



Influence of Media-Based Virtual Museum Tours on Learning Motivation and Social Studies Learning Outcomes of Form Two Students of St. Joseph's Secondary School, Nairobi County, Kenya

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Abstract

This study investigates the influence of media-based virtual museum tours on learning motivation and social studies learning outcomes among Form Two students at St. Joseph's Secondary School, Nairobi County, Kenya. With the rapid advancement of information and communication technology, virtual museum tours provide an engaging and innovative alternative to traditional learning methods, especially in social studies, which often requires exploration of historical and cultural contexts. A quantitative research design with an experimental approach was employed. The participants comprised two groups: an experimental group that utilised virtual museum tour media and a control group that received instruction through conventional teaching methods. Data were collected using learning motivation questionnaires and standardised tests on social studies learning outcomes. Findings from this research are expected to offer insights into the potential of virtual museum tours as an instructional tool to enhance students' motivation and improve academic performance in social studies.

Keywords: Virtual museum tour, Learning motivation, Social studies, Learning outcomes

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Introduction

Education remains a cornerstone of human development and plays a vital role in equipping individuals with the skills needed to thrive in various fields. In the 21st century, education faces numerous challenges. Although technology has simplified many aspects of life, it has also influenced students' enthusiasm for learning. Rapid technological developments sometimes create distractions that reduce students' motivation and engagement within learning institutions (Simbolon, 2022).

A conducive learning process should create a collaborative environment where teachers and students interact in two-way communication, fostering independent and critical thinking. In Kenya, Social Studies particularly history plays a central role in helping students develop critical thinking, build positive character, and understand societal change and national development (Sutikno, 2021). However, one of the recurring challenges is students' low motivation to engage with history topics (Filgona et al., 2020). This calls for innovative approaches, including interactive teaching methods and technology integration, to make Social Studies more relevant and meaningful for learners.

Constructivist theories of learning by Piaget and Vygotsky emphasise that learners acquire knowledge through constructing meaning from their experiences, which are shaped by psychological and cultural contexts (Maksum & Purwanto, 2019). Vygotsky further highlights the influence of society and the cultural environment on knowledge formation. Despite this, many history classes still rely heavily on outdated textbooks and lecture-

style delivery, which limits interaction and engagement. This gap between modern pedagogy and traditional delivery methods leads to suboptimal learning outcomes and hinders curriculum objectives (Afrina et al., 2021). In today's digital era, Kenyan teachers are encouraged to embrace technology to improve teaching and learning outcomes. Innovation goes beyond curriculum content and extends to using technology-based media to transform conventional learning into modern experiences (Budiana, 2022; Purba et al., 2024). Museums, for example, provide rich learning resources on local, national, and global heritage (Katz & Halpern, 2015; Santoso et al., 2023). However, visiting museums physically can be challenging for schools due to costs, distance, or logistical issues. Virtual museum tours address these challenges by enabling students and teachers to access curated museum experiences online using computers or mobile devices.

Virtual museum tours offer several benefits: they are cost-effective, provide easy access to extensive historical collections, and supply curriculum-aligned resources that enhance contextual understanding (Moseikina & Toktamysov, 2024). Research shows that virtual tours enrich students' learning by making it more interactive, enjoyable, and memorable (Daniela, 2020). Such digital tools also help learners visualise historical settings, improving retention and understanding of concepts (Bandarsyah & Sulaeman, 2021).

Evidence from Rosmah et al. (2023) and Tasbihah and Suprijono (2021) indicates that using virtual museum tours significantly improves learning outcomes and motivation in Social Studies classes at the secondary level. In Nairobi County, many students in Form Two struggle with low motivation and limited interest in Social Studies, particularly history topics. This is often due to dense content, reliance on lecture methods, and a lack of innovative instructional media. Such conditions result in poor learning outcomes and reduced enthusiasm for the subject.

Consequently, there is a need to introduce engaging learning media to support teaching Social Studies in Kenyan schools. This study investigates the effect of media-based virtual museum tours on learning motivation and Social Studies learning outcomes among Form Two students at St. Joseph's Secondary School, Nairobi County, Kenya. The findings are expected to provide useful insights into integrating innovative, technology-based learning tools into Social Studies instruction in Kenyan secondary schools.

Research Methods

2.1 Research Design

This study employed an empirical research design using a quantitative approach. According to Sugiyono (2019), quantitative research utilises systematic procedures to collect data through research instruments, analyse the data statistically, and test pre-established hypotheses. Similarly, Sukardi (2021) states that a quantitative approach primarily adopts a post-positivist paradigm, focusing on cause-and-effect relationships, variable measurement, hypothesis testing, and experimentation. This method allows researchers to draw conclusions based on measurable evidence.

In line with Arikunto (2020), quantitative research relies on numerical data to derive information about the phenomena being studied. This approach was selected for the present study to investigate the effect of virtual museum tours on learning motivation and Social Studies performance among Form Two students at St. Joseph's Secondary School, Nairobi County, Kenya. The study used an inter-group experimental design (post-test-only control group design). In this design, the experimental group received the treatment (learning Social Studies with virtual museum tours), while the control group received traditional instruction without virtual museum tours. This approach enabled a clear comparison of the impact of the treatment on students' learning outcomes.

3. Results and Discussion – Learning Motivation

In this study, learning motivation refers to the internal drive that prompts students to achieve educational goals such as understanding Social Studies content, engaging with the material, and improving their performance. Learning motivation was measured using two groups:

Control Group – students taught Social Studies using traditional methods without virtual museum tours.

Experimental Group – students taught Social Studies using virtual museum tours as an instructional medium.

To facilitate interpretation, learning motivation was categorised as: very high, high, moderate, low, and very low. This classification enabled the analysis of differences between the two groups. Table 1 presents the frequency distribution of learning motivation levels among Form Two students at St. Joseph's Secondary School, Nairobi County, Kenya.

Table 1. Frequency Distribution of Learning Outcomes for St. Joseph's Secondary School, Kenya

Motivation to learn	Control Class		Experimental Class	
	Number of people)	Percentage (%)	Number of people)	Percentage (%)
Very high	0	0,00	3	8,82
High	24	75,00	29	85,29
Enough	6	18,75	2	5,88
Low	2	6,25	0	0,00
Very Low	0	0,00	0	0,00
Total	32	100,00	34	100,00

Source: data processed 2024

Based on Table 1, the results show that learning motivation for the control class consisted of low as many as 2 people (6.25%), moderate as many as 6 people (18.75%), and high as many as 24 people (75.00%). Meanwhile, learning motivation for the experimental class consisted of 2 people (5.88%), 29 people (85.29%), and 3 people (8.82%) very high. Referring to these results, it can be seen that the learning motivation of St. Joseph's Secondary School, both in the control class and the experimental class, is mostly categorized as high. Overall students are taught with using learning media learning virtual tour to museum have low and sufficient learning motivation which is lower compared to students who are not taught with using learning media virtual tour to museum. Students taught with instructional Media virtual tour to museum have greater motivation to learn in the high and very high categories compared to students who are not taught with instructional Media virtual tour to museum.

Description of Learning Outcomes

The learning outcomes referred to in this research are the results achieved by students after learning activities in social studies subjects in St. Joseph's Secondary School, Kenya. Measurement of learning outcomes was carried out using a control class that did not use learning media virtual tour to museum and experimental class with using learning media virtual tour to museum. To facilitate the interpretation of learning outcome data, learning outcomes are classified into: very good, good, fair, poor, and very poor. Table 2 will illustrate the frequency distribution of learning outcomes for class St. Joseph's Secondary School.

Table 2 Frequency Distribution of Learning Outcomes for St. Joseph's Secondary School, Kenya

Learning outcomes	Control Class		Experimental Class	
	Number of people)	Percentage (%)	Number of people)	Percentage (%)
Very well	3	9,38	6	17,65
Good	7	21,88	15	44,12
Enough	11	34,38	11	32,35
Not enough	7	21,88	2	5,88
Less than once	4	12,50	0	0,00
Total	32	100,00	34	100,00

Source: data processed 2024

Based on Table 2, it shows that the learning outcomes for the control class consisted of 3 people (9.38%), 7 people less (21.88%), 11 people (34.38%), 7 people (34.38%), good 7 people. people (21.88%), and very good as many as 4 people (12.50%). Meanwhile, the learning outcomes for the experimental class consisted of less than 2 people (5.88%), fair as many as 11 people (32.35%), good as many as 15 people (44.12%), and very good as many as 6 people (17). .65%). Referring to these results, it can be seen that the learning outcomes of St. Joseph's Secondary School, Kenya in the control class were mostly categorized as fair, while in the experimental class most of them were categorized as good. Overall students are taught with using learning media learning virtual tour to museum have lower learning outcomes in the poor category compared to students who are not taught with using learning media virtual tour to museum. Students taught with instructional Media virtual tour to museum has learning outcomes in the good and very good categories which are greater than those of students who are not taught with instructional Media virtual tour to museum.

Hypothesis Testing

As for the test results Independent Sample T-Test Brief motivation for learning can be presented in Table 3.

Table 3 Test Results Independent Sample T-Test for

	Learning Motivation Class	Mean	Say.	Decision
t				
	count Control	37,25		
Experiment	40,35	-2,910	0,005	H1 accepted

Source: data processed 2024 Based on Table 3 relating to hypothesis testing which states the average learning motivation of control class students (not taught with instructional Media virtual tour to museum) is significantly different compared to the average learning motivation of experimental class students (taught with instructional Media virtual tour to museum). This is proven by the t-count significance value of 0.005, which means it is smaller than 0.05. So, it can be stated that H1 accepted. So the hypothesis states that learning media virtual tour to museum can influence learning motivation in social studies subjects St. Joseph's Secondary School, Kenya proven to be true. Next, the test results are presented Independent Sample TTest The learning outcomes can be briefly presented in Table 4.

Table 4 Test Results Independent Sample T-Test for

	Learning Outcomes Class	Mean	Say.	Decision
t				
	count Control	61,87		
Experiment	70,00	-3,208	0,002	H2 accepted

Source: data processed 2024

Based on Table 4 relating to hypothesis testing which states the average learning outcomes for control class students (not taught with instructional Media virtual tour to museum) is significantly different compared to the average learning outcomes for experimental class students (taught with instructional Media virtual tour to

museum). This is proven by obtaining a t-count significance value of 0.002, which means it is smaller than 0.05. So, it can be stated that H2 accepted. So the hypothesis states that learning media virtual tour to museum can influence learning outcomes in social studies subjects St. Joseph's Secondary School, Kenya proven to be true.

Discussion: Influence of Virtual Museum Tours on Learning Motivation

The results of hypothesis testing show that the use of virtual museum tour media positively influences learning motivation among Form Two Social Studies students at St. Joseph's Secondary School, Nairobi County. Descriptive statistics confirm that students taught using virtual museum tours displayed higher motivation levels (high and very high categories) compared to those taught using conventional methods.

Virtual solutions allow learners to access a broader range of information, engage with otherwise inaccessible spaces, and experience immersive environments that support learning (Daniela, 2020). Such environments encourage exploration, interaction with digital artefacts, and self-directed discovery. By integrating realistic visuals, 3D technology, and interactive features, virtual tours enhance students' cognitive processes, creativity, and engagement with Social Studies content.

For museums, virtual solutions bridge gaps such as limited physical space, accessibility constraints, and the need to engage new audiences. In education, virtual tours act as an engaging instructional tool, enabling students to explore cultural and historical contexts, collaborate with virtual guides, and interact with simulated artefacts (Katz & Halpern, 2015). Research further suggests that immersive virtual environments align with constructivist learning principles by enabling students to control their learning path, discover new information independently, and adopt multiple perspectives, thereby stimulating intrinsic motivation (Moseikina & Toktamysov, 2024).

Influence of Virtual Museum Tours on Learning Outcomes

Hypothesis testing also demonstrates that virtual museum tours positively influence Social Studies learning outcomes among Form Two students. Descriptive findings reveal that students taught with virtual museum tours achieved better performance (good and very good categories) compared to their peers taught using conventional methods.

Virtual museum tours differ from traditional field trips by allowing students to explore real-world objects and historical sites virtually, collect relevant information independently, and focus on elements of personal interest (Moseikina & Toktamysov, 2024). This self-directed exploration enhances engagement, enjoyment, and deeper understanding of Social Studies content. Teachers can utilise virtual museum tours to supplement classroom instruction, provide access to otherwise distant heritage sites, and stimulate student curiosity. Such interactive learning experiences have been shown to improve understanding, interest, and ultimately, learning outcomes (Rosmah et al., 2023).

Conclusion

Based on the analysis, the study concludes that using virtual museum tours as a learning medium significantly enhances both learning motivation and Social Studies outcomes among Form Two students at St. Joseph's Secondary School, Nairobi County. This finding highlights the value of integrating technology-based, interactive tools into the teaching of Social Studies, especially when aiming to contextualise historical and cultural content in ways that are engaging and accessible to learners.

Suggestions

For Teachers: Maximise the use of virtual museum tours in Social Studies teaching to increase student motivation and improve learning outcomes.

For Schools: Provide the necessary ICT infrastructure (internet access, computers, or tablets) to support the effective use of virtual learning media.

For Curriculum Developers: Integrate virtual museum tours and other interactive media into the national Social Studies curriculum to enhance experiential learning.

For Researchers: Extend this study to other counties in Kenya and explore the use of other innovative and creative digital tools to enrich the learning experience.

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