Development of ArcGIS StoryMaps as Digital-based Innovative Learning Media

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Informasi Artikel	Abstract
	The development of ArcGIS StoryMaps as a Digital-based Innovative Learning Media is a study that explores the potential of utilizing this digital narrative platform in improving the quality of education. In the increasingly connected and technology-based context of modern education, ArcGIS StoryMaps provides a powerful tool for visualizing and explaining information through the incorporation of maps, images, text, video and audio in the form of interactive narratives. This research uses a descriptive qualitative approach. The type of research used is a literature study which is research that has been done before by collecting journal books, magazines, and scientific papers that are interrelated with the problems and research objectives. The results of this study discuss the basic concepts of ArcGIS StoryMaps, the development of learning materials, implementation in learning, challenges that may be faced, as well as recommendations and guidelines for further development. It is hoped that the results of this research will provide a deep insight into how the use of StoryMaps can enrich students' learning experience and improve their preparation for an increasingly connected and digital future.

Abstrak

Pengembangan ArcGIS StoryMaps sebagai Media Pembelajaran Inovatif Berbasis Digital adalah sebuah penelitian yang mengeksplorasi potensi pemanfaatan platform narasi digital ini dalam meningkatkan kualitas pendidikan. Dalam konteks pendidikan modern yang semakin terhubung dan berbasis teknologi, ArcGIS StoryMaps memberikan alat yang kuat untuk memvisualisasikan dan menjelaskan informasi melalui penggabungan peta, gambar, teks, video, dan audio dalam bentuk narasi interaktif. This research uses a descriptive qualitative approach. The type of research used is a literature study which is research that has been done before by collecting journal books, magazines, and scientific papers that are interrelated with the problems and research objectives. Hasil penelitian ini membahas konsep dasar ArcGIS StoryMaps, pengembangan materi pembelajaran, implementasi dalam pembelajaran, tantangan yang mungkin dihadapi, serta rekomendasi dan panduan untuk pengembangan lebih lanjut. Diharapkan bahwa hasil penelitian ini akan memberikan wawasan yang mendalam tentang bagaimana penggunaan StoryMaps dapat memperkaya pengalaman pembelajaran siswa dan meningkatkan persiapan mereka untuk masa depan yang semakin terhubung dan digital.

Kata Kunci : ArcGIS StoryMaps, Digital, Media Pembelajaran Inovatif

INTRODUCTION

Education has undergone a significant transformation in recent decades, especially along with the advancement of digital technology. Technological developments have opened up new opportunities in the development of innovative learning media, which focus on student engagement and better understanding (Sherifali et al. 2018). One tool that stands out in this realm is ArcGIS StoryMaps, a digital-based platform that enables content creators to present information in a dynamic, interactive and engaging way (Rakuasa 2023). ArcGIS StoryMaps combines maps, images, text, video, and audio in a

digital narrative that allows users to explore and understand information in a more immersive way (Guo et al. 2018).

Digital learning media have become highly relevant in modern education, especially in an era where information and communication technologies are increasingly pervasive in everyday life (Manakane et al., 2023). ArcGIS StoryMaps, developed by Esri, a leading company in geospatial mapping and GIS (Geographic Information System) technology, offers great potential in education (Vojteková et al. 2022). The platform not only facilitates learning, but also opens up opportunities for students to go deeper in understanding geographical, scientific, social and cultural concepts (Manakane et al., 2023). It contains the possibility of using rich geospatial data to help students mine information and make decisions based on a deeper understanding of the world around them.

The development of ArcGIS StoryMaps as an innovative digital-based learning medium is relevant due to the challenges and opportunities in modern education. Students today grow up in a digital environment flooded with information, and conventional learning approaches are often no longer adequate to capture their attention (Egiebor and Foster 2019). Therefore, the use of technology and digital media is key in presenting engaging, relevant and effective learning materials. Thus, the use of ArcGIS StoryMaps as an innovative learning medium provides the possibility to combine powerful geospatial technologies with engaging learning approaches.

In addition, it should be noted that ArcGIS StoryMaps are not only a potential learning tool in the classroom, but also a way to connect students with the world beyond the classroom. In an increasingly connected era of globalization, geospatial understanding and geographic data utilization skills are becoming increasingly important in various disciplines and professions (Caquard and Dimitrovas 2017). Thus, the development of ArcGIS StoryMaps as an innovative learning medium is not only relevant for education, but also for the preparation of students to face future global challenges. In this context, this research will explore the potential of developing ArcGIS StoryMaps as an innovative digital-based learning tool that can enrich education and prepare students for an increasingly connected and digitalized future.

METHODOLOGY

This research uses a descriptive qualitative approach. Qualitative research is a research procedure with descriptive data results in the form of written or spoken words (Hamilton and Finley 2019). Qualitative research aims to analyze the quality of a study. The type of research used is a literature study which is research that has been done before by collecting journal books, magazines, and scientific papers that are interrelated with the problems and research objectives. Literature study is a data collection technique carried out by conducting a study of books or literature related to the problem being solved (Roller 2019). The literature study used is by searching for journal articles on Google Scholar, Scopus, and Google Book related to the title of this research.

RESULT AND DISCUSSION

Basic Concepts of ArcGIS StoryMaps

ArcGIS StoryMaps is a platform that enables content creators to create digital narratives that combine various elements, such as maps, images, text, video, and audio, into a dynamic and interactive story (Kulathuramaiyer and Mintu 2022). The basic concept of ArcGIS StoryMaps involves using maps as the main tool to assist in visualizing and explaining information. Users can select different types of maps to suit their story, including base maps, topographic maps, and satellite imagery maps, allowing them to visually explore locations (Marhelin et al., 2023). The front view of ArcGIS StoryMaps can be seen in Figure 1.

Figure 1. ArcGIS StoryMaps Front View

In ArcGIS StoryMaps, text and other media can be brought together with maps to provide deeper context and rich information to the audience. This creates a more engaging and meaningful learning experience. In addition, the basic concept also involves the ability to add links, additional resources and other interactive elements that allow the audience to participate in the learning (Vojteková et al. 2022). The platform is designed to be easy to use, so both teachers and students can quickly develop informative and engaging digital stories (Vojteková et al. 2022).

In more depth, ArcGIS StoryMaps harnesses the power of Geographic Information systems (GIS) to create better geospatial understanding. It allows users to explore spatial relationships between data and explore information in a geographic context. As such, the basic concept of ArcGIS StoryMaps combines elements of mapping, narrative, and multimedia to create an innovative and challenging learning medium, which can be used in a variety of educational and knowledge-building contexts.

Development of Learning Materials with ArcGIS StoryMaps

The development of learning materials using ArcGIS StoryMaps is a process that involves designing, creating, and organizing dynamic and interacting educational content (Agustinah et al., 2023). One of the key aspects of this development is the ability to combine various elements such as maps, images, text, video and audio in a coherent digital narrative (Cope et al. 2018). This allows educators to create materials that are not only informative but also engaging. In this process, the selection of these elements should be based on the desired learning objectives, as well as the characteristics of the target audience.

In addition, developing learning materials with ArcGIS StoryMaps also involves a deep understanding of the subject matter to be taught. According to (Nurjannah et al., 2023), material compilers should ensure that the information presented is relevant to the curriculum or topic of a particular lesson. In addition, they must be able to summarize complex concepts in a way that students can understand. Thus, materials development involves instructional design skills and expertise in the selection and arrangement of learning elements.

Finally, the learning materials developed should create an engaging and meaningful learning experience for students. This involves planning a good storyline, using strong visual elements, and an approach that allows students to actively participate in learning. In using ArcGIS StoryMaps, the development of learning materials can also incorporate geospatial elements such as thematic maps or data analysis that allow students to explore and understand information in a more immersive and contextualized way (Cope et al. 2018). With a careful approach, developing learning materials with ArcGIS StoryMaps can increase teaching effectiveness and improve student understanding.

Implementation of ArcGIS StoryMaps in Learning

The implementation of ArcGIS StoryMaps in the learning process is an important step in utilizing this platform as an innovative educational tool (Agustinah et al. 2023). The platform can be applied in various educational contexts, ranging from elementary school to higher education, as well as in various subjects. The implementation of StoryMaps in learning allows students to explore learning topics visually and interactively, which can improve their understanding of the material.

In practice, the use of ArcGIS StoryMaps can involve crafting a story relevant to a particular curriculum or topic, as well as selecting elements such as maps, images and text that support the learning message. This implementation can be done by teachers or educators who have explored the basic concepts of using this platform (Purwanto et al. 2022). In addition, the development of assignments or projects involving StoryMaps can be an effective way to integrate this platform into learning. An example of the development of ArcGIS StoryMaps in geography learning in tourism.
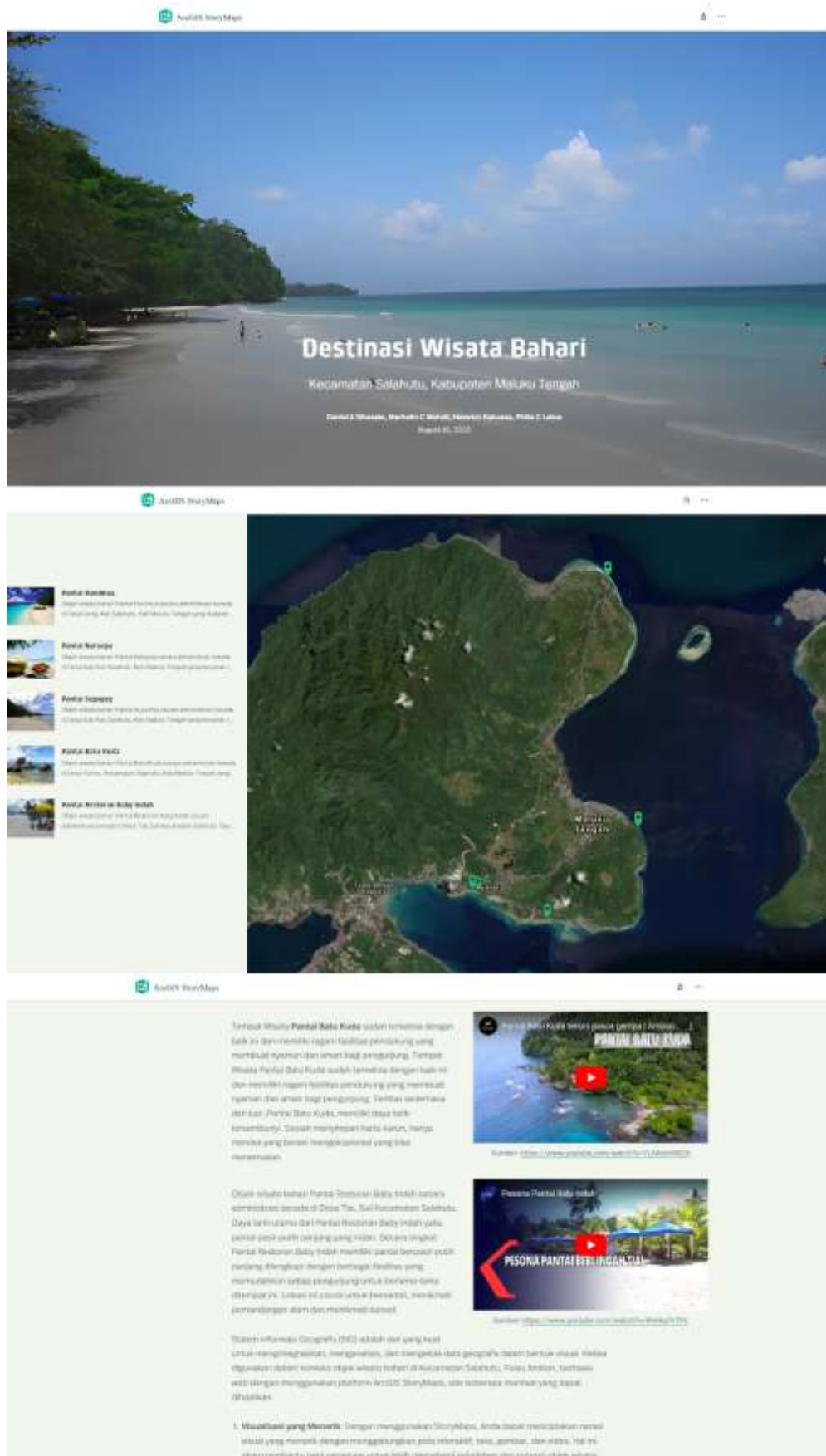
Figure 2. Example of ArcGIS StoryMaps Development in Geography Learning

Previously (Marhelin et al.,2023), in their research on the utilization of a geographic information system for the distribution of marine tourism objects in Salahutu District, Ambon Island based on the web using ArcGIS StoryMaps can be used as a learning medium in geography subjects. According to the benefits in learning, the implementation of ArcGIS StoryMaps also creates opportunities for students to develop technological skills, data literacy, and geospatial understanding. This is important as it prepares students for future challenges that are increasingly related to technology and understanding of geography. Therefore, the implementation of StoryMaps can enhance students' competitiveness in an increasingly connected and data-driven world. With the right approach, this platform can have a positive impact in improving the quality of education and students' readiness to face an increasingly complex world.

Challenges and Strategies

The challenges that may be faced in implementing ArcGIS StoryMaps in learning cannot be ignored. One of the main challenges is technology accessibility (Manakane et al., 2023). Not all students or schools have equal access to the devices and internet connectivity required to run StoryMaps (Purwanto et al., 2022). This can create inequality in learning opportunities. To address this issue, strategies need to be implemented to ensure that technology accessibility is provided to all students, for example by providing devices in schools or customizing materials to be accessible with simpler devices.

In addition, a packed curriculum and strict teaching requirements can be an obstacle in implementing StoryMaps in learning. Teachers often feel limited by the time and curriculum requirements they have to follow. Coping strategies to address these issues include the integration of StoryMaps into the existing curriculum, so that the platform supports the learning that is already taking place, rather than adding additional burden (Agustinah et al. 2023). This allows teachers to utilize StoryMaps as a tool that supports their educational goals without disrupting a tight learning schedule.

Another challenge is the need for training for teachers or educators who may not be familiar with the use of geospatial technologies. Coping strategies include the provision of appropriate training, either through online resources, workshops, or ongoing training. By ensuring that teachers have sufficient understanding and skills to use StoryMaps, implementation will be smoother and more effective. Addressing these challenges is an important step in ensuring that StoryMaps can provide maximum benefits in learning.

CONCLUSIONS

The development of ArcGIS StoryMaps as a Digital-based Innovative Learning Media is an important step in responding to the demands of 21st century education that is increasingly connected and technology-oriented. This platform offers great potential in improving the quality of education by combining elements of mapping, narrative and multimedia in one attractive package. Through understanding basic concepts, developing informative and engaging materials, and careful implementation, ArcGIS StoryMaps can

be a valuable tool in supporting rich and meaningful learning. Although challenges such as technology accessibility and a dense curriculum need to be overcome, these steps have great potential in helping students understand the geospatial world and preparing them for an increasingly complex future. With the right recommendations and guidance, the development of StoryMaps can be an integral component in sustainable digital-based education.

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