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Application of Virtual Gallery Walk with Spatial.Io in An Effort to Increase Students' Learning Motivation in Social Studies

Dista Ayu Umdatul Choiroh*, Bayu Kurniawan, Linda Zulkifa Rahayu, Arista Wati, Erna Sari
State University of Malang, Indonesia
***Corresponding Author e-mail: dista.ayu.2431749@students.um.ac.id**

Abstract: The aim of this study is to enhance students' motivation in learning Social Studies (IPS) through the implementation of a virtual gallery walk learning model using Spatial.io. Spatial.io was selected because it offers an immersive 3D learning environment that supports interactive learning experiences. This research adopts a design thinking approach, consisting of five stages: empathize, define, ideate, prototype, and test. The subjects of the study were 8th-grade students from class 8A at SMP Laboratorium UM Malang. The developed product demonstrated that the application of a virtual gallery walk using Spatial.io effectively increased students' learning motivation, as evidenced by higher levels of active participation, enthusiasm, and positive feedback throughout the learning process.

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Introduction

Quality human resources are shaped in large part by education. However, Indonesia is ranked seventh out of ten Southeast Asian nations according to results from the Program for International Student Assessment (PISA) 2022. Even if children perform well academically in a number of cognitive domains, there are still significant issues with learning motivation. According to Afriani's research (2022), Indonesian students' learning motivation, particularly at the junior high school level, remains in the moderate to low range, with an average score of just 65%.

In an effort to achieve the desired educational goals, there are many learning methods applied in the educational environment, especially for education that aims to increase the motivation of a learner. One of the steps to have a strategy is by the way the teacher must master teaching techniques or teaching methods, (Masni, 2017). Motivation is a factor that has a significant effect on learning outcomes (Nurmala, 2014). According to Tampubolon et al (2021), there are two learning motivations, namely an encouragement that comes from within is intrinsic and an encouragement based on external self is extrinsic. According to Uno (2013) low learning motivation can be caused by several factors, including the lack of emotional involvement of students in learning, monotonous teaching methods, and lack of relevance of material to the real world. The impact of low learning motivation can lead to a lack of understanding of the material and student learning outcomes. Decreased activeness,

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lack of participation in class, and low absorption of subject matter which ultimately has an impact on learning achievement that is not optimal.

The low motivation of students to learn social studies is a problem that needs to be overcome. To overcome these problems, teachers must be able to provide learning that can generate student learning motivation in social studies learning. Based on this situation, an interactive learning model and method is needed so that students can play an active role during the learning process. One approach that can be done to overcome this problem is to apply a problem-based learning model combined with a virtual-based gallery walk method by utilizing the spatial.io application. This approach is expected to create a more active learning experience, collaborative and critical thinking of students. So that it can increase learning motivation and student involvement in learning. Students will find learning materials more engaging if they are interactive or engage students, and teachers will find it simpler to provide the information (Nurfadhillah et al., 2021).

The use of appropriate learning models and methods is very helpful to create an effective learning process. So in this study, researchers used the Virtual gallery walk learning method with spatial.io. According to Nining Mariyaningsih and Mistina Hidayati in Imron (2023), the gallery walk learning method is able to inspire students to create a list in the form of images or schemes that are adjusted to the things found or obtained during discussions with their study groups. Virtual gallery walk with spatial.io offers learners the opportunity to collaborate, express opinions and see the work of other groups that can close learning gaps. According to Rasyida et al. (2023), spatial.io has interactive features that can be used in educational contexts to create immersive and collaborative learning experiences. Through the spatial.io platform, it helps create a user experience to visit and recognize cultural heritage virtually and also develop students' ability to use information and communication technology in the era of society 5.0 (Bonali et al., 2021). Spatial.io was chosen as the medium in the virtual gallery walk model because it provides an immersive and collaborative learning environment. Learners can explore the virtual gallery walk space on Spatial.io application. Thus, they can interact with the learning content actively. According to Bonali et al. (2021), the use of immersive technology such as Spatial.io can increase learners' conceptual understanding and participation because they experience learning firsthand in a realistic environment. In addition, Spatial.io supports the integration of various learning media such as images, videos, and audio that suit the visual learning style of most learners. This makes Spatial.io the perfect tool to create a fun, contextualized and meaningful learning experience.

The related research was conducted by Dewi Indah Lestari, et al in 2024 with the title "The Effect of Gallery Walk Cooperative Learning Model on Learning Motivation and Cooperation Ability in Social Studies Learning". The results of his research are learning motivation is influenced by the activity of the learning process by moving places and seeking information from each other to other friends. While the significance of cooperation skills is based on the discussion techniques of students in solving a problem in groups.

Rani Rasyida, et al. did the second study in 2023 with the title "Metaverse - Virtual Reality Based Learning Using Spatial.io with the Discovery Learning Model to Increase Student Understanding and Interest". According to the findings of his research, learning via the use of Spatial.io media and metaverse-virtual reality may be made more engaging, dynamic, and enjoyable. In contrast to traditional learning, which tends to be passive, students who participate in virtual learning activities not only become more actively involved in the learning process but also have a deeper and more meaningful learning experience.

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The third research was conducted by Purwanto, et al in 2025 with the title "Transformation of the Nusantara Virtual Class Model with Spatial.io as an Effort to Improve the Multiskill of PPG Social Studies Students in the Era of Society 5.0". The results of his research are the integration of virtual technology through the Spatial.io platform is significantly able to improve the skills of critical thinking, collaboration, technological adaptation, and communication of PPG IPS students. The Nusantara virtual classroom model developed provides immersive learning spaces based on local culture and geography that are relevant to the social studies learning context.

Research under the heading "Application of Virtual Gallery Walk with Spatial.io in an Effort to Increase Student Learning Motivation in Social Studies Class 8A at SMP Laboratorium UM Malang" is of interest to the researcher given the background information provided above. This research is important because by applying the Virtual gallery walk model with spatial.io can overcome the problem of low student learning motivation in social studies subjects. This research will also contribute to the development of more interactive learning methods in social studies learning in the 21st century because it integrates the Virtual gallery walk method with spatial.io media. Therefore, the results of this study are expected to provide insight for educators in applying more innovative and student centered learning strategies

Research Method

The methodology in this research uses the Design Thinking method. Design Thinking is a design methodology to solve problems by understanding the needs of humans involved in terms of face-to-face design, there are five stages, namely Emphatize, Define, Ideate, Prototype and Test. This research was conducted at SMP Laboratorium UM Malang which is located on Jl. Simpang Bogor, Sumbersari, Lowokwaru, Malang, East Java.

The research subjects were students of class 8A in the 2024/2025 academic year, totaling 32 students. The instruments used include observation sheets, field notes and documentation. Data were analyzed descriptively qualitatively from the field. This method is expected to provide clear research results regarding the Application of Virtual Gallery Walk with Spatial.io in an Effort to Increase Student Learning Motivation in Social Studies Class 8A at SMP Laboratorium UM Malang. The procedures carried out in this study are as follows:

1. Emphatize
   Empathize is a stage where an approach is taken to the user to get information and find out what the user wants, in this process observations and diagnostic tests are carried out to find out the user's needs.
2. Define
   This second stage will conclude all the needs obtained from the empathize stage.
3. Ideate
   Ideate is the process of generating creative ideas on the design of a design to solve the topic of the problem at the empathize stage. So that at this stage it produces ideas, opinions, stages to be implemented in the design of the planned design.
4. Prototype
   The product is developed in a scaled-down version or as a sample. Prototypes are made in the form of sketches, virtual mockups and so on.
5. Test

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The fifth stage is the stage for conducting user trials. Users will provide input based on their experience, then the input provided by users will be reviewed and improved to make it even better.

Result and Discussion

This study aims to overcome the problem of low student motivation in social studies through a virtual gallery walk learning model using the spatial.io application. The results of observations and trials show that the application of the virtual gallery walk model using Spatial.io has a positive impact on student learning motivation in class 8A SMP Laboratorium UM Malang. This finding is supported by the theory of learning motivation proposed by Deci & Ryan (2000) in Self-Determination Theory (SDT), which states that active involvement, autonomy, and a sense of belonging in learning are important factors in increasing students' intrinsic motivation. The virtual learning environment developed with Spatial.io gives learners the freedom to explore materials and complete tasks independently or in groups, which facilitates the main elements of SDT. This finding is also supported by the research of Rasyida et al...(2023) which shows that metaverse-based learning using Spatial.io increases student engagement and provides a more enjoyable and meaningful learning experience than conventional learning. This is in line with the results of the current study, where the majority of learners showed increased learning motivation and enthusiasm during the learning process.

The method used in this research is design thinking which consists of five stages. These stages are Emphetize, Define, Ideate, Prototype and Test.

1. Emphetize

   At this stage, researchers conducted observations, interviews and diagnostic tests of 8A class students at SMP Laboratorium UM Malang. Observations were made during the implementation of PPL 1 and 2 when teaching assistance for the host teacher. Based on the results of observations, it was found that some students looked tired and passive during social studies learning activities. To explore further, the researcher conducted a diagnostic test of students' learning needs through google form.

   The results of the diagnostic test showed that most students felt that learning social studies was monotonous and boring. In addition, the test results also show that most learners have a visual learning style, which is learning through vision such as seeing pictures, videos, or animations.

2. Define

   Based on the results of the Empathize stage, the main problem identified is the low motivation of students to learn caused by the lack of facilities for students' visual learning styles. So that learning activities are less interesting and monotonous. In addition, the timing of the implementation of social studies lessons that are less strategic because dilkaukan in the final hours of learning.

3. Ideate

   At this ideate stage, researchers formulated several alternative solutions to increase students' learning motivation in social studies subjects. After clearly understanding and defining the user and problem, we can now think of suitable solutions at the ideate stage. Ideate in this project is to determine learning media innovations in the hope of attracting the attention of students as in the following table:

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Tabel 1. Ideate in this project

Idea 1: Wordwall-based Learning Media	Idea 2: Role Play with the material of Indonesian society during the Colonial Period
Idea 3: Virtual Gallery Walk using Spatial.io app	Ide 4 : Gallery Walk Konvensional

Based on the ideas of several learning media above, researchers finally decided to choose a virtual gallery walk using the spatial.io application as an innovative solution in increasing students' learning motivation in social studies learning. This media selection takes into account aspects of learning styles and pays attention to the learning objectives that students will achieve on the material of Indonesian Society during the Colonial Period. The virtual gallery walk using spatial.io was chosen because it is able to present material visually which allows learners to explore learning content virtually. The learning objectives to be achieved by students through this model are as follows:

1. Through the Virtual Gallery Walk model using the spatial.io application, students are expected to be able to analyze the socio-economic conditions of Indonesian society during the colonial period appropriately.
2. Through the Virtual Gallery Walk model using the spatial.io application, students are expected to be able to correctly identify the people's resistance in Malang City against the Dutch East Indies government.

Through the application of the virtual gallery walk model using spatial.io, students are not only expected to be able to understand the material textually, but also visually and contextually through interactive galleries in the form of videos and infographics. In this spatial.io application, learners can move from one gallery displayed to another to explore various aspects of the material that has been uploaded. Learners are also directed to complete interactive tasks and answer questions as part of learning reflection. Through this virtual-based learning experience, students are expected to understand the material more deeply and be motivated to be actively involved in the learning process.

4. Prototype

At the prototype stage, the project created by the researcher is a high fidelity prototype where the manufacturing process is close to the final product. According to Dam & Siang (2021), prototype development is an integral part of Design Thinking and user-centered design, because prototypes allow us to test ideas and improve them in a short time. Researchers chose this type because it is considered to be more attractive and makes it easier for everyone to imagine the final shape of the product. The trials that will be conducted are expected to produce more accurate input, be widely applicable and clarify the use of the product. The process of preparing the prototype stage that will be carried out by researchers is through several stages, as follows:

A. Design Design

The researcher started the design stage by selecting the virtual space available in the spatial.io application as a place for the virtual gallery walk. The spaces were selected based on visual feasibility, ease of navigation and suitability to the learning theme. Next, the researcher determines the avatar used as a representation of the user in the virtual space. This is to provide a more interactive exploration experience for

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learners. Then the researchers compiled materials related to "Indonesian Society during the Colonial Period".

The materials are presented in the form of educational videos and informative infographics. The content is uploaded directly into the virtual gallery walk space on spatial.io so that it can be accessed and explored by students. In addition to presenting the material, researchers also added digital tasks or worksheets as part of the learning activity. These tasks are uploaded to the gallery walk space and are designed for learners to work on after they have listened to each section of the material. This will encourage students to actively participate in the learning process. Learners can explore, understand and reflect on the material that has been learned through the digital media.

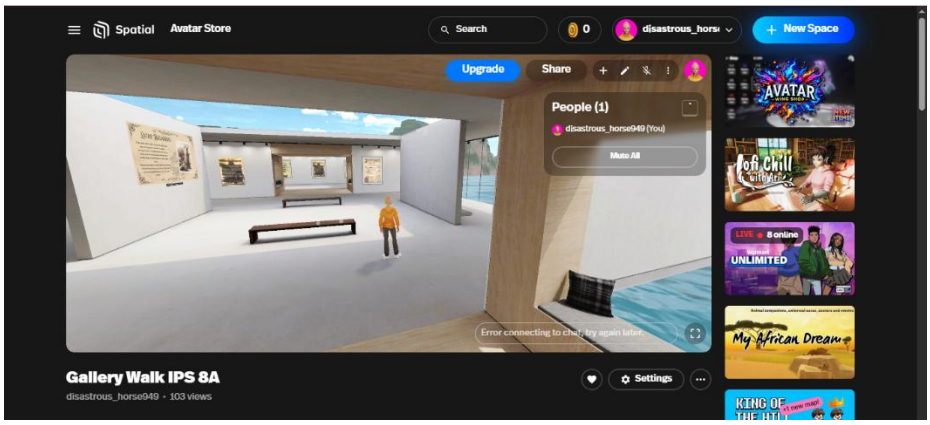

Figure 1. Ruang Gallery Walk Virtual menggunakan Spatia.io

B. Resources

In the prototyping process, some of the resources utilized include:

(1) Time: effective scheduling of time to design, create and refine the prototype.

(2) Labor: the researcher is focused and committed to designing visual content, compiling materials, and uploading content on spatial.io. This is in order to realize the prototype close to the design made.

(3) Software:

- Spatial.io as the main media to create a virtual gallery walk.
- Canva for image and infographic design.
- Youtube or educational videos as audio-visual content integration..

(4) Hardware: Laptop and stable internet connection for prototype testing.

(5) Materials: social studies learning materials from the social studies teaching module prepared by Linda Zulkifa Rahayu, S. Pd., Gr., Maria Ulfa, S. Pd., Gr., and Yudha Intan Kartika B., S.Pd., Gr..

C. Prototyping Results

The final result of the prototype is that the researcher produces a product in the form of a virtual gallery walk space that can be accessed through the spatial.io link using a laptop or cellphone. Learners can explore the virtual gallery space containing this learning material with the avatar that has been available. The material is presented in the form of videos, informative infographics and digital assignments or worksheets. The use of virtual gallery walk using spatial.io will provide an interactive and meaningful learning experience. It can also increase the active involvement of

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students in the learning process. So that it is in accordance with the learning style of visual learners.

5. Test

Test is the final stage of the design thinking process. Researchers rigorously test the entire product using the best solution identified. Testing of designed products is applied to users. At this stage, researchers conducted product trials, namely the virtual gallery walk model using spatial.io to users, namely class 8A SMP Laboratorium UM Malang. The trial was held on Wednesday, April 23 at 12.50 - 14.10 which is the 8th-9th lesson hour.

Figure 2. Uji Coba Prototype

After the product is tested to users, then the effectiveness test is carried out through a questionnaire that is filled in by class 8A students after the learning ends. The results of the effectiveness of the virtual gallery walk model using spatial.io to increase student learning motivation in social studies subjects are shown in the diagram below:

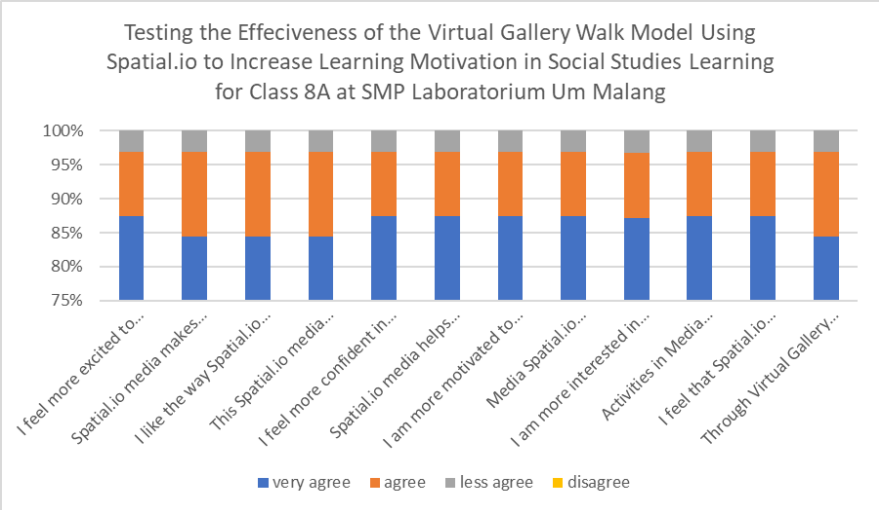

Figure 3. Effectiveness Test Results

Based on the results of product tests that have been carried out by researchers, it shows that most students agree and strongly agree to use the virtual gallery walk model using Spatial.io in social studies learning. The model makes students more enthusiastic about learning, increasing activeness and involvement in learning because the material is more interesting and easy to understand. The high percentage of positive responses shows that this model is effective in increasing students' learning motivation in social studies subjects. The

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media used is also in accordance with the characteristics of 21st century learning which emphasizes the use of technology and interactive visual approaches.

Conclusion

This research was conducted to overcome the problem of low student learning motivation in social studies subjects, especially in class 8A SMP Laboratorium UM Malang. Based on the results of preliminary observations, it was found that social studies learning has been considered monotonous and less interesting. This is because it does not suit the visual learning style of most learners. To overcome these problems, researchers developed a Virtual Gallery Walk learning model using the Spatial.io application through the Design Thinking approach. The design process starts from the stage of identifying the needs of students to product trials. The results of the trial showed that the majority of students responded positively to the use of Spatial.io media in learning. Learners feel more enthusiastic, active, interested, and understand the material more easily because of the visual, interactive, and contextual presentation. They also claimed to be more emotionally and cognitively involved in learning activities, and even encouraged to seek additional information independently after learning. So that the use of the Spatial.io-based Virtual Gallery Walk model is proven to have a positive impact on increasing student learning motivation in social studies subjects. This media is not only relevant to the needs of the times, but also able to create a more meaningful and enjoyable learning experience. Suggestions for future researchers are expected to further develop the use of Spatial.io in different learning contexts, and examine its impact not only on aspects of motivation, but also on learning outcomes, creativity, and collaborative abilities of students.

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