

Barley Hall Application Design Report

Overview

Barley Hall is a museum attraction in York where volunteers can be room guides and share knowledge about the history and archaeology of the site. The management team requested a media-based learning resource for volunteers to provide them with the capability to effectively conduct their position as room guides and improve the experience for visitors. A survey was created to find out effective learning methods to implement in the application. After data was collected, it was established that a gamified approach was most suitable to implement an engaging and enjoyable learning experience. When determining a design, inspiration was found through existing gamified applications, such as Duolingo. Multiple iterations of the design concept were developed, from basic wireframes to determine the initial interface design, to a functional mobile prototype of the application, showcasing the full functionality of the system, allowing volunteers to successfully learn the material and share their knowledge to visitors.

Design Approach

To generate a design concept, a questionnaire was made to determine an effective learning method for asynchronous learning. An interview process could have been used; however, this would not reach people as quickly, and the scope of the research didn't require the qualitative data that an interview would produce. The survey specifically focused on the respondent's previous experiences using learning materials, the commendations and criticisms of the learning materials they used, and the learning methods that they identified as being the most useful. The information gathered from these questions would be helpful in finding out what a user values when using learning materials, so that these elements can be included in the design, such as visual elements in the learning content. Contrastingly, any grievances that users have with existing learning materials can be identified so that they can be avoided in the design stage, such as text-heavy information or difficulty in navigating the content.

The four respondents to the survey were all in the age range of 18-24 and had good to excellent computer literacy. They were all familiar with learning materials and used them often. Previously used learning materials excelled in providing information effectively in large amounts to aid learning but suffered from complex navigation and text-heavy content. There was one result that was most consequential in dictating the path of the design process.

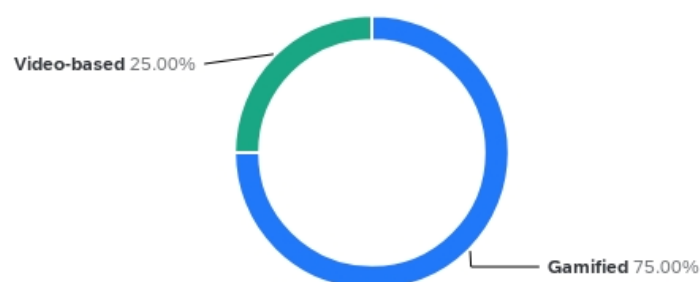


Figure 1. Chart showing chosen learning method by respondents

As Figure 1 shows, the most popular learning method among respondents was gamified learning. The findings showed that this learning method keeps users engaged the most and keeps the experience enjoyable. It was clear from the survey results that gamified learning was the most suitable learning method to adopt in the prototype. The full survey results can be found in Appendix D.

As part of the desk research, a site visit of the Barley Hall attraction was conducted, as well as viewing the existing training materials that Barley Hall provides its volunteers. The site visit signified some of the problems that may occur for prospective volunteers. Given Barley Hall's extensive history, it would clearly be difficult for new volunteers to consume all this information. The number of rooms and memorabilia throughout the attraction would mean that a lot of content would need to be learnt to share this knowledge to visitors. The existing training materials emphasised this problem, with the existing role pack filled with informative but text-heavy and dry material. It is difficult to fully navigate through and properly digest the content that is in the pack. The training videos also provided, while again informative, is long and unengaging. The desk research highlighted how predominantly text-heavy content should be avoided, and how designs should focus on making an enjoyable learning experience that succeeds in allowing volunteers to effectively learn the large amount of history that Barley Hall has.

With this research, a user persona and a user journey were created to inform the design. A user persona was made to understand the user of the system and personify the data that was collected.

	Amanda Brown Volunteer	
Age 24	Summary Amanda is a part-time volunteer who has an interest in medieval England. Her work as a volunteer helps her share her interest with visitors and learn more about this time period.	
Education Level 3	Characteristics Amanda is an enthusiastic individual who is an eager learner. She loves to socialise and meet new people.	
Computer Literacy Good	Tasks • Delivers information to visitors about the attraction • Has to learn about the history of the attraction • Must be approachable and passionate to visitors	Frustrations • Finds it difficult to learn with the current system • Text-heavy information sheets are overwhelming • Difficult to stay engaged when learning

Figure 2. Volunteer User Persona

As respondents of the survey were of a younger age range, and therefore this was reflected in the user persona. Based on the desk research, the user persona addresses what is expected a volunteer. The lack of a gamified learning method results in a lack of engagement with current learning materials, and with content being text-heavy and dry. It is important to highlight this in the user persona, as to show the gap that a gamified learning system can fill.

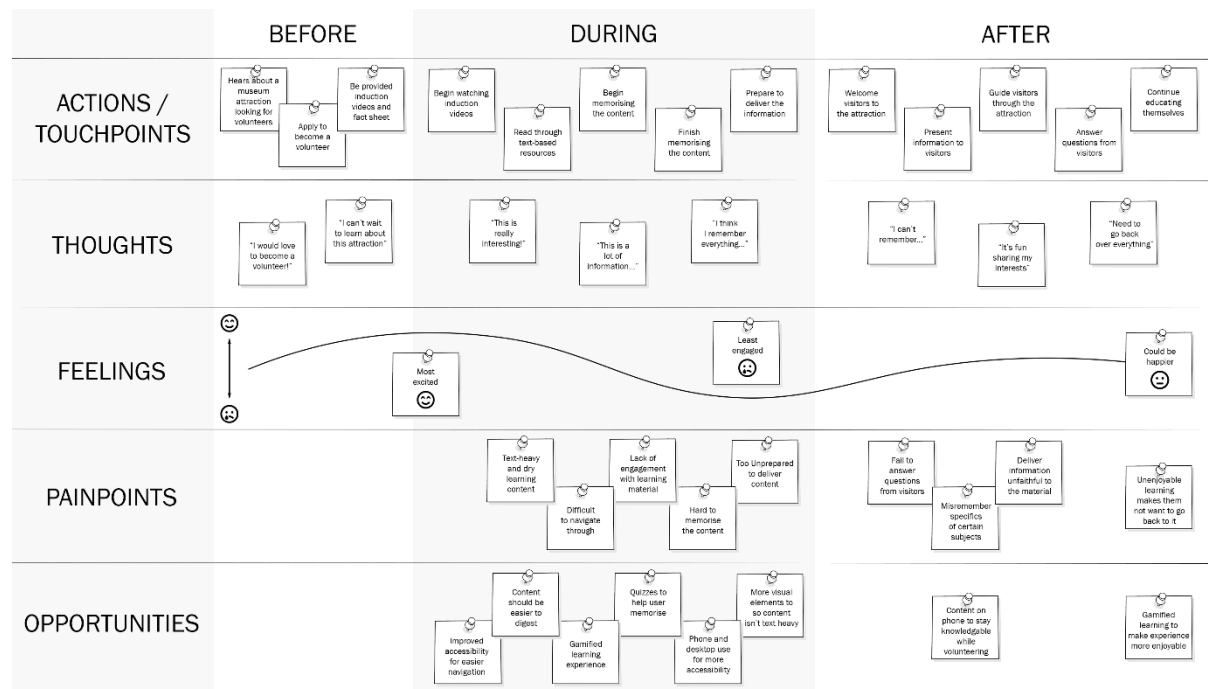


Figure 3. Volunteer User Journey Map

The user journey map shows the actions and thoughts of a volunteer using the current training material. It addresses the actions the user completes before becoming a volunteer, during the learning process and afterwards when delivering the information to visitors. It addresses the issues with the current training materials, and how the lack of engagement and satisfaction from learning with the current methods affect the volunteer's ability to provide a satisfying and informative experience for a visitor at the attraction. The user journey addresses some of the pain points as a result, such as the difficulty to memorise the large amount of content and consequently disrupting the visitor experience, and the opportunities that arise from this with future designs, such as the features to implement, like a gamified learning experience along with quizzes to test the user's knowledge.

Design Statement

The design seeks to address the limitations of current volunteer training materials, with it being text-heavy and inaccessible, and instead provide a comprehensive and engaging learning experience with the use of gamification, allowing volunteers to effectively present the material they learn. The design will be for a mobile application and will be focused on the theme of the Great Hall. The user persona and user journey maps outline how the lack of enjoyment from current training resources affect how a volunteer can complete their tasks as a room guide. From the research collected, gamification is a possible solution that can help volunteers learn a large amount of content in an interesting and exciting way.

Functional and Non-Functional Requirements

As part of the design process, five core functional requirements were created to outline the core features that should be included in the design:

1. Information can be viewed for each room in Barley Hall.
2. Quizzes can be complete for each room in Barley Hall.
3. Learning progress should be monitored and displayed to the user.
4. Search functionality to quickly find specific information.
5. An account system can be used to sync progress across devices.

As seen in the user persona, current volunteers would find it difficult to stay engaged when learning, in addition to being overwhelmed by the text-heavy content. These functional requirements would help break down the information into smaller chunks and help the user learn the material. In addition to these functional requirements, four more non-functional requirements were created to establish what the system should behave like:

1. Navigation should be easy and not complex.
2. Design should be accessible for all users.
3. Application should be informative and useful.
4. Features should be easily understood.

As a result of the wide demographic of users that this application should cater for, the non-functional requirements focus on aspects that should make the design easily digestible for the user, ensuring that the experience using the application is natural and accessible. The user shouldn't have to spend time learning how to use the application and should instead be able to use the application for its designed purpose.

Design Context

There were three examples that were used as inspiration during the design process. These included:

1. Duolingo app.
2. National Trust website.
3. Adobe's 8 basic design principles.

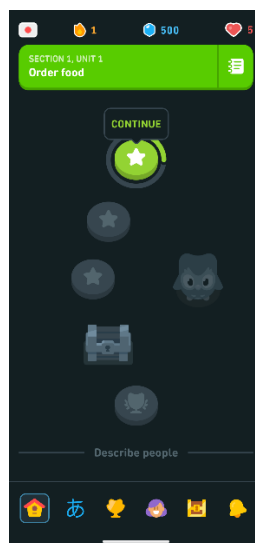


Figure 4. Duolingo Interface

Duolingo was a significant source of inspiration when designing the application. Its use of gamification to create a fun and enjoyable learning experience was desired in the design of the prototype. The use of a 'Streaks' system is something that ensures a user continues to learn and memorise content from the app. Despite the different use case, this feature would be useful when implemented into the design of the Barley Hall application.

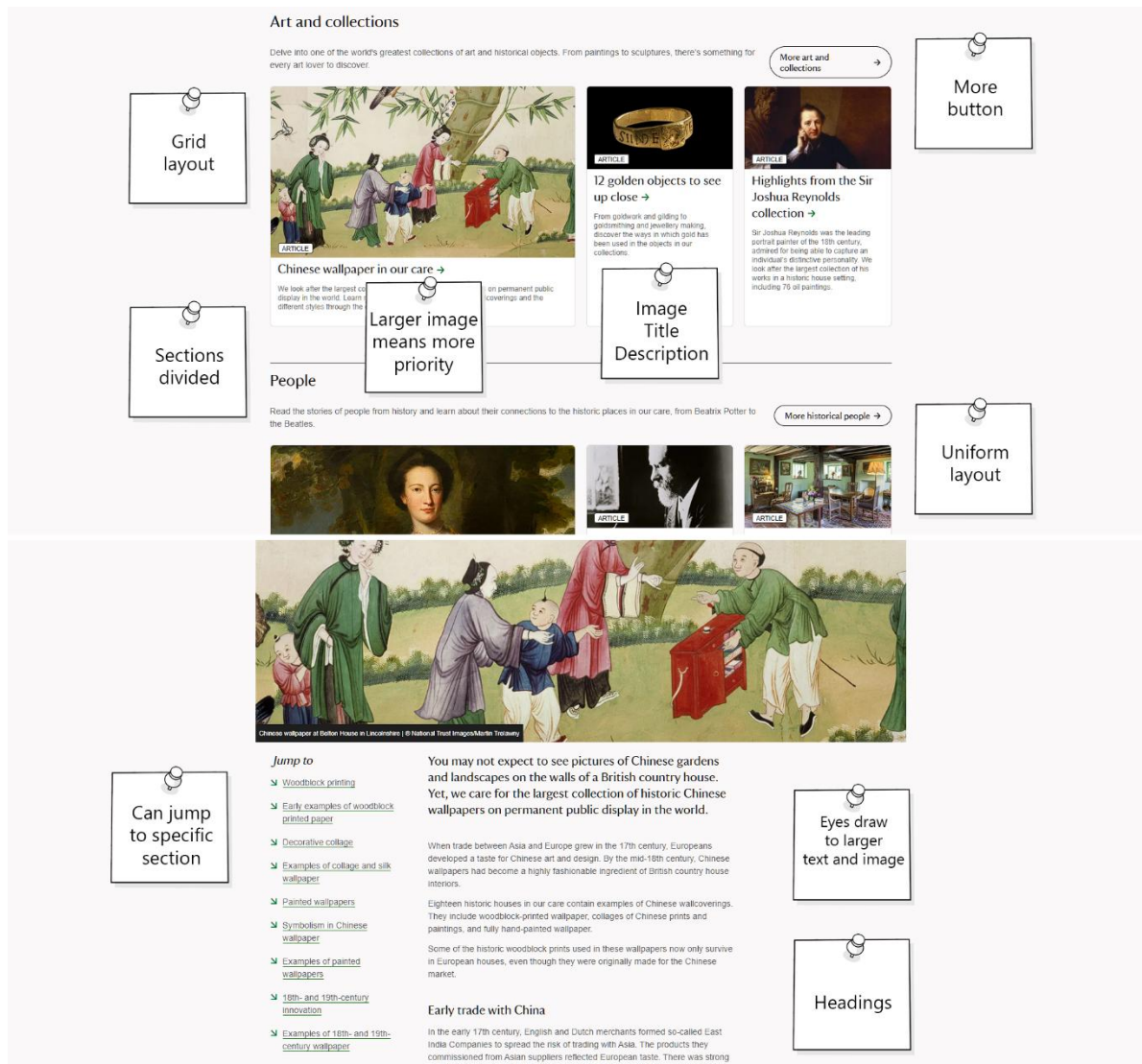


Figure 5. Labelled National Trust Website

The National trust website was useful to determine how an existing museum trust uses their website to structure and architect information on their website. This was useful in the design process, as the website was used as a source of inspiration on how to structure historical information in a way that is easily navigable.

Lastly, Adobe's 8 basic design principles were referred to throughout the development process to ensure that the designs produced were aesthetically pleasing and easy to navigate. Specifically, principles focusing on alignment and hierarchy were useful to ensure that designs looked correct, and that information was easy to digest.

Development Process

The development process consisted of 4 significant stages. These included the initial wireframe, low-fidelity prototype, high-fidelity prototype, and heuristic evaluation.

Wireframe

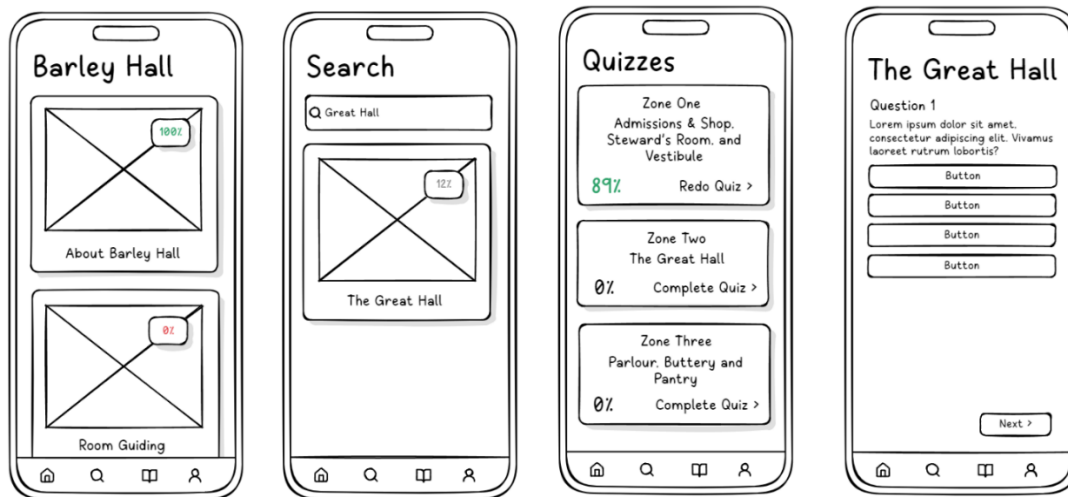


Figure 6. Initial Wireframes

The initial wireframes outlined how some of the core features of the application may work. On the home page, information can be found regarding a specific subject regarding Barley Hall. They would be able to see their progress for this section, which would be indicated by a percentage. The search page would narrow down the information on the home page, allowing the user to quickly find the information that they require. The quiz page would show the user's progress for the quizzes of each section. The quizzes themselves would then offer multiple-choice questions based on the subject. The app bar at the bottom would allow for easy navigation through each of the pages within the application. While these wireframes were simple, it outlined a direction to which the prototypes would go down.

Low-Fidelity Prototype

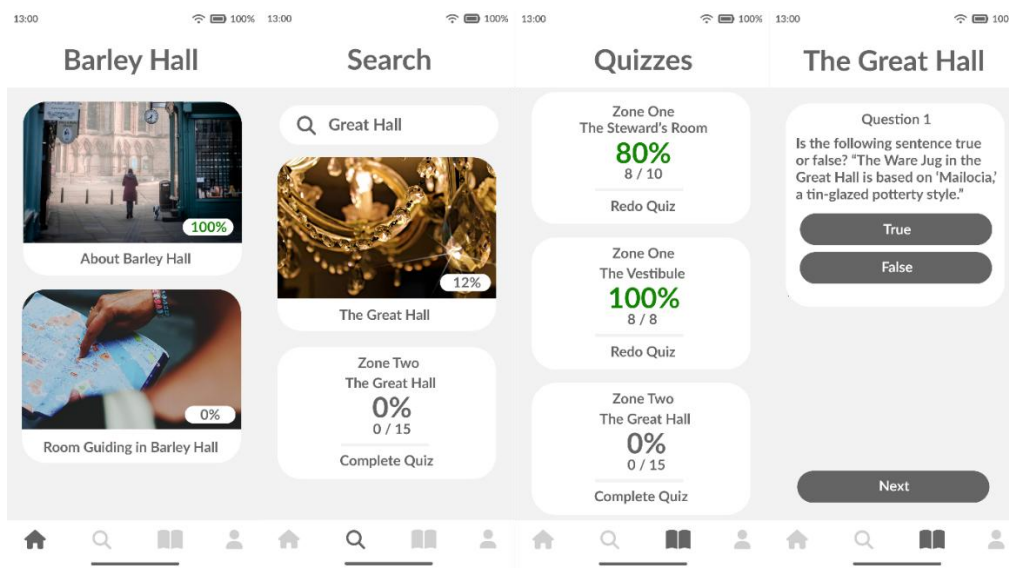


Figure 7. Low-Fidelity Prototype

The first prototype created was an evolution of the wireframe before it and followed a similar design. The home page included access to pages of information, allowing the user to also see their progress through that section. The search page again included the ability to find the specific subject they need, with now the quiz for that section also being shown. The quiz page was slightly restructured, with it now showing the number of questions the user got correct. The question page is also similar, with multiple-choice questions given.

While the low-fidelity prototype was a good evolution from the initial wireframes, there were some improvements that could be made. The aesthetics were bland and did not fit the theme of the desired design. Some functionality was also missing, like the ability to sync progress across multiple devices, and gamification elements to make the application more engaging for the user. Improvements could also be made to navigation, as finding specific information is not fully fleshed out and looks difficult in this low-fidelity prototype.

High-Fidelity Prototype

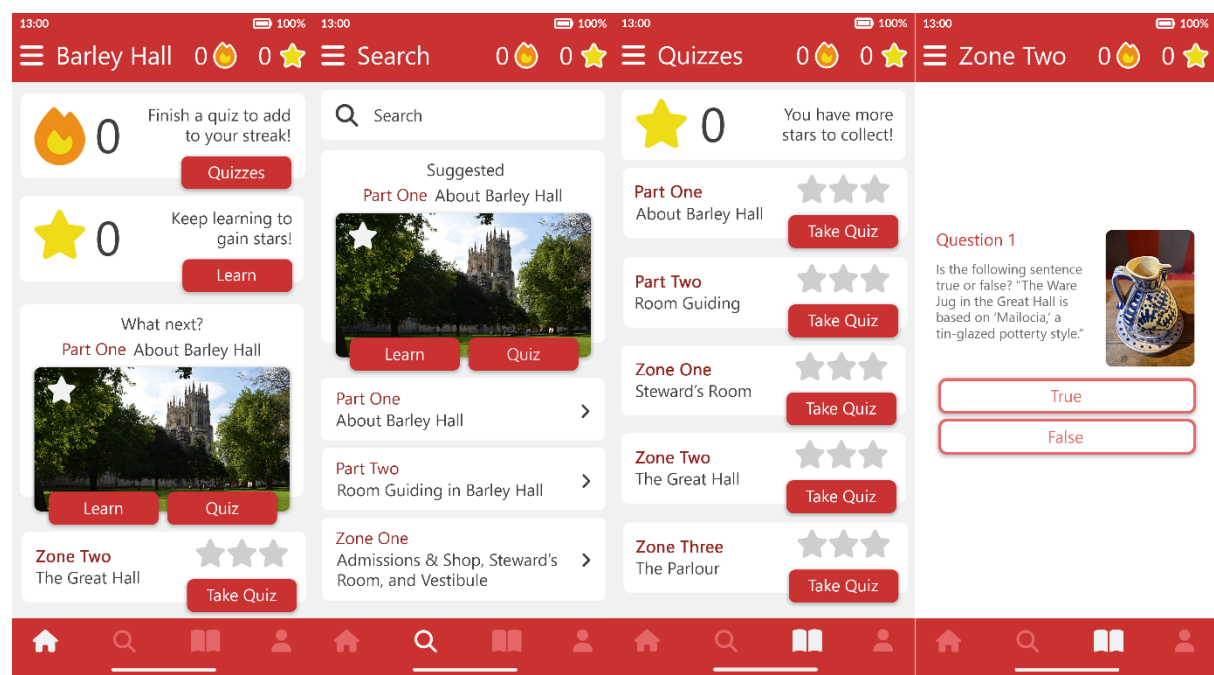


Figure 8. High-Fidelity Prototype

The high-fidelity prototype introduces multiple features and aesthetic improvements compared to the previous iteration. Most notably, 'streaks' and 'stars' were added to introduce gamified elements to the application's design. Streaks are awarded each day when a user completes a quiz. This encourages the user to open and complete a quiz each day to ensure they memorise the content they have learnt. Stars are also awarded when a user completes the learning content for a specific section, as well as when completing quizzes. Stars also act allow users to view progress on specific quizzes and show where they can earn more stars to add to their tally. Stars will help users stay engaged and make the learning experience fun. The high-fidelity prototype also shows how a user can easily sync across multiple devices in the account page, allowing for progress to be synced across multiple devices. Navigation was also improved in this iteration, with information being separated into smaller chunks to allow for information to be digested easier.

Heuristic Evaluation

Once the high-fidelity prototype was created, an expert evaluation was conducted to assess the usability of the prototype. As seen in Appendix F, the heuristic evaluation concluded that Nielsen's heuristics were largely followed to a good standard. Conventions were followed throughout the prototype and aesthetics were appropriate. There were some improvements that could be made, such as some complexity accessing specific information, and some text-heavy pages.

Critical Reflection

I aimed to create a high-fidelity prototype that allows volunteers to efficiently learn and memorise information about the Barley Hall attraction, to then successfully deliver the content to visitors. The prototype included an effective learning with the use of gamification elements like a points system and streaks, achieving the goal of an engaging learning experience. The main functional requirements were all achieved and to a high standard. The search functionality could have been improved slightly, such as lessening the number of pages the user must go through to find a specific section. While all the functional requirements were met, some of the non-functional requirements could have been focused on more. For example, more accessibility features could have been added to the application to ensure a wider demographic is catered for, such as zoom functions or text-to-speech. As shown in the heuristic evaluation, navigation could be slightly improved to make it less complex. However, I do believe the application is informative for the userbase and features within the application are easy to understand. If a functional build of the prototype was to be made, I would expand upon accessibility and navigation to make it easier for the wider demographic to use. Otherwise, the application achieves the goal that was set out and would be successful in its purpose when used by volunteers.

(Word Count: 2270)

Bibliography

Duolingo (2025). *Duolingo*. [Computer Software]. Available at: <https://www.duolingo.com/> [Accessed 15 January 2025].

National Trust (2025). *Home | National Trust*. [Online]. National Trust. Available at: <https://www.nationaltrust.org.uk/> [Accessed 15 January 2025].

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Appendix A – Ethics Checklist



School of Arts and Creative Technologies

RESEARCH ETHICS CHECKLIST FOR TAUGHT STUDENTS

FOR PROJECTS USING DEPARTMENT LEVEL ETHICS PRE-APPROVAL

This checklist is to be used **ONLY** for research work by ACT students who wish to use the Department Level Ethics Pre-Approval to accommodate the ethical risks of their proposed research work.

Students must ensure that their proposed research work can be accommodated by the restrictions in this Checklist. If not, you will be unable to conduct the work without further Ethical scrutiny by the ACT Ethics Committee as the work is considered to have higher ethical risks. To apply for additional Ethics approval, you must submit the Research Ethics Clearance Form for review by the ACT Ethics Committee. However, please note that some modules DO NOT permit students to submit individual Ethics applications.

All students who use the Department Level Ethics Pre-Approval for their work must complete this checklist and include the following as Appendices to their assessment reports:

- This completed Checklist;
- Example Participant Information Sheets and Participant Informed Consent Forms, if appropriate;

Please note that if this Ethics Checklist is associated with an assessment that has an **anonymous submission** (i.e. if you are using your Exam Number, Y123456 for submission) you **MUST** redact your name and any other information that would identify you as an individual from the appendices before submission.

Please note that your assessment markers will compare the submitted assessment work to this Ethics Checklist, Information Sheets and Consent Forms to ensure compliance.

You are also required to conduct this research work in compliance with the General Data Protection Regulation (GDPR). Information on how to ensure compliance is available on the ACT Ethics VLE site.

Before completing this Research Ethics Checklist for Taught Students, please consult the ACT Ethics VLE Site for guidance and further information.

SECTION 1: STUDENT AND PROJECT DETAILS

Box 1A: Student Details ALL students must complete this box	
Student Name OR Exam Number for Anonymous Submission	Y3934341
Degree Title	BSc Interactive Media
Stage (e.g. 2 nd year Undergraduate)	2 nd Year Undergraduate
Role in Project (e.g. Team Leader)	Primary Investigator

Box 1B: Project Details ALL students must complete this box	
Module Title and Module Code	User Experience Design TFT00036I
Project Supervisor Name and Email Address	Sanjit Samaddar sanjit.samaddar@york.ac.uk

Box 1C: Project Details ALL students must complete this box	
Project Title	Summative Assessment
Project Submission Date	16/01/25

Please complete Section 2: Research Ethics Concerns

SECTION 2: RESEARCH ETHICS CONCERNS

Box 2A: Checklist of Research Ethics Questions		YES	NO
ALL students must complete this box			
1	Will the project involve conducting work that would typically require NHS Ethics approval? That is, will you be working with any of the following as participants, if recruited specifically due to their involvement with the NHS: - Patients and Users of the NHS, - Relatives or carers of patients and users of the NHS, - NHS staff? OR will you be using or accessing NHS premises or facilities as part of the work?		X
2	Will the project involve conducting work that would typically require His Majesty's Prison & Probation Service Ethics approval? That is, will you be conducting research with staff and/or offenders in prison establishments, National Probation Service (NPS)/Community Rehabilitation Companies (CRC) regions or within His Majesty's Prison and Probation Service (HMPPS) Headquarters? OR will you be conducting research on HMPPS premises?		X
3	Will you be working with vulnerable participants (e.g. those under 18, people with learning disabilities, people with mental impairment due to health or lifestyle, people who are terminally ill or recently bereaved etc.)? Note that if you are unsure whether someone you would like to work with could be considered vulnerable under the circumstances, you are required to discuss your concerns with the module leader, your supervisor and/or Ethics Chair. It is generally expected that any student working with vulnerable groups would submit the longer Research Ethics Clearance form.		X
4	Will you be identifying any of the participants in your outputs?		X
5	Will you be discussing sensitive or potentially upsetting or distressing topics with participants?		X

Box 2A: Checklist of Research Ethics Questions		YES	NO
ALL students must complete this box			
6	Is it reasonably foreseeable that the work could involve causing physical or emotional distress to participants or researchers?		X
7	Is it reasonably foreseeable that the participants could disclose or discuss participation in illegal activities (e.g. drug use)?		X
8	Is it reasonably foreseeable that the participants could disclose confidential or sensitive information (e.g. financial data, sensitive organisational data)?		X
9	Will you be deliberately misleading the participants in any way?		X
10	Will you be filming or making recordings of people without their knowledge and consent (e.g. covert filming of people in non-public places)?		X
11	Will you be researching or discussing issues relating to terrorism or political extremism as part of your work?		X
12	Will you be collecting online data that has been generated by human participants (e.g. social media data) from closed, restricted forums (i.e. from closed communities or those that require approved membership to view, e.g. restricted Facebook groups)?		X
13	Will you be identifying anyone from online data that has been generated by human participants (e.g. social media data) from either open or closed forums (i.e. by including information that could make the individual identifiable, such as direct quotes or usernames)?		X
14	Could the work involve potentially damaging property and/or the natural environment?		X
15	Will the work involve animals?		X
16	Is it reasonably foreseeable that the work could result in any anticipated university/institutional risk (e.g. adverse publicity or financial loss)?		X
17	Will you be compensating participants with financial inducements OTHER THAN reasonable incentives (e.g. chocolate, cake) for the inconvenience?		X

Box 2A: Checklist of Research Ethics Questions		YES	NO
ALL students must complete this box			
18	Will you be paying participant expenses?		X
19	Will you be conducting any of the work for this project OUTSIDE of the UK?		X

If you have answered “YES” to ANY of the questions in Box 2A: Checklist of Research Ethics Questions:

The Department Level Ethics Pre-Approval together with this Research Ethics Checklist for Taught Students MAY be insufficient to accommodate the ethical risks of your proposed work.

Some lower-risk ethical issues can be accommodated without further Ethical scrutiny provided that you agree to follow a process that is considered appropriate. These situations and processes are described on the ACT Ethics VLE site.

IF there is a suitable procedure to manage this ethics issue, please complete Box 2B to provide further details of how you intend to manage the ethical issues associated with your proposed work in consultation with either the module convenor or your assessment supervisor.

Box 2B: Further Details Complete this box if you answered “Yes” to any question in Box 2A AND there is an identified procedure to manage the ethical risks in this situation.
Provide details of the nature of the ethical risks that you identified by answering YES to questions in Box 2A and describe the process that you will follow to minimise the risks. Please note that if you answered YES to Question 17 and/or 18: Will you be paying your participants? If research participants are to receive any payments, reimbursement of expenses, or any other incentives or benefits for taking part in your research, please give details, indicating what and how much they will receive and the basis on which this was decided. Payment must follow the University’s policy. Please note that the policy includes maximum limits and researchers should note that they may pay less than these, as appropriate.

Alternatively, the associated risks of your proposed work may be sufficiently low risk that an appropriate approach can be agreed with the ACT Ethics chair without requiring submission of the ACT Research Ethics Clearance form. Your supervisor/module convenor may contact the ACT Ethics on your behalf to identify an agreed process on a case-by-case basis. If your supervisor has discussed your proposed work with the ACT Ethics Chair via email, please complete Box 2C: Case-By-Case Agreed Process.

Box 2C: Case-By-Case Agreed Process			
Students must complete this box IF they have answered “YES” to any questions in Box 2A AND there is no identified procedure to manage the ethical risks of the proposed work. Note, that most students will need to submit a ACT Research Ethics Clearance form and this case-by-case process approach is ONLY suitable for work that can be considered low risk.		YES	NO
1	Has your project supervisor or module convenor discussed the proposed work and associated ethical risks with the ACT Ethics Chair via email?		
2	Was your project supervisor or module convenor able to agree a process to manage the low risks associated with your proposed work?		
IF YES to BOTH questions please provide further details of the anticipated risks of the proposed work and the process that was agreed with the ACT Ethics chair. Please include dates of the email correspondence AND the name and email address of supervisor/module convenor involved.			

If the associated risks of your proposed work cannot be accommodated through an identified procedure or through a case-by-case agreed process then, provided the module convenor permits it, you will need to submit an application to the ACT Ethics Committee for review using the Research Ethics Clearance Form. But, please note that some modules do NOT permit students to submit individual applications to the Ethics Committee.

Please complete Section 3: Data Protection

SECTION 3: DATA PROTECTION

In order to comply with the General Data Protection Regulation (GDPR) you **MUST** adhere to the data usage and storage principles described in Box 3A: Checklist of Data Protection Questions.

Box 3A: Checklist of Data Protection Questions		YES	NO
ALL students must complete this box			
1	Will you guarantee that you will inform all people whose personal and/or special category data that you are using: • What data you will be collecting and why; • How you will be storing the data; • The legal basis under which you are storing the data; • When/if/how the data will be destroyed? Please note that using a GDPR Compliant Project Information Sheet will ensure you meet these requirements.	X	
2	Will you guarantee that IF you use a portable device to collect electronic data you will transfer that data to your University Google Drive account or University Filestore as soon as possible after the interview AND delete it from your personal device?	X	
3	Will you guarantee that the data will ONLY be accessible to the project team AND that IF the project team extends beyond the University of York that you have consulted the University's IP and Legal team to ensure appropriate data protection safeguards are in place?	X	
4	Will you guarantee that you will ONLY use Google Forms OR Qualtrics to host online surveys that collect personal and/or special category data?	X	
5	Will you guarantee that you are collecting the MINIMUM amount of data necessary for the intended project?	X	
6	Will you guarantee that IF you are storing or accessing data from OUTSIDE the European Economic Area (EEA) you will access the data through your University of York Google Account connected to the University of York Virtual Private Network (VPN)?	X	

Box 3A: Checklist of Data Protection Questions		YES	NO
ALL students must complete this box			
7	Will you guarantee to destroy all physical AND electronic data EITHER after your module marks have been ratified by the Board of Examiners OR 10 years after last requested access?	X	
8	IF storing electronic data for 10 years after last requested access, will you guarantee to EITHER use a University Google Drive account OR an approved data repository service to store the data?	X	
9	Have you screened your project against the Data Protection Impact Assessment (DPIA) screening questions AND if required conducted a DPIA and submitted a copy to the Data Protection Officer for review?	X	
10	If capturing audio, will you use an encrypted device for recording (e.g. an Apple iOS device or encrypted voice recorder)?	X	
11	Where data is held on an encrypted portable device (e.g. laptop, tablet) will you back it up to a University approved service as soon as possible and perform periodic checks to ensure data is being backed up appropriately?	X	
12	Will you ensure confidential information is encrypted before it is transmitted/shared digitally?	X	
13	Please detail what other protections will be used for digital data (e.g. access/edit permissions, procedural safeguards re downloads/making copies, remote access via VDS/VPN, 2 factor authentication)?		
	Give answer here: Above examples, along with password protection		
14	Confirm you have reviewed the user commitments under the Policy for the safe use of University information on devices . Detail anything in the user commitments that will pose a challenge in carrying out your proposed research.	X	
	Give answer to the second element of question 14 here: N/A		

Box 3A: Checklist of Data Protection Questions		YES	NO
ALL students must complete this box			
15	Will you ensure that personal data or confidential data held on paper are stored in a lockable filing cabinet or container, and/or a locked room in secure premises?	X	
16	How will devices be physically protected (e.g. in transit, when not in use or left unattended)?		
	Give answer here: Laptop cases and phone cases will be used		
17	Will you ensure the device(s), accounts, or storage area(s) used to store data are not accessible to any unauthorised parties?	X	

Box 3B: Checklist of Data Retention Questions		YES	NO
ALL applicants must complete this box			
1	How long will you keep personal data after the project, in what form and for what reason? https://www.york.ac.uk/library/info-for/researchers/data/sharing/		
	Give answer here: Until marks for the module are ratified ~July 2025		
2	When will the research data be destroyed, by whom, and how? https://www.york.ac.uk/library/info-for/researchers/data/sharing/#tab-2		
	Give answer here: By the principal investigator (me) around July 2025 (BoE ratification panel)		

Box 3B: Checklist of Data Retention Questions		YES	NO
ALL applicants must complete this box			
3	Will any personal or special category data (i.e. data that is not truly and irrevocably anonymised) be deposited in an archive or external repository? https://www.york.ac.uk/library/info-for/researchers/data/sharing/#tab-4 Move on to Question 5 if you have answered ‘no’		N/A
4	Where personal data are to be transferred to an archive or repository, please confirm that your Information Sheet will: (i) cover the archiving and reuse of any personal data and participant agreement to this, (ii) explain to participants the benefits of any data sharing, (iii) indicate where possible whether research data will be deposited in a named, recognised repository (e.g. Archaeology Data Service, UK Data Service, York’s institutional repository, etc.)		N/A
5	Where you have special category personal data or criminal data, will it be destroyed in line with an agreed retention policy (set by the University, the data provider, or approved by this ethics committee)? You may enter ‘N/A’ if you are not collecting this type of data		N/A

Before submission of your assessment work, you must complete Section 4: Student Agreement. This completed Checklist must be included as an Appendix to your assessment report, together with examples of your Project Information Sheets and Informed Consent Forms.

SECTION 4: STUDENT AGREEMENT

Box 4A: Student Agreement		YES	NO	N/A
ALL students must complete this box.				
1	I confirm that the work conducted for the above project has met all the statements as expressed in this Research Ethics Checklist.	X		
2	I confirm that the work conducted for the above project was guided by the University's ethical rules and regulations.	X		
3	I have included example Project Information Sheets and Informed Consent Forms as Appendices to my report, if applicable.	X		
4	I confirm that I have adhered to the ACT requirements for storing personal and special category data compliant with the General Data Protection Regulation (GDPR). Note that GDPR compliance guidance can be found on the ACT Ethics VLE site.	X		
5	I confirm that, if applicable, all payments made to personnel in relation to this project have complied with financial regulations.			X
Student Name (or Exam Number for Anonymous Submission)		Y3934341		
Date		16/1/25		

Box 4B: Supervisor Agreement		YES	NO
1	I have reviewed this Research Ethics Checklist.		
2	I have reviewed the Project Information Sheets and Informed Consent Forms, as applicable.		
Supervisor Name			

Box 4B: Supervisor Agreement		YES	NO
Signed			
Date			

Appendix B – Survey Information Sheet / Consent Form



This online survey is part of a student project for a User Experience Design module at University of York, UK. The survey aims to gather information on an effective method for asynchronous learning. The results of this survey will help me to create a prototype for an interactive media-based learning resource for volunteers at a museum attraction. The estimated completion time for the survey is 5 minutes.

The survey is conducted by [REDACTED]

All data will be gathered and reported anonymously.

On what basis will you process my data? Under the General Data Protection Regulation (GDPR), the University has to identify a legal basis for processing personal data and, where appropriate, an additional condition for processing special category data. For further information and definitions of personal and special category data, please go to:

• <https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/>

Special category data is personal data which the GDPR says is more sensitive, and so needs more protection.

In this study, we will not be collecting any special category data. Research activities will only be undertaken where ethical approval has been obtained, where there is a clear public interest and where appropriate safeguards have been put in place to protect data.

In line with ethical expectations and in order to comply with common law duty of confidentiality, we will seek your consent to participate where appropriate. This consent will not, however, be our legal basis for processing your data under the GDPR.

All data collected will be destroyed after the final marks for the academic year have been ratified.

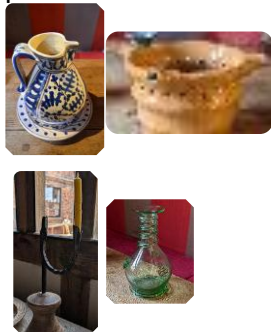
By completing this survey you are providing consent to participate in this study.

I confirm that I am 18 years old or older.

☐ Yes

☐ No

Appendix C – Copyright

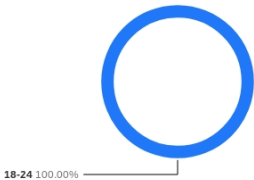
Description of Asset (include any images)	Source (include URL)	Location on your prototype	License / Permission
Text from learning pack	From learning pack provided by client	Quiz and in Great Hall information	Used under Illustration for Instruction principle.
Images from learning pack 	From learning pack provided by client	Quiz	Used under Illustration for Instruction principle.
	https://pixabay.com/photos/chandelier-crystal-decoration-448719/	Search Page	Pixabay Content License
	https://pixabay.com/photos/gothic-gothic-english-york-york-4182003/	Home page, search page, score page	Pixabay Content License
	https://pixabay.com/photos/map-tourism-lost-direction-guide-4152197/	First prototype – Home page	Pixabay Content License
	https://www.pexels.com/photo/woman-walking-dog-in-old-town-11661336/	First prototype – Home page	Pexels Content License
Assortment of Font Awesome icons	https://fontawesome.com/	Across all pages on high and low fidelity prototypes	Font Awesome Public License

Appendix D – Survey Responses

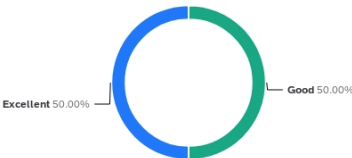
Survey Responses

Learning methods survey

Age Range



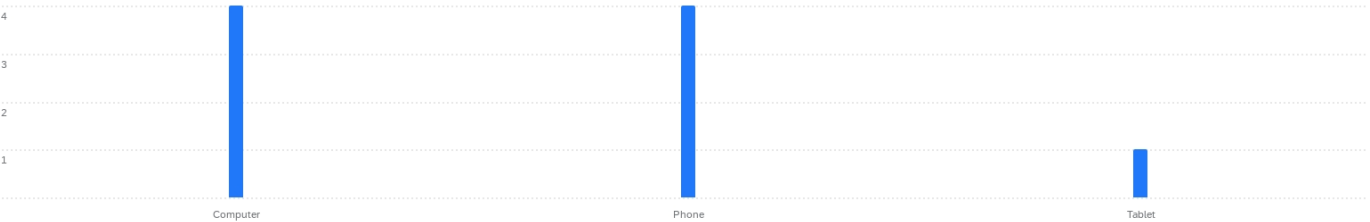
Computer Literacy



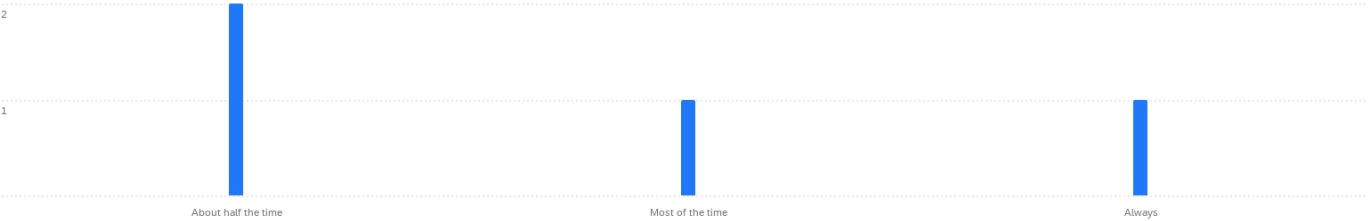
Used Learning Materials

What digital learning materials do you use?
Virtual learning environment
Virtual learning environment
Online training resources for my Job to teach me about the correct ways to 00work the register.
training videos

Learning material location ▾



How often learning materials are used ▾



How learning materials help to learn

How do these digital learning materials help you learn?

It helps me easily access a large amount of information

gave instructional courses and interactive media so your able to use your knowledge practically

They provided me with valued information in helping to make sure that i fully understood the knowledge, they did this by providing progress bars and the ability to go back to previous bits of data.

visual guidance on topics and processes are easier to understand for me

Challenges with learning materials

What challenges do you face when using these materials? (e.g. poor accessibility, difficult navigation, text-heavy, etc.)

Maybe some complex navigation and not very visual

sometimes text heavy or they are locked behind a paywall

On the off chance i do use phone to access materials, it is usually a very choppy and clunky design. The transference between desktop and phone visual often messes with sizing to where text is too big or videos take up the entire screen.

some can be too fast-paced, aswell as heavy on text

Text-based learning methods

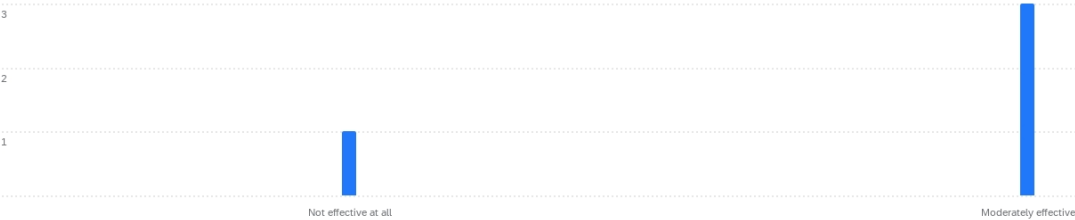
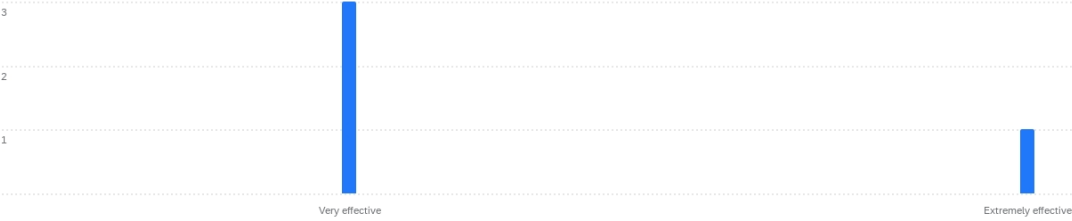
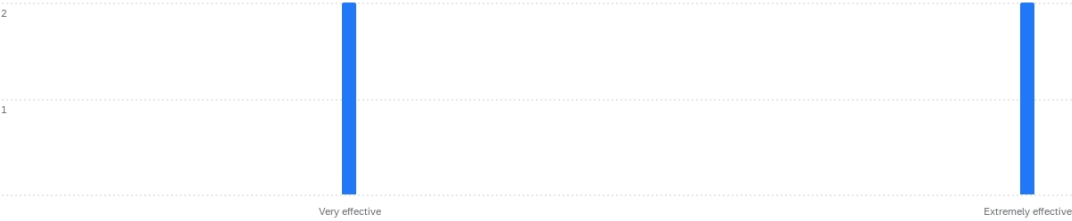


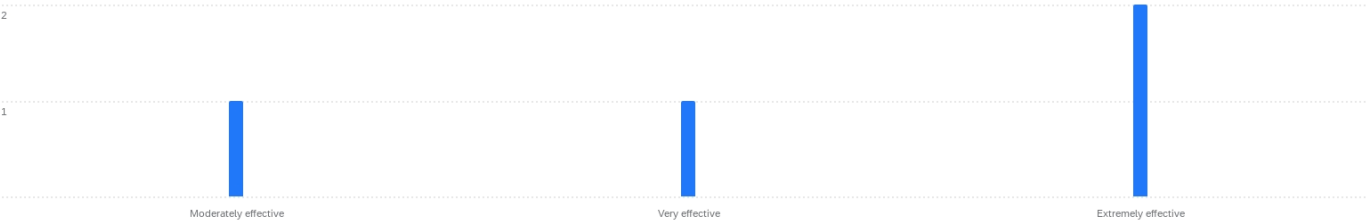
Image-based learning method



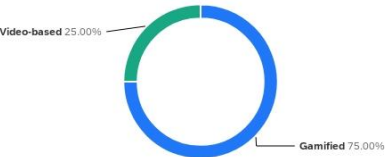
Video-based learning method



Gamified learning method



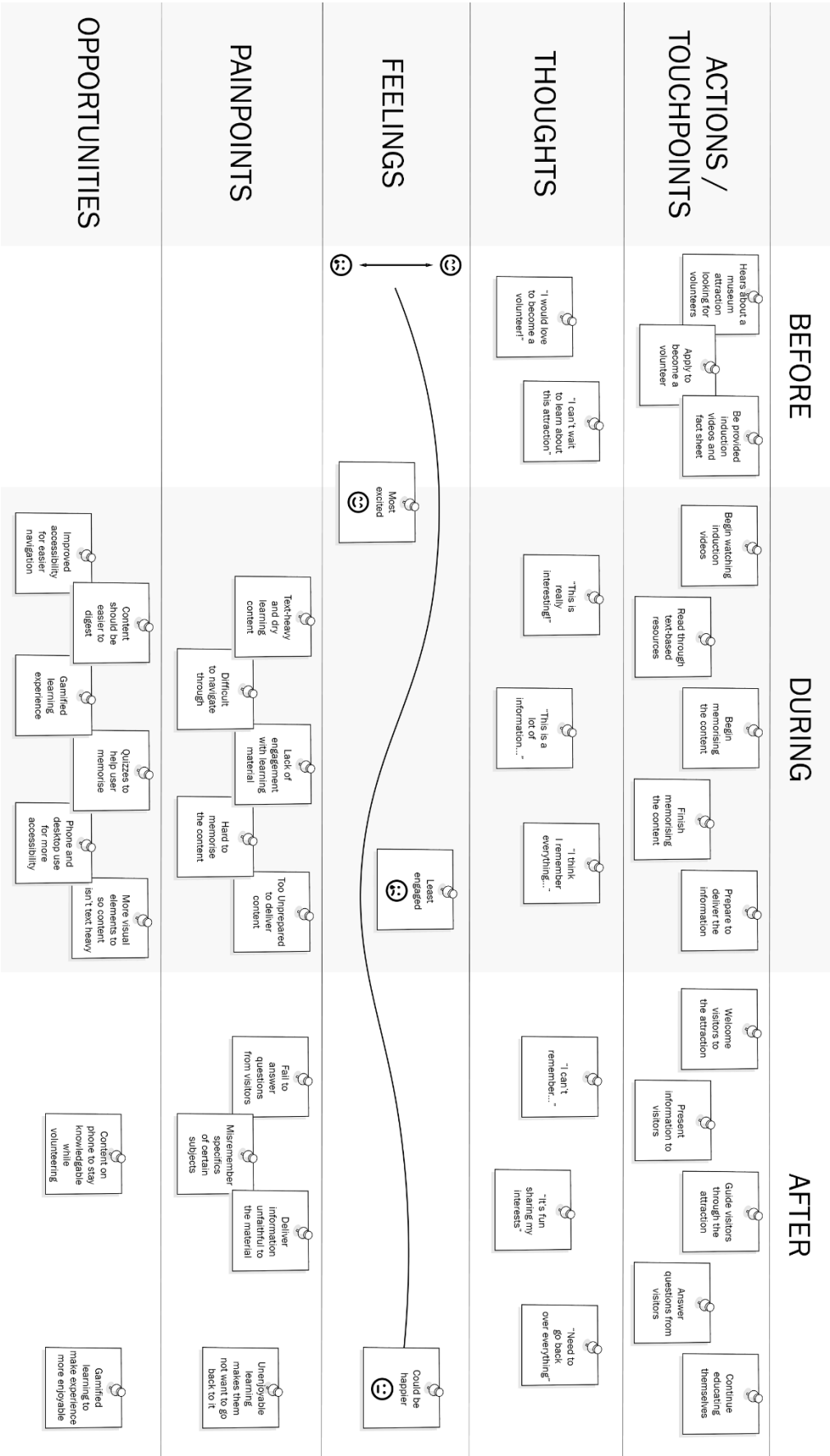
Preferred Learning Method



Reasoning for chosen learning method

Why did you choose this method?
Helps me stay engaged with my learning and makes it more enjoyable
Most interactive and let's use your prior knowledge you learnt in real time
I choose video as iam personally more of a visual learner, i like being able to apply knowledge from seeing other people do it. In my example, they showed videos of people working the register and what todo in certain scenarios. This was much easier to understand as appose to reading "if the customer does this do this".
It gets me involved and keeps me engaged with the topic, also increases retention meaning i will keep on using the system

Appendix E – Enlarged User Journey Map



Appendix F – Heuristic Evaluation

Heuristic	Score (0-4)	Issues	Recommendation
Visibility of system status	1	Some lack of clarity about what page user is on	More descriptive titles for pages
Match between system and the real world	1	Some icons aren't immediately obvious as to what they mean	Tutorial guide on system start up
User control and freedom	2	- Lack of exit / back buttons - Cannot correct a misinput in a quiz	- Add clearer exit and back buttons - Allow user to correct a misinput with a confirm button
Consistency and standards	0		
Error prevention	0		
Recognition rather than recall	0		
Flexibility and efficiency of use	2	Difficult to access learning information	- Include shortcuts to home page - Favourites section
Aesthetic and minimalist design	1	Some pages may have too much information	Cut down on text-heavy sections
Help users recognise, diagnose and recover from errors	0		
Help and documentation	2	Lack of guide to help user navigate system	Add guide on system start up

Overall, the system provides a good user experience, with all the core heuristics respected and upheld. It features an aesthetically pleasing interface that follows conventional design principles to offer an easy to navigate system. Appropriate icons have been used throughout that are commonly used in interfaces to provide the user with a familiar experience. The colours used are appropriate for the system and do not interrupt the interface design. Some elements can be improved, such as with the lack of exit and back buttons, or the complex navigation to find specific topics, or the lack of documentation, however these are minor setbacks. There are a few shortcomings, but the system provides a coherent and usable interface for good navigation and accessibility.