

Interactive Animation-Based Learning Media Using Plotagon Studio for a Digital Transformation Course

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Abstract

The rapid advancement of digital technology has significantly transformed educational practices, requiring lecturers to develop innovative, interactive, and technology-integrated learning media that can enhance student engagement and improve learning effectiveness. In higher education contexts, digital learning media plays an essential role in creating meaningful learning experiences by facilitating knowledge delivery through more accessible, engaging, and learner-centered approaches. One of the emerging technologies with potential applications in education is Plotagon Studio, a 3D character-based animation application that enables educators to present learning materials through visual storytelling, animated representations, and interactive communication. This study aims to examine the utilization of Plotagon Studio as an interactive animation-based learning medium in the Digital Transformation course. This research employed a descriptive qualitative approach through a literature review to analyze the pedagogical potential and effectiveness of animation-based learning media in supporting digital learning processes. The findings reveal that the integration of Plotagon Studio contributes to improving students' learning motivation, conceptual understanding, creativity, communication skills, and digital literacy competencies. Furthermore, the implementation of interactive animation media supports the principles of 21st-century learning by promoting student-centered learning environments, active participation, critical thinking, and technological competence development. Therefore, Plotagon Studio represents a promising and effective digital learning medium that can support instructional innovation and enhance the quality of learning experiences in the Digital Transformation course.

Keywords: learning media, Plotagon Studio, digital transformation, interactive animation, digital literacy.

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1. Introduction

Education is one aspect of human life that has undergone significant changes due to the development of information and communication technology in the digital era. Rapid technological developments have completely transformed the way people obtain, manage, and share information. Artificial intelligence, cloud computing, mobile devices, the internet, and various digital learning platforms are now essential elements in educational activities (Crompton & Burke, 2023). According to Otto et al. (2024), to face the challenges of the modern world, educational institutions, especially at the university level, are required to change their approach to the learning process. Interactive, collaborative, creative, and student-centered learning methods are now replacing the one-way delivery pattern in education. This approach has been proven to increase active student engagement, learning independence, and

the effectiveness of the learning process in the digital era (Amiruddin et al., 2023).

The use of technology such as computers, laptops, or smartphones in teaching and learning activities is not the sole definition of digital transformation in education. Rather, this transformation is a comprehensive process of change encompassing instructional strategies, material delivery techniques, learning resource management, and forms of interaction between teachers and students. Beyond focusing on the application of technology, this shift also aims to modify the educational paradigm to better suit student needs and the advancement of the digital society (Fernandez et al., 2023). The use of digital technology is expected to create a more adaptive, efficient, and flexible learning environment (Otto et al., 2024). Thus, through various technology-based learning activities, students shift from being passive users of information to active contributors to knowledge construction.

This paradigm shift in education aligns with the demands of 21st-century competency development, which emphasizes the importance of critical thinking, creativity, communication, and collaboration as key competencies students must possess to face global challenges and digital transformation (Van Laar et al., 2019). Furthermore, students are also required to possess digital literacy, problem-solving skills, and the ability to adapt to ever-changing technological developments. Universities, as institutions of higher education, have a responsibility to prepare graduates who not only master academic knowledge but also possess digital competencies relevant to the needs of the workplace and society. Therefore, the learning process needs to be designed in such a way as to support the achievement of these competencies through the use of innovative learning media and technology.

The need to develop 21st-century competencies that place a strong emphasis on critical thinking, creativity, communication, and teamwork aligns with this paradigm shift in education. These competencies are crucial in training students to navigate the increasingly complex, digitalized, and knowledge-based world of work (Van Laar et al., 2019). Students are also required to possess problem-solving skills, digital literacy, and the capacity to adapt to rapidly changing technological contexts. As higher education institutions, universities have an obligation to produce graduates with digital capabilities relevant to the demands of society and the world of work, in addition to their mastery of academic knowledge. Therefore, innovative learning media and technology must be integrated into the learning process to support the acquisition of these competencies.

The use of appropriate learning media can provide various benefits to the learning process. Engaging media can capture students' attention, keeping them focused on the subject matter. Furthermore, interactive media can increase student motivation by presenting material in a more engaging manner. High motivation encourages active engagement during the learning process, encouraging students to participate in discussions, express ideas, analyze problems, and collaborate with classmates to complete assignments, rather than simply listening to the teacher's explanations (Timotheou et al., 2023).

On the other hand, students who learn primarily through lectures without the aid of engaging media often lose interest and motivation. Prolonged oral explanations can cause students to lose focus, which in turn results in less than optimal understanding of the material. This makes it difficult for lecturers to design learning that can effectively maintain students' attention. Therefore, innovation in the use of learning media is essential to provide a more dynamic, engaging learning experience that aligns with the characteristics of today's digital generation. According to Ulayyah & Rosy (2022), it has been proven that the integration of learning technologies

such as interactive media, digital learning platforms, learning videos, and challenge-based learning environments increases student motivation and engagement while providing them with opportunities for more free and flexible learning.

Various digital learning resources that can be used to enhance the learning process have emerged as a result of advances in information technology. Thanks to multimedia-based applications, lecturers can present material in the form of text, graphics, animations, videos, simulations, and educational games. One advantage of multimedia-based learning materials is the variety of communication components that facilitate comprehension. Furthermore, the use of digital media gives students the flexibility to study whenever and wherever they want.

Plotagon Studio is an increasingly popular digital learning tool widely used in classrooms. This application makes it easy for users to create 3D animated films without requiring specialized skills in complex animation design. It offers a variety of features that can be tailored to specific learning needs, such as animated characters, facial expressions, body movements, voiceovers, dialogue, settings, and visual effects. By utilizing these elements, teachers can create engaging educational materials in the form of narratives or simulations, thereby helping students better understand the material being taught. Plotagon Studio's strength lies in its ability to present educational content through relevant and communicative audiovisual formats. Compared to simply reading text or listening to oral explanations, using animated films to convey material provides students with a more concrete understanding of concepts (Yu et al., 2022). Students can better connect theory to real-world situations when they see visualizations of characters engaged in discussions, simulations, or problem-solving. This is especially important for topics like digital transformation in business or the education sector, which require conceptual understanding and analytical skills.

The topic of digital transformation is vast and constantly evolving. It encompasses adjustments to organizational culture, business procedures, service strategies, and the use of digital technology in various aspects of life. The complexity of this topic often makes it difficult for students to understand the connection between theoretical concepts and their real-world application. Therefore, presenting the material through animated films created with Plotagon Studio is a useful alternative means of showcasing real-life examples of digital transformation. Through various case studies presented in animated form, this method allows students to evaluate the implementation of digital transformation while simultaneously understanding the underlying concepts and theories.

Plotagon Studio helps enhance conceptual understanding and makes learning more enjoyable. Students' curiosity can be piqued by animated films featuring communicative characters and captivating storylines, thereby increasing their enthusiasm for learning. Enjoyable learning increases student engagement and motivation, while strengthening retention of course material. These elements contribute to a dynamic, innovative, productive, and student-centered learning environment.

The implementation of technology-based learning that supports digital transformation policies in higher education aligns with the use of Plotagon Studio. To create learning materials that align with the characteristics of digital generation students, lecturers are required to continuously innovate. Such innovation aims to support the achievement of graduate learning outcomes, encompassing knowledge, skills, and attitudes, while simultaneously improving the quality of the learning process. Therefore, the use of animation-based learning materials is an alternative that can provide a more engaging, relevant, and meaningful educational experience.

Research on the use of Plotagon Studio has shown positive results. Mahyulin et al. (2025) reported that Plotagon-based animated video media was categorized as highly valid, highly practical, and effective in increasing student motivation and learning outcomes. Maharani (2025) also demonstrated that Plotagon media had a validity level above 90% and significantly increased student engagement during the learning process.

The use of Plotagon Studio not only improves learning outcomes but also fosters student creativity throughout the learning process. In the era of the digital revolution, college graduates are now required to be creative. The ability to generate original ideas, solve problems, and formulate useful solutions, along with the ability to produce work, are essential aspects of creativity. Therefore, it is necessary to create learning opportunities that provide students with the freedom to experiment, think creatively, and produce work relevant to technological developments.

Students have the opportunity to actively participate in their education through the use of digital learning resources such as Plotagon Studio. Plotagon Studio allows students to act as storytellers, scriptwriters, and creators of animated videos based on the subject matter, unlike traditional training methods that tend to position them solely as recipients of knowledge. Students gain practical experience in transforming concepts into digital products, adding value and deeper meaning to the learning process. Students create animated videos by creating narratives, character descriptions, dialogue scripts, settings, and various multimedia components. Through these activities, students are encouraged to use critical and creative thinking skills to convey

information in a more engaging and communicative manner. Furthermore, students learn how to communicate information effectively using digital media, a skill highly valued in the modern workplace.

Based on this, Plotagon Studio is a useful learning tool that enhances the academic process in higher education. This tool encourages students' creativity, teamwork, and digital literacy, while enhancing their understanding of the course material. Plotagon Studio's interactive, communicative, and easy-to-use features make learning more engaging, contextual, and student-centered, while fostering the 21st-century skills needed to face the challenges of the digital transformation era. Furthermore, using Plotagon Studio helps students improve their digital literacy. Not only do they learn how to use the application, but they also learn to select reliable data, process it into educational resources, and share the results through digital media. As a result, students become creators of innovative and educational digital materials, not just consumers of information. In line with this, Mulawarman and his colleagues stated that the use of Plotagon in learning can improve students' creativity, collaboration skills, and digital literacy. These findings indicate that Plotagon functions not only as a medium for delivering material but also as a means of developing 21st-century competencies, such as creativity, communication, collaboration, and the use of digital technology.

Given the abstract and dynamic nature of the topics covered in the Digital Transformation course, including cloud computing, big data, artificial intelligence, the Internet of Things (IoT), and organizational digitalization, the use of Plotagon Studio is highly relevant. Students can better understand the relationship between theory and practice by viewing various real-world examples of digital transformation presented by lecturers and students through animation. Furthermore, the use of Plotagon Studio to create animated videos facilitates the implementation of project-based learning. Students actively participate in the design, development, and assessment of digital products, fostering a sense of responsibility, independence, creativity, and self-confidence. The completed products can be used by other students as learning materials.

Based on this, Plotagon Studio is a useful learning tool that enhances the academic process in higher education. This tool encourages students' creativity, teamwork, and digital literacy, while enhancing their understanding of course material. Plotagon Studio's interactive, communicative, and user-friendly features make learning more engaging, contextual, and student-centered, while fostering 21st-century skills needed to face the challenges of the digital transformation era.

2. Methods

This study employed a descriptive qualitative method with a library research approach (Sari & Asmendri,

2020). This method was chosen to systematically describe and analyze various research findings regarding the use of Plotagon Studio as a digital learning medium, specifically in the Digital Transformation course. The descriptive qualitative approach allows researchers to gain a comprehensive understanding of the characteristics, benefits, and effectiveness of using interactive animation media to support the learning process without directly collecting data in the field.

Data collection was conducted through a literature review by compiling various relevant scientific sources, including national and international journal articles, books, seminar proceedings, and other academic publications discussing digital learning media, Plotagon Studio, educational animation, digital transformation, digital literacy, and 21st-century learning. All sources were selected based on their topic suitability, credibility, and relevance to the research objectives so that the information obtained has a strong scientific basis.

The collected data were then analyzed using descriptive analysis techniques through the process of identification, classification, comparison, and synthesis of previous research results. The analysis stages were carried out to find similarities, differences, and trends in research results regarding the use of Plotagon Studio in learning. Next, the analysis results are presented narratively to provide a comprehensive overview of Plotagon Studio's effectiveness in improving the quality of learning, learning motivation, creativity, collaboration, and digital literacy of students in the Digital Transformation course. With this approach, this study is expected to provide a strong theoretical basis for the use of Plotagon Studio as a digital learning medium in higher education.

3. Results and Discussions

Plotagon Studio as a Digital Learning Media

Advances in digital technology have led to the emergence of a variety of innovative learning tools that can enhance the effectiveness of educational experiences in higher education. One popular digital learning platform is known as Plotagon Studio. Plotagon Studio is an application for creating 3D animated videos, allowing users to easily produce learning materials without requiring specialized skills in animation design. According to Mubarak & Setiawan (2023), Plotagon Studio is an animation-based program designed to simplify and effectively create animated videos. This software offers a variety of functions, including animated characters, facial expressions, physical movements, speech, audio, visual enhancements, and customizable background settings to suit the needs of learning content. By utilizing these features, lecturers and students can produce engaging, interactive, and relevant learning videos, thereby improving the standard of learning content presentation.

As a learning tool that utilizes audio and visual elements, Plotagon Studio offers the benefit of conveying information in a more realistic way than simply sharing content through text or traditional lectures alone. The use of animation allows for the representation of abstract ideas through narration, demonstrations, or discussions between characters, which helps simplify understanding for learners. The use of animation allows for the effective presentation of conceptual content because it delivers information through animated videos that promote a more engaging educational experience so that students receive visual and auditory input simultaneously. This contributes to increased student focus, engagement, and retention of the subject matter being studied. In addition, the use of animated videos developed with the help of Plotagon has been proven to have a positive impact on improving student learning outcomes, learning interest, and learning motivation (Nuryadi et al., 2025).

In the Digital Transformation course, the use of Plotagon Studio has a high level of relevance because much of the material is conceptual and dynamic. Therefore, the choice of media in this course significantly influences the success of learning. Thus, learning media can facilitate the learning process, particularly in helping students understand and communicate ideas they may not yet grasp (Mubarak & Setiawan, 2023). Therefore, learning topics such as the Internet of Things (IoT), Artificial Intelligence (AI), Big Data, Cloud Computing, Cybersecurity, Digital Business, and business process transformation are often difficult to grasp when explained solely through theory. By using Plotagon Studio, lecturers can present simulations of the application of digital technology in various fields, making it easier for students to understand the relationship between concepts and their implementation. For example, the concept of the Internet of Things can be visualized through communication between smart devices, while Artificial Intelligence can be demonstrated through chatbot services or AI-based recommendation systems. This kind of visual representation helps students understand the course material in a more realistic and relevant way.

In addition to serving as a platform for delivering learning content, Plotagon Studio also serves as a resource to enhance students' learning experiences. Media that utilizes animation fosters a more engaging learning environment compared to traditional lecture techniques. Students not only absorb information, but also actively participate in understanding the subject matter through the resulting interactive visual displays. Conversations between characters, event representations, and an organized narrative framework help students navigate the learning process more easily. Plotagon provides a variety of characters that can be selected directly, while also providing facilities for users to design characters according to their needs (Robi'ah, 2026). Furthermore, according to Robi'ah

(2026), this application allows users to adjust the dialogue and movement of characters, making the process of creating animated videos easier and more aligned with learning objectives. Therefore, the use of Plotagon Studio can function as a suitable learning medium and is tailored to the characteristics of the digital generation, who are accustomed to acquiring knowledge or information through visual and multimedia channels.

Increasing Student Motivation and Engagement

Motivational learning is a key element influencing the success of an educational experience. Highly motivated students often demonstrate greater participation in their studies, possess a deep curiosity, and tend to achieve superior academic results. Conversely, boring and non-interactive teaching methods can dampen enthusiasm for learning, resulting in reduced student participation. Therefore, lecturers must select teaching resources that can increase motivation and enhance student engagement throughout the learning process. As explained by Mubarak & Setiawan (2023), effective use of learning media can support smooth learning. The use of Plotagon Studio as a learning media tool can create a more enjoyable learning experience because the material is delivered through engaging animated clips. Presenting material in the form of conversations between characters helps students understand learning developments more effectively than simply reading text or attending lectures. The combination of animation, sound effects, facial expressions, and visual representations fosters a more dynamic learning atmosphere, motivating students to actively engage in the educational process.

Various studies have shown that using Plotagon Studio can improve students' learning motivation. Mahyulin et al. (2025) found that learning resources created with Plotagon can increase learning motivation and the overall effectiveness of the educational process. This improvement occurs because Plotagon media is highly interactive and engaging, aligning with the characteristics of students in the digital age. Presenting material through animated videos can facilitate students' understanding of information while increasing their enthusiasm for the subject matter being studied.

These findings are supported by a study conducted by Maharani et al. (2025), which showed that the use of Plotagon as a learning media tool significantly increased student engagement in their learning activities, thus classifying it as a highly effective learning medium. Students became more participatory in conversations, provided responses to the material, and demonstrated greater curiosity throughout the learning process. These findings highlight that Plotagon Studio can foster a more engaging and student-focused educational atmosphere.

Supporting Digital Transformation Learning

Digital transformation is a rapidly growing field of study, driven by advances in information technology. The material discussed includes not only technological principles but also shifts in organizational culture, innovation in business processes, data-driven decision-making, and the ability to adapt to digital technological advances. Therefore, acquiring knowledge about digital transformation requires a method that connects theory with practice to ensure students achieve a deeper understanding. The application of Plotagon Studio can facilitate learning about digital transformation because it functions as a presentation medium and a tool for project-based learning. Learning that involves creating animated videos can help develop students' thinking skills and can increase their creativity (Sari et al., 2023). Through this method, students can develop animated videos that demonstrate how digital transformation is applied in various sectors, including education, health, government, industry, and commerce. Students must identify a problem, develop a narrative idea, create dialogue, choose characters, and produce an animated video that effectively communicates solutions based on digital technology.

This approach offers a more impactful learning experience because students engage in remembering concepts and utilizing their knowledge to create digital outputs. While creating videos, students enhance their critical thinking skills to assess challenges, innovate in narrative creation, and express themselves skillfully through visual displays (Setiawan et al., 2023). Furthermore, this assignment encourages collaboration, delegation of responsibilities, conflict management, and shared decision-making skills. The use of Plotagon Studio in project-based learning also helps students improve their digital competencies, which are crucial in this era of digital advancement. Students gain the ability to navigate multimedia software, process data, create digital materials, and use technology as a communication and learning tool (Miliou & Angeli, 2023). This exposure equips students with valuable skills for a job market that increasingly emphasizes proficiency in digital technologies.

Research on the application of Plotagon in a digital storytelling technique shows that students experience increased creativity, participation, and meaningful integration of technology into their educational journey (Nadia et al., 2025). Students not only understand concepts at a fundamental level but also demonstrate the ability to express that understanding through engaging digital formats. Therefore, Plotagon Studio serves as a medium that encourages the development of higher-order thinking skills (HOTS) while enhancing students' digital literacy in the era of technology-based education.

Implications for 21st Century Learning

The 4Cs—critical thinking, creativity, communication, and collaboration—are a set of skills emphasized in 21st-century education. When these skills are mastered,

students can work in teams, solve problems efficiently, be creative, and express themselves clearly in both academic and professional settings (Otto et al., 2024). Furthermore, to use technology efficiently and ethically, students must be digitally literate. The development of these competencies must be supported by the learning materials and media used in higher education. In line with the opinion of Lengkong et al. (2023), who stated that to encourage active, collaborative, and student-centered learning, the development of 4C competencies and digital literacy must be methodically integrated into the curriculum through the provision of learning materials, learning strategies, and technology-based learning media.

Plotagon Studio provides features that meet the learning needs of the 21st century. By offering interesting and dynamic content, animated films can increase students' motivation to study. Complex topics are made easier for students to understand through visualization, which increases the effectiveness of the learning process (Saragih & Sirait, 2023). In addition, by creating dialogues and scenarios, student participation in the process of making animated videos encourages the growth of their creativity, critical thinking abilities and communication skills.

Additionally, students' collaborative skills were strengthened when they worked in groups on animated video projects. They gained the ability to collaborate, divide tasks, provide suggestions, and complete projects as a group. These exercises mimicked real-world work environments, which require the ability to collaborate with others and use digital tools to complete various project tasks. According to Beal & Steier (2024), collaborative activities through video media creation also mirror professional work practices, which require the ability to work in teams and utilize digital technology effectively to complete various tasks.

The use of Plotagon Studio also helps students become more digitally literate. Students use technology as both users and producers of digital learning content. These exercises demonstrate the fundamental components of digital literacy, which include the ability to use digital technology to acquire, evaluate, produce, and convey information effectively (Dewi et al., 2024). They learn to select valid information, process it into learning media, and convey messages effectively through animation. These competencies are essential for facing the increasingly rapid technological developments. Furthermore, the use of Plotagon in the classroom provides students with real-world experience in creating digital materials, which enhances their creativity, technological proficiency, and readiness for the digital revolution in both education and employment.

4. Conclusions (10 PT)

Based on the results of the literature review that has been conducted, it can be concluded that Plotagon

Studio is an interactive animation-based learning media that has significant potential in supporting the learning process in the Digital Transformation course. Various studies have shown that the use of this media not only increases student learning motivation, but also encourages active involvement in the learning process through the presentation of material that is more interesting, communicative, and easy to understand. In addition, the use of Plotagon Studio provides space for students to develop creativity in compiling learning content, improve communication skills through the delivery of ideas visually and narratively, and strengthen digital literacy which is one of the main competencies in the era of digital transformation.

The implementation of interactive animation-based learning media aligns with the student-centered learning approach, which positions students as the primary subjects in the learning process. This approach allows students to actively participate in exploring, analyzing, and constructing knowledge through more contextual and collaborative learning experiences. Thus, the use of Plotagon Studio serves not only as a means of delivering material but also as a medium capable of facilitating the development of 21st-century skills, such as critical thinking, creativity, communication, collaboration, and the ability to utilize digital technology effectively.

Therefore, Plotagon Studio is recommended as an alternative digital learning medium relevant for implementation in higher education environments, particularly in Digital Transformation courses. Its ability to present material visually, interactively, and contextually is believed to increase the effectiveness of the learning process, enrich students' learning experiences, and support the achievement of learning outcomes oriented towards mastering digital competencies. Considering these various advantages, the integration of Plotagon Studio in learning is expected to contribute to improving the quality of higher education that is adaptive to technological developments and the needs of the world of work in the digital era.

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