

Project Proposal ACCA6020 Philip Richmond 2212266_V1.

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**A Study into the Use of VR in Education Through the
Design of a 3D HMS Victory Gun Deck for Schools
Without Access to Heritage Sites**

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Supervisor BA Program Team Awaiting Allocation

Project submitted as part of the requirements for the award of

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ACCA6020

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Project Rationale

Many pupils and students across the UK are unable to access physical heritage sites like HMS Victory due to cost, location, or school limitations [1]. This creates a gap in how history is experienced and understood especially naval and military history, which benefits from spatial and physical context. Traditional classroom resources such as textbooks or videos do not fully capture the scale, environment, or sensory impact of these sites.

HMS Victory is a 104 - gun first rate ship of the line, launched in 1765 and best known as Admiral Nelson's flagship at the Battle of Trafalgar in 1805. Built from oak and constructed using traditional shipbuilding methods, she represents the peak of 18th century naval engineering. The ship served in several major conflicts before becoming a permanent flagship and eventually a museum ship. Her design, structure, and preserved condition provide deep insight into naval warfare, seamanship, and life aboard a Royal Navy warship during the age of sail.[2]

This project proposes the development of a 3D digital replica of HMS Victory's gun deck, designed for use in schools through VR headsets and desktop computers. The goal is to provide an immersive, interactive educational experience that enhances engagement and understanding. Using VR in the classroom can increase students' engagement and improve learning results, showing benefits for learners within education system and learning difficulties [3]. The virtual environment will include historically accurate models, voice guided narration, an interactive cannon, and built-in accessibility features to support a wide range of learners.

The literature review will explore whether virtual reality is an effective and appropriate educational tool in this setting. It looks at both the design and delivery challenges of using VR in schools, as well as its potential to support learning, inclusion, and historical awareness.



Figure 1 HMS Victory [4]

Aims

- To create a fully explorable 3D model of HMS Victory's gun deck for use in schools.
- To enable pupils who cannot access physical heritage sites to experience historical environments through virtual reality.
- To design the experience with accessibility features that support a wide range of learning needs.
- To test whether VR can be used effectively as an educational tool for delivering historical content.
- To apply game design principles to improve engagement, usability, and learning outcomes within the VR experience.

Objectives

- Research and Site Visit:
Conduct a field trip to HMS Victory in Portsmouth to collect real world visual references and texture photography. Focus will be on capturing wood grain, cannon metal, ropes, painted surfaces, and environmental wear to use in asset creation. (See Appendix B – List of Texture Photographs).
- Literature Review
Examine relevant academic sources on VR in education, accessibility in game design, and serious game methodology. Compare findings with user testing data to assess whether VR is an effective educational tool in this context.
- 3D Modelling and Asset Creation:
Use Autodesk Maya to build accurate 3D models of the gun deck, including cannons, planking, gunports, support structures, and props. Proportions will be based on site measurements and archival references.
- Texturing with Adobe Substance 3D:
Process real world textures collected on site and use Adobe Substance 3D tools to create high quality, PBR compliant materials. These textures will be applied to assets to ensure realism and surface accuracy in both desktop and VR rendering environments.
- VR Integration
Import assets into Unreal Engine to build a functional, interactive scene. Add core mechanics such as free movement, seated navigation, cannon interaction, and voice over or text-based guidance.
- User Testing and Feedback:
Testing will involve students and educators using the VR and desktop versions in controlled sessions. Feedback forms and observations will identify issues with usability, clarity, and educational value. The data will directly inform ongoing adjustments to improve navigation, interaction, and accessibility.

- Final Reporting and Demonstration
Deliver a 6,000-word academic report detailing design process, development methods, testing outcomes, and critical analysis. Present the final project in a live demonstration and viva.

Planned Research visit – HMS Victory, Portsmouth

Objective	Detail
Location	HMS Victory Portsmouth Historical Shipyard
Task	Photograph and measure cannon layout. Materials. lighting
Measurements	Cannon size, deck spacing, gunports width, ceiling height
Additional activities	Audio recording of ambient sound if possible. Staff Q&A
Duration	2 days with overnight stay
Equipment	Tape measure camera, folio equipment

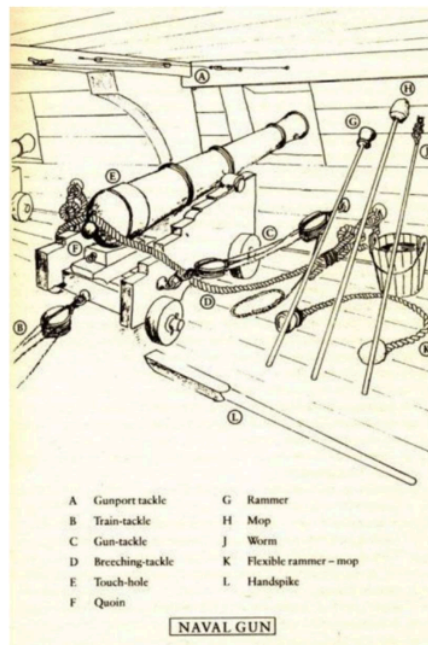


Figure 2 Naval Gun [5]

Project Plan

Proposal Phase (October)

- Define the problem and learning objective
- submit initial project outline for approval
- Plan deliverables, deadlines, and structure

Research and Writing (Oct - May)

- Review VR and education literature
- Document technical process, decisions, and challenges
- Link practice to theory in educational game design

Asset Creation and Texturing (Oct - Dec)

- Block out core 3D models (deck, cannon, environment)
- Gather and process real-world textures
- Apply materials using Adobe Substance 3D

Research Trip (November)

- Visit HMS Victory in Portsmouth
- Collect photo references, texture samples, and measurements
- Record environmental sound and layout details

Interim Viva Prep (Dec - Jan)

- Summarise early progress
- Present findings from research
- plan refinements based on supervisor feedback

Unreal Engine Integration (Jan - Feb)

- Import models and textures into Unreal Engine
- Set up camera, lighting, navigation, and basic scene structure
- Begin implementation of cannon interaction and triggers

VR Development (Feb - April)

- configure full VR support (movement, comfort settings)
- Add voice narration, pop-up text, and audio cues
- Build accessibility features: captions, quiet mode

Testing and Feedback (Mar - April)

- Run user tests with students and educators
- collect feedback on clarity, accessibility, interaction, and comfort
- Apply updates and refinements to improve UX and learning outcomes

Final Report (April)

- complete written report (6,000 words)
- Include methodology, testing results, analysis, and reflection

Final Viva / Game Demo (May)

- Present completed VR experience and Final Viva



Figure 3 Gantt Chart [6]

Resources

The project will be developed using industry-standard software and hardware for 3D modelling, texturing, and VR integration. A Meta Quest 3 headset will be used for testing, and real-world textures will be captured using folio equipment during the research trip. (See Appendix C - List of software tools and equipment).

User testing

User testing will involve first and second year students who will try out the 3D HMS Victory gun deck experience on either desktop or VR. After using the prototype, they will complete a short online questionnaire to give structured feedback on usability, clarity, interaction, and overall engagement. This feedback will help identify issues and guide improvements during development. (See Appendix D – SoAC Ethical Form).

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Appendices

Appendix A - Brief Literature Review

1. British Journal of Educational Technology, 51 (6) (2020), pp. 1991-2005, 10.1111/bjet.13023

A recently published meta-analysis found that VR is more effective than non-immersive approaches in terms of learning

2. Interactive Learning Environments ISSN: 1049-4820 (Print) 1744-5191 Hai Zhang, Luyao Yu, Mengxue Ji, Yulu Cui, Dongping Liu, Yan Li, Haiqiao Liu & Yining Wang

Students indicated that the answers given by the teacher were more detailed and easier to understand in the VR learning environment.

3. VR-Electricians: Immersive storytelling for attracting students to the electrical construction industry, Jing Wen , Masoud Gheisari ,Rinker School of Construction Management, University of Florida.

VR to be effective for providing students better understanding and visualizations of abstract concepts compared with traditional teaching methods.

4. AR/VR Teaching-Learning Experiences in Higher Education Institutions (HEI): A Systematic Literature Review Belen Bermejo 1 , Carlos Juiz 1,* , David Cortes 1 , Jeroen Oskam 2 , Teemu Moilanen 3 , Jouko Loijas 3 , Praneschen Govender 2 , Jennifer Hussey 4 , Alexander Lennart Schmidt 2 , Ralf Burbach 4 , Daniel King 4 , Colin O'Connor 4 and Davin Dunlea 4

In [16], the authors explained the benefits of VR in transforming learning and student experiences in classrooms. The experiment involved students using an educational VR experience that features an immersive narrative that puts students in the center of a historical moment in World War Two. The authors used a survey, an online test, and focus group questions. The results showed that there is a potential for immersive narrative VR experience to provide students with new experiences and provide both cognitive and affective benefits.

Appendix B - List of texture to photograph

- Deck planks
- Ceiling beams
- Bulkhead walls
- Cannon carriages
- Wooden crates
- Wooden barrels
- Hatch covers
- Hammock slings
- Mooring rope
- Cannon rigging rope
- Rope netting
- Pulley ropes and deadeyes
- Cannon barrel (iron)
- Metal hinges
- Metal brackets
- Nail heads and bolts
- Pulley brackets
- Red-painted wood
- Black-painted trim
- Yellow/gold trim
- Canvas hammocks
- Powder bags (cloth)
- Sail cloth
- Worn footpath areas
- Water - stained planks
- Mixed repair planks
- Gunpowder burns marks
- Soot - stained wood
- Water buckets (wood + rope)
- Lanterns (glass + metal)

Appendix C - List of software tools and equipment

- Autodesk Maya
- Adobe Substance 3D Painter
- Adobe Photoshop
- Unreal Engine 5
- Meta Quest 3
- Oculus software
- VR ready PC

- Smartphone
- Microsoft Forms
- Tap measure
- XP-pen
- Folio equipment
- Headphones
- Audacity
- Royalty free sound libraries

Appendix D - Declaration and Form Consent

DECLARATION

I, Philip Richmond declare that I am the sole author of this Project; that all references cited have been consulted; that I have conducted all work of which this is a record, and that the finished work lies within the prescribed word limits.

This work has not previously been accepted as part of any other degree submission.

Date: 20.10.25

FORM OF CONSENT

I, Philip Richmond hereby consent that my Project, submitted in candidature for the B.Sc. (Hons) Computing (stream) degree, if successful, may be made available for inter-library loan or photocopying (subject to the law of copyright), and that the title and abstract may be made available to outside organisations.

Date: 20.10.25

Appendix E -SoAC Ethical Form

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

This form must be completed and approved prior to undertaking any research activity.

SECTION A: About You (Principal Researcher)

1	Full Name:	Philip Richmond
2	Student Number:	2212266
3	Email address:	2212266@student.uwtsd.ac.uk
4	Programme of Study:	Independent Project (BA 2025/6 - ACCA6020)
5	Director of Studies/Supervisor:	Supervisor BA Program Team

SECTION B: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.	
1	UWTSD Research Ethics & Integrity Code of Practice	☒
2	UWTSD Research Data Management Policy	☒
3		☐

SECTION C: Details of Research Activity

1	Indicative title:	Student Learning Through VR: HMS Victory Gun Deck		
2	Proposed start date:	March 2026	Proposed end date:	April 2026
Introduction to the Research (maximum 300 words in each section) Ensure that you write for a Non-Specialist Audience when outlining your response to the three points below: • <i>Purpose of Research Activity</i> • <i>Proposed Research Question</i> • <i>Aims of Research Activity</i> • <i>Objectives of Research Activity</i> Demonstrate, briefly, how Existing Research has informed the proposed activity and explain • <i>What the research activity will add to the body of knowledge</i> • <i>How it addresses an area of importance.</i>				
3	Purpose of Research Activity To design and test a VR based educational experience using a 3D model of HMS Victory's gun deck. (this box should expand as you type)			
4	Research Question Can virtual reality improve engagement and support learning in historical education for students with limited access to heritage sites. (this box should expand as you type)			
5	Aims of Research Activity To explore the educational value of VR and assess how game design can support learning in historical contexts. (this box should expand as you type)			
6	Objectives of Research Activity The objective of this research is to find out if a VR simulation of HMS Victory's gun deck can work efficiently as an educational tool by testing its usability, accessibility, and learning impact with students. (this box should expand as you type)			
Proposed data collection methods (maximum 600 words)				

	Provide a brief summary of all the methods that may be used in the research activity to collect data, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	Data will be collected through practical user testing and anonymous questionnaire responses. Participants will be asked to interact with the 3D HMS Victory gun deck prototype, either through a VR headset (Meta Quest 3) or on a desktop version, depending on availability and accessibility. After using the prototype, participants will complete a short feedback form. This form will be delivered through either Google Forms or Microsoft Word Online, depending on context and ease of access. The form will ask participants to reflect on their experience, focusing on usability, engagement, clarity of interaction, and perceived educational value. No audio or video recordings will be made at any point. No personal information will be collected, and responses will remain completely anonymous. Participants will not be required to enter names, emails, or any identifiable data. The form will include a brief explanation of the project and confirmation that participation is voluntary and that all data is anonymous. All questionnaire responses will be stored securely using password protected cloud storage through the University's Office 365 system or Google Drive, depending on the form used. Any local storage or file transfer (USB) will be password protected. (this box should expand as you type)

SECTION D: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☐	☒
3	Use of focus groups?	☐	☒
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☐	☒
6	Use of computer-generated log files?	☐	☒

7	Participant observation with their knowledge?	☐	☒
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☐
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.	☒	☐
	Details of any other primary data collection method: Primary data will be collected through an online questionnaire completed by participants after they test the VR experience. The questionnaire will ask about their experience using the 3D HMS Victory gun deck, focusing on usability, engagement, accessibility, and educational value. All responses will be anonymous, and no personal data will be collected beyond basic demographic questions. Participants will be informed of the purpose of the study and their right to withdraw at any time. (this box should expand as you type)		

If you have ticked NO to every question then the research activity is (ethically) low risk and you may skip section E and continue to section F.

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION E: Intended Participants

	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☒	☐
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒

5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.	☐	☒
	Details of any other participant groups: Complete this only if your participants cannot give consent. This includes animals (this box should expand as you type)		

	Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected?	5 -10 (this box should expand as you type)
11	Who will the participants be?	Fellow students and peers from the Games Design course, including first, second year students. (this box should expand as you type)
12	How will you identify the participants?	Participants will be identified with support from course lecturers, who will help coordinate and set up short testing sessions during appropriate class times. Additional participants may be approached informally through course groups or in person discussion. Participation will be voluntary, and no personal or identifiable data will be collected. (this box should expand as you type)

	Information for participants:	YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☐	☐	☒
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☒	☐	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
17	If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☐	☐	☒
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☐	☐	☒
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☐	☐	☒

21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☐	☐	☒
22	If NO to any of above questions, please give an explanation			
	You should be able to tick YES for all of these questions. If not, then explain why not in this box. <i>(this box should expand as you type)</i>			

	Information for participants:	YES	NO	N/A
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☒	☐	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
	You should be able to tick NO for most of these questions. For any cases that you have ticked YES then provide details in this box. If you are using cameras/voice recorders to record interviews then please state that in this box. <i>(this box should expand as you type)</i>			

SECTION F: Anticipated Risks

	Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.	
1	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information. If you have identified in section D that there are no participants then enter N/A and go skip to question 3.	
	Risk to participants: Minor discomfort from VR use (motion sickness, eye strain), frustration with controls, or physical fatigue during short sessions. <i>(this box should expand as you type)</i>	How you will mitigate the risk to participants: Participants can choose between VR and desktop versions. Sessions will be brief, supervised, and optional. No personal data will be collected, and participants can stop at any time. <i>(this box should expand as you type)</i>
2	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity),	

	give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities	
	<i>(this box should expand as you type)</i>	
3	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
	Risk to the investigator: There are always risks. Do not write NA. <i>(this box should expand as you type)</i>	How you will mitigate the risk to the investigator: <i>(this box should expand as you type)</i>
4	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to the University: There are always risks. Do not write NA. <i>(this box should expand as you type)</i>	How you will mitigate the risk to the University: <i>(this box should expand as you type)</i>
5	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: <i>(this box should expand as you type)</i>	How you will mitigate the risk to environment: <i>(this box should expand as you type)</i>

SECTION G: Feedback, Consent and Confidentiality

If you have identified in section D that there are no participants then enter skip this section and continue to section H.

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	Participants will receive a short verbal debrief immediately after testing, explaining the purpose of the research and how their feedback will be used. The results and outcomes of the project will be summarised in simple terms for those who are interested. A contact email address will be provided in the questionnaire for participants to request further information or a summary of findings later date. <i>(this box should expand as you type)</i>
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	Participants will be informed of the purpose of the project, what is involved in taking part, and their right to withdraw at any time without penalty. For online questionnaires, a consent statement will appear on the first screen, outlining this information clearly. Participants will be told that by clicking Next, they are giving informed consent to take part. No personal data will be collected, and all responses will remain anonymous. Verbal consent will also be requested before any in-person testing begins. <i>(this box should expand as you type)</i>
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	All participant responses will be anonymous. No names, contact details, or personal data will be collected at any stage. The questionnaire will not include any identifying questions, and all feedback will be used in summary form only. Participants and institutions will not be named in any report, presentation, or publication. All data will be stored securely and handled in line with university data protection policies. <i>(this box should expand as you type)</i>

SECTION H: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 “GDPR” and the Data Protection Act 2018 “DPA”)?	YES	NO
1	“Personal data” means any information relating to an identified or identifiable natural person (‘data subject’). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☐	no
If YES, provide a description of the data and explain why this data needs to be collected:			
2	This includes audio/video data of participants, but can also include IP addresses and usernames. Names, addresses and emails also count, as do consent forms. (this box should expand as you type)		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	“Special category data” means sensitive personal data consisting of information as to the data subjects’ – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes),	☐	no
If YES, provide a description of the special category data and explain why this data needs to be collected:			
4	What counts as ‘sensitive’ will differ between cultures. Any information on behaviour that is not in accordance with cultural norms would count as sensitive personal data. (this box should expand as you type)		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☐	☒
6	University computers?	☒	☐
7	Private company computers?	☐	☒
8	Home or other personal computers?	☐	☒

9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
10	"Cloud" storage or websites?	☒	☐
11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation: All data will be stored in password protected cloud storage using the University's Office 365 system or Google Drive, depending on the platform used for the questionnaire. No audio or video recordings will be taken. Feedback will be collected anonymously through online forms created in either Google Forms or Microsoft Word Online. No personal data will be collected. Any files transferred via USB will be password protected, and all data will be handled in line with university data protection policies. <i>(this box should expand as you type)</i>		

Data Protection			
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☐	☒
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
18	Publication of data that might allow identification of individuals?	☐	☒
19	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and/or any international equivalent): <i>This includes data such as drafts of your thesis as well as experimental or survey data. An example of suitable text is given below.</i> <i>All data will be encrypted and kept in password protected cloud storage on the University Office 365 system which will not be shared. Any USB sticks used to store or transfer data will be password protected. All data transfers will be encrypted and password protected. All participants will be given a unique identifier to ensure confidentiality and this list will be kept securely in the password protected folder. The data will be stored until the completion of the project and then deleted. In accordance with the DPA2018, participants will have the right to ask to see what data is held relating to them, and this data will be deleted immediately if the participant requests this, in which case the data will not be used in the project.</i> <i>(this box should expand as you type)</i>		
20	List all who will have access to the data generated by the research activity: The data will only be accessed by myself as the principal researcher, my tutor/supervisor for academic guidance, and the external marker as part of the assessment process. No one else will have access to the data. <i>(this box should expand as you type)</i>		

21	List who will have control of, and act as custodian(s) for, data generated by the research activity:	
	Philip Richmond only <i>(this box should expand as you type)</i>	
22	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form.	
	All data will be stored on my personal computer, a password protected USB drive, and OneDrive (University Office 365 cloud storage) to ensure secure and efficient backup throughout the project. All storage locations will be password protected. No personal or identifiable data will be collected. Data will be kept only until the end of the project and will be permanently deleted after final assessment. No data will be shared outside of the project team. <i>(this box should expand as you type)</i>	
22	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtss.ac.uk/library/research-data-management/)	☒
23	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	☒

SECTION I: Declaration

The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtss.ac.uk/research/research-ethics/			
1	Signature of applicant:	Philip Richmond	Date: 20.10.25
2	Director of Studies/Supervisor:	Supervisor BA Program Team	Date: 20.10.25
3	Signature:	P Richmond	

FOR INTERNAL USE ONLY:

	Ethical approval given		
1	Signature of assessor:		Date:
2	Name:		
3	Role:		

Project Proposal ACCA6020 Philip Richmond 2212266_V1.

GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

75/100

BA GAMES – PROJECT PROPOSAL – ACCA6020
INDEPENDENT PROJECT (5%)

Student – Phillip Richmond
Mark –
75%

Intro / A&O (500 words)		
Project title; Identification of a specific problem to be investigated; Well-defined aims and SMART objectives; Explaining why this project is worth doing; Discussion of what the project needs to do in order to be a success; Description any deliverables that will be produced at the end of the project The title is descriptive and clearly outlines the project’s focus on VR, education, and the HMS Victory gun deck. It effectively communicates the intent to address accessibility to heritage sites. The problem (students’ limited access to	40	31

heritage sites) is specific, supported by references and highlights the inadequacy of traditional resources. Potentially reshape project to aim towards a museum/public education setting for your benefit when it comes to testing. Deliverables (3D VR gun deck, 6,000-word report, live demo) are detailed, and five aims align with the project's educational goals. Objectives cover key stages (research, modelling, testing). Ensure objectives are SMART by adding measurable outcomes (e.g., "80% user satisfaction") and deadlines (e.g., "complete modelling by December 2025"). Explicitly state success criteria (e.g., "functional VR experience with positive feedback"). Strengthen the rationale with broader benefits (e.g., inclusive education) and more evidence.		
Background to the Project (500 words)		
Description of how the work to be done by in the project relates to the work identified in the literature review; Discussion of any ethical issues raised by the project Identifying what has already been done within the field; Topic familiarity; Brief literature review using appropriate sources – 6-8 journal papers and book chapters rather than just websites; Selection of relevant models & concepts Appendix A cites four peer-reviewed sources, showing VR's educational benefits	40	28

(e.g., improved engagement). The ethical form (Appendix E) thoroughly addresses consent, anonymity, and VR risks (e.g., motion sickness) with mitigations (e.g., desktop option). Technical details (e.g., Maya, Unreal Engine) and the site visit plan demonstrate familiarity with VR and historical contexts. Identify gaps in VR/education research (e.g., naval history applications) to justify the project and introduce a theoretical model (e.g., experiential learning or gamification) to guide the VR design.		
Document Presentation		
Correct spelling, grammar and punctuation; Flow of narrative/fluency; Coherence; Word processed ; Correct use of referencing with bibliography; Strict word limit The proposal is well-structured with clear headings, detailed appendices (e.g., texture list, ethical form), and a Gantt chart for clarity. Referencing is mostly consistent, and the project plan is comprehensive. The writing is clear with a logical flow. IEEE used throughout with an extensive bibliography present – well done.	20	16

TOTAL	100	75
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