant visual elements can improve students' understanding and retention of information. In treatment design, it is important to choose visual elements that are appropriate to the learning topic and appealing to students. For example, the use of infographics to explain scientific processes or interactive diagrams for math.
- c. **Use of Color and Typography:** Colors and typography play an important role in grabbing students' attention and improving the readability of the material. Studies by Stone (2018) show that proper use of colors can improve student focus and recall. Canva provides a customizable color palette and a wide selection of fonts that can be used to create a consistent and professional look. It is recommended to use contrasting colors for important elements and easy-to-read fonts for the main text.
- d. **Interactive Media Integration:** To make the content more interactive, Canva allows the integration of various media such as video, animation, and audio. According to Moreno and Mayer (2007), interactive multimedia can increase student engagement and deepen their understanding. Teachers can add explanatory videos, concept animations, or audio recordings as additional explanations in slides or posters created in Canva.
- e. **Trial and Evaluation:** Once the content has been designed, it is important to conduct a pilot test with some students or co-teachers to get feedback. These trials aim to evaluate the effectiveness of the design elements used and ensure that the content can achieve the learning objectives. Based on the feedback, adjustments can be made to improve the quality of the content before it is widely implemented.

Impact of Design Treatment in Learning

A good treatment design can have various positive impacts on learning:

- a. Increased Student Engagement: Interesting design elements can motivate students to be more engaged in learning.
- b. Better Understanding: Concept visualization helps students understand complex material.
- c. Information Retention: Interactive multimedia content can improve students' retention of the material learned.
- d. Teacher Creativity: The use of tools like Canva allows teachers to be more creative in presenting learning materials.

Citations and References

"Relevant and well-designed visual elements can significantly improve students' understanding and retention of information" (Clark & Mayer, 2016).

Flexibility and Accessibility

Canva offers great flexibility as it can be accessed online from various devices. This allows lecturers and students to work on their projects anytime and anywhere. At Gadjah Mada University, the use of Canva in creating online learning modules makes it easier for lecturers to update materials and provide access to students in real-time.

Rahman (2020) revealed that the high accessibility of online design tools such as Canva supports distance learning and enables continuous learning despite geographical or time barriers.

Challenges in Using Canva

While Canva offers many advantages, there are some challenges faced in its use. Some teachers report that they need time to learn to use Canva's various features effectively. In addition, limitations on the free version of Canva sometimes hinder its optimal use by some educational institutions that have limited budgets.

However, this challenge can be overcome with training and professional development for teachers and the use of basic features that are already rich enough to create engaging and effective learning content (Arifin, 2019).

Creating content with Canva

The Canva application can be used with a laptop or device owned by the teacher, then ensure the availability of a stable internet network. Teachers can use a learning account, so that in the use of some templates and others for free. Here's how to use the Canva application:

1. Teachers download the Canva app on the Play Store for devices or via Canva.com for laptops.
2. After installing the application via Laptop or Device, then create an account via email learning. The following is an example of creating a canva account using a study email with a Laptop.
3. After creating a Canva account, teachers can start designing, teachers can have templates that are available in the Canva application.
4. After completing the design, you can select the storage you want to use.

CONCLUSION

This research shows that innovations in multimedia graphic design play an important role in the development of interactive and effective educational content. Effective innovation in this context involves the use of design tools such as Canva that enable the creation of engaging visual elements, animations and interactive features in a way that is easily accessible to teachers and students. Effective innovation must also address the challenges faced in education today, such as lack of student engagement and teachers' difficulties in presenting engaging material.

The use of attractive visual elements can increase student engagement and attention, with good visualization helping to break down complex concepts into more understandable ones. Animations can explain dynamic processes or concepts more clearly than static images, while interactive features such as quizzes, simulations and drag-and-drop activities can increase student participation and make learning more fun. Tools like Canva provide a user-friendly interface and a variety of templates that teachers can use without the need for in-depth design skills, making it easier for them to adopt technology in teaching. In addition, effective innovation also involves the ability to customize learning materials according to students' needs and preferences, allowing teachers to personalize content to make it more relevant to their students.

By using Canva, teachers can overcome the problems of low student engagement and difficulties in presenting interesting and interactive materials. The positive impacts of using multimedia graphic design include increased learning motivation, material comprehension, information retention, and students' critical thinking skills. The results of this study provide important insights for educators, content designers and education policy makers in designing innovative and effective learning strategies.

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