

# **User Testing Procedure**

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# 1. Introduction

A product as complicated and interactive as set out for production within the Masters project will require user testing at a variety of milestones as well as continual steering to ensure its content and functionality are suitable and enjoyable for the products proposed target audience of 11 - 16 year olds.

Without any user input during development it is possible that it may not be intuitive enough for the target audience and that it may stray from the core aims set out by the proposal for the product. As each minor stage of development comes to close, it is essential that the work produced is presented to a sample of the target audience to ensure it is usable and continues to fulfil the aims of the product. Something as important to the development process as the incorporation of user feedback should be well planned and conducted.

This unit, of which this document constitutes the sole submission, is the planning and execution of user testing, including details of the actual feedback as well as analysis and recommendations for future iterations of the devised testing model.

As well as embracing what experts recommend (detailed in the following section), there is need for a user testing plan specifically for the proposed product which falls into the web game ilk. Currently there are plenty of models for website usability tests and game Quality Assurance (QA) but very little on the middle ground of web game user testing. Through this research activity, existing user testing methodologies, both generic and for web and games platforms will be explored and implemented to a point where a specific testing model for web games that is robust and general enough to be reused for similar projects can be produced.

## What User Testing Is and Is Not

Although the majority of the user testing process is effectively common sense, there are some principles and practices that experts in the field have developed and utilised over the years including just what to test and what not to test. By heeding their advice, productive and useful data should result from any testing conducted on the products target audience.

Steve Krug, a usability consultant and author of 'Don't Make Me Think: A Common Sense Approach to Web Usability', emphasises that focus groups are not usability tests, yet when the user testing sample exercise was first planned it was considered as a focus group test with no distinction between testing the usability of a product and asking opinions for direction and steering. It is important to observe the differences between the two as both are required to keep the product desirable to its user base but there is also a need to make sure it works well and is intuitive.

Later in this document, the methodology for conducting these separate exercises will be discussed and a preferable action plan decided.

## **When to Test**

Krug is a strong believer of “testing always works” as in his experience, even with the most poorly planned and executed user testing exercises designers get a firsthand chance to see how someone that is not involved with the products development sets about using it. In his opinion any big problems will surface despite the quality of the exercise.

This reinforces the decision to dedicate a unit to the understanding and execution of user testing for the proposed product as well as determining how to handle the data and issues that arise as a result of the testing.

Another of Krug’s theories is that “testing one user early is better than testing 50 nearer its completion”. He argues those responsible for ensuring a product is usable may overcomplicate this process, in which case testing will not happen early or often enough. In his opinion, smaller tests early while there is time to reflect and modify the product are more valuable than a sophisticated test later into the products’ development.

Although this observation makes perfect sense when applied specifically to website development, as a new media project generalisation, and in practice, it is the type and scope of the product being tested that surely affects the accuracy of this ideal.

For example there is very little value in testing the minor changes to the games engine which comprise a great deal of this products day-to-day development. There has to be some semblance of a ‘complete’ product or product fragment before anything useful will come from usability testing.

The games industry manages its testing process in a far more structured way in comparison to the testing of a website, which is hardly surprising given that games feature a higher amount of interaction, budget and development time. John Hight and Jeannie Novak in their book “Game Project Management” state that the games industry uses key milestones to bind all areas of development:

- I. Regular Builds
- I. First Playable
- II. Alpha
- III. Beta
- IV. Release Candidate
- V. Gold Master
- VI. Localisation

This structure seems to include user testing that is suitable and inline with each development stage and also indicates that any 'serious user testing' with someone who is not part of the development team is conducted rather more sparingly in comparison to Krug's ideal of testing early and often for websites.

This can be attributed to user expectation of the product in question. A website, although interactive, is primarily used to convey information and users are more likely to invest time on a poorly functioning website to get the information they came for. However, a user will soon tire of game that functions incorrectly or unexpectedly as this type of interactive media is associated with leisure and recreation where frustrations are not tolerated.

Deciding when to test therefore is a matter of combining smaller more frequent testing for functionality with more structured and arranged testing events with members of the target audience at key stages in the products development. Despite the blending of ideal testing frequencies, this does concur with the proposed products development milestones which are described at the end of this section.

## **Cost and Scale**

Scale and cost are key issues when planning user testing, which must be useful and productive. If the process requires a great deal of time and money then the product's completion will become unrealistic.

Jakob Nielsen of the Nielsen Norman Group, a human-computer interaction expert and publisher of many papers on web and software usability, believes that testing need not require a huge budget. Nielsen's 1989 paper on "Usability Engineering at a Discount" was written entirely to dispel the myth that user testing should be a complicated and very expensive proposition only conducted by experts in a usability lab.

Prior to this, usability testing was seen as something that was performed in an observation room where two cameras were used to record what a user was doing and their reactions. A large number of testers were recruited so that the results were statistically significant and to justify the time and expense setting up the event.

Nielsen's paper concluded that the same results could be achieved without a lab and with a lot fewer people. An update to the paper that was published in 1994 titled "Guerrilla HCI: Using Discount Usability Engineering to Penetrate the Intimidation Barrier" demonstrated how a company could reduce their usability testing costs by half through conducting the test in-house and only hiring a professional if they could afford it.

Krug concluded that because of the time and cost of usability lab testing the process didn't happen very often. He suggests that user testing with friends

and family in a home environment potentially costs nothing at all and can be just as useful comparatively as testing in a fully kitted-out usability testing lab.

This research suggests that usability testing for the product(s) in question can be conducted with virtually no cost incurred and the data returned from the testing will be just as valid when helping shape the products future development. However it does seem that to compensate for less thorough testing the process needs to happen more frequently.

## **Two-Stage Testing**

Controlled and measured usability testing to be conducted on the products and product fragments produced for the MA project. As what is to be created is of a complex nature, development is split into two distinct stages as reflected by the divide of the product in the programmes' learning contract<sup>1</sup>.

Stage One Application Development<sup>2</sup> will include testing on the core game engine as well as the visual and interaction model. This is in conjunction with testing on the mobile platform and two completed subsidiary applications will ensure the underlying framework of the game engine is sound.

All proposed applications and systems for the final product(s) utilise the same game engine on all platforms and any issues with this need identifying and rectifying immediately. Stage 1 testing therefore will be aimed at these key systems and milestone products.

Stage 2 testing will be slightly different and involve participants throughout the development period associated with Final Application Development<sup>3</sup> constantly testing a piece of functionality when it becomes available, speeding up the development and feedback process as functionality becomes more complex and integrated. A more detailed discussion on this matter can be found in the Chapter 7 of this document.

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<sup>1</sup> Learning Contract can be found at: <http://www.frontier.lincoln.ac.uk/unitA/LearningContract.pdf>.

<sup>2</sup> Information can be found at: <http://www.frontier.lincoln.ac.uk/unitF/index.php>.

<sup>3</sup> Details will be online shortly at: <http://frontier.lincoln.ac.uk/development/maWork.php>.

## 2. Planning for Stage 1 Testing: Defining a new User Testing Model

With this being the first major set of testing, there are numerous important usability factors to be established and by conducting this test using a new testing model (which is detailed in the next section of this Chapter), the results should help identify potential issues on current development and analysis will categorise any issues that do arise using a sliding severity scale.

### Testing Objectives

Top of the agenda is the usability of the games engine when presented on the mobile device platform as finding out how this is received will determine what type of content is included on the platform in the final application development.

It has long been an issue when developing mobile applications that are conversions of a computer-based product that the controls will be unintuitive due to their layout in relation to how what they control behaves on-screen.

For the purpose of this testing exercise, two applications (one a mini-game) have been developed utilising various features of the core game engine to present the same experience on both the computer and mobile devices.

By observing and listening to the participants using the same product on different platforms, it should become clear how successfully the game engine transposes onto the mobile platform.

The website is a major component of the final product as it acts as central hub and the first point of contact for all users. Therefore it is just as important that potential users can navigate around the site and find what they're looking for (or instructed in terms of the testing exercise) as it is having the game engine fully tested. A number of scenarios will therefore be devised to ascertain the user-friendliness of the site.

Another area of concern (from development leading up to this point) is the process a user has to undergo to download, install and play the mobile versions of the application and mini-game.

Even from the developers point of view, the current solution for the development platform choice of Symbian<sup>1</sup> is far from elegant. It was hoped that this contentious process was to be improved since the products inception but aside from the creation of a mobile packager, end users are still faced with a process that is longwinded and inappropriate.

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<sup>1</sup> Symbian is an an open industry standard operating system for data enabled mobile phones.

There are other, slightly less significant functionality that require testing and for a full breakdown of what is to be tested, see the User Testing form<sup>1</sup>.

Due to the products out for testing during stage 1 being related to a product that has the potential to be used in schools as a class-based learning application, suitability for purpose will also need to be considered.

This should be covered by the demographic the proposed participants fall into. As the product that is intended to be used in education is not ready, testing for suitability as an educational tool will have to be postponed until stage 2 user testing.

## Testing Approach

To aid in making this testing productive, questions have been questions with scenarios (based on expectations outlined earlier in this Chapter) with relevant input from the Nielsen Norman Group's (NNg) paper: "230 Tips and Tricks for Better Usability Testing".

Listed below are a selection of the criteria to keep in mind while planning what and how to test as well as conducting the testing itself. After each item there follows a discussion of why this criteria is important and how it is intended to be incorporated in stage 1 of testing:

### Deciding on What and How to Test

*Make the first task incredibly simple*

This may seem the most obvious starting point but the NNg paper points out that "no matter how many times you tell a user you are not testing them, they still feel under pressure initially".

Nobody likes to look or feel stupid when presented with a question or task so by providing a user with a task that they will be able to do with no thought at all, should help put the user at ease.

Logically, the first test (or scenario) should be based around finding the website for the product but as it is not yet publicly visible, the site will be presented to the participant initially. Instead, the first task is going to be based around registering for an account which is something that all participants can build upon their previous knowledge of interacting with websites.

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<sup>1</sup> A copy of the user testing form can be found at: <http://www.frontier.lincoln.ac.uk/unitB/userTestingForm.pdf>.

### *Focus your test on core & critical tasks*

Critical tasks are what drives a product. Get these wrong and the users experience of the product is going to be tainted not matter how well smaller, subsidiary systems of functionality work.

Typical critical tasks for a website include navigation to core site information, the registration process or locating a control panel.

As there is substantial development for a first user test, focusing on just the core and critical tasks is going to occupy the majority of the testing in stage 1. The breadth of critical functionality to test can be found on the user testing form.

### *Write scenarios-not just tasks & give the test participant a goal but avoid describing the steps*

By testing scenarios, the task will be encapsulated into a realistic context which should motivate the participant and better represent how a user would use the function outside of the testing environment.

Scenarios are going to be utilised in stage 1 testing as a collection of individual tasks which span various interfaces and locations of the product but are related as a single underlying task such as:

‘Download & install the Mineral Miner mini-game (for mobile device).’

This could quite easily be broken into two tasks: downloading and installing. However, due to the requirement of a 3rd party piece of software to facilitate installing the mini-game onto the mobile device, there are a collection of related tasks which is realistic of a users expectations.

This particular scenario additionally tests how well the architecture of the information found on the products website is presented and is far more useful to study than step-by-step tasks and instructions which give the user clues on how to undertake the scenario.

## **Running the Test**

### *Sit with the test participants*

Sitting with a participant increases the likelihood of them engaging with the useful social aspect of “thinking aloud” so if the person conducting the test is in close proximity, a participant does not have talk more loudly than normal to be heard.

### *Ask “What are your expectations?”*

NNg’s paper recommends asking this question before test participants see the product but not until you have explained what the company (or in this case; the product) does.

As the paper specifically alludes to the product in question being a website, this recommendation is very useful as it is important that even before a user sees a homepage of a website for a company or product that they already have in mind how it should look and behave. By seeing how close you are to a users expectations goes some way towards identifying with them and forming a bond of trust which will hopefully keep the user on the site.

There is a caveat to this recommendation and that is to avoid asking this questing too early if the product is brand new and the user has not yet grasped what it does entirely.

Since the products are new with how they relate to each other as well as the underlying theme for the product due to its potential to be used as an education tool, asking about expectations of various parts of the products out for testing in stage 1 will be used sparingly and only if it is apparent the participant has used something similar before.

### *Ask for spontaneous reactions*

In order to gain the most unbiased results, it is going to be important to ask for first impressions of various aspects of the product(s).

By not giving the test participants time to sugarcoat a response through the written feedback form accompanying the testing, then any potential biasing should be alleviated or at least reduced.

To take advantage of any spontaneous reactions, notes of what the participant is doing and any noticeable reactions including attitude, will be documented at the time.

### *Be diplomatic when participants blame themselves & wait a few moments before you help*

Test participants are already under pressure to perform to the best of their abilities from the start of testing. Therefore it is only common courtesy to reassure users that there are no right or wrong ways to complete the task or scenario.

Considering the ages of the proposed participants for stage 1 testing, it is worth extending this reassurance to include statements such as “you’re not making a mistake, you’re helping shape how the [product feature in question] is going to work in the future” and “what you’re trying to do is perfectly fine”.

With the products in question being new in their approach and theme, it is worth refraining from helping for a few moments if a participant becomes stuck with a task as if the facilitator has to constantly step in, the exercise becomes more akin to a product demonstration and very little is learned from a usability standpoint.

## **Debriefing**

*Return to key problems that the test participant encountered*

NNG recommend immediate reflection of any problems encountered that the facilitator deems to be key to the products success and this is going to be handled by asking opinions on how to make the process or features easier to use or find before the focus group section of the event starts.

*Ensure the test participants leave the test feeling no worse than when they arrived*

As the products are intended to be used in the target audience’s leisure time and are supposed to be relaxing and enjoyable to operate, there are no foreseen reasons why a participant is likely to feel negative about the testing experience.

To aid with making a participant feel like they are valued, a reward will be presented to each of them. The notion of a reward is optional, as participants can often feel gratified from the completion of the testing experience itself, but Krug recommends offering a small cash stipend which should help relatively align the proposed testing with how large companies reward testers for their time.

## **Reporting Recommendations**

*Classify the severity of the problems*

By classifying problems in order of how severe they are it will be easier to identify which areas require attention first.

A scale should be employed with a deadline set for each problem to be addressed by.

## **Method**

Considering only one facilitator will be conducting the testing exercise, sitting with each participant for the full duration of the test will not be possible. Therefore movement between the participants will be required to observe and record how each of them tackles the most important scenarios to gain comparisons.

One of the key points considered when planning the testing event was the importance to differentiate user testing from a focus group and ideally, these should be conducted at two separate events.

However, time and availability of the participants is an issue and the project as a whole needs to steering to check it is heading in the right direction and correct its course if it is not. Asking a sample of the target audience is one way to approach this and with the user testing event already scheduled, it makes sense to combine the two aspects into a single event.

To differentiate the responses from the combined event, a clear indication that user testing is over and focus group is starting will need to be implied. This will be achieved by switching off all equipment, collecting the user testing forms and sitting the participants together on the settee in an informal interview situation where a number of pre-prepared questions will be asked and the answers noted down.

As there is no testing lab setup with observers and cameras everything will need to be written down. Some of the participants have declined the use of audio or video recording so this must be respected. They have however, agreed to be photographed while conducting the tests.

In order to effectively collect the data after the event, and with the facilitator only able to see one participant at a time, a paper-based form has been produced<sup>1</sup>. This will ensure a consistent set of data is recorded permanently for subsequent analysis. Participants have been informed of this and have also agreed this is acceptable.

## **Testing Event**

### **Location**

On Saturday 9th January at 2pm, 3 potential users from the products target audience are set to meet at a location universally convenient.

To help make the participants feel comfortable the location chosen is a family living room and this serves a secondary purpose of being representative of

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<sup>1</sup> A copy of the user testing form can be found at: <http://www.frontier.lincoln.ac.uk/unitB/userTestingForm.pdf>.

users interacting with the products in their “natural habitat” as recommended by the NNG’s paper.

There have been enquires made to the availability of the location, the type of equipment there already and the available internet connection.

### **Participants**

Out of the three participants selected, two are female, one is male and all are aged between 11-16.

Participants were selected based on their appropriateness to the products key demographic, their availability for this testing event as well as future events if required and their known interest in online behaviour and usage trends.

### **Equipment**

Already at the location are 2 desktop PC’s, an iMac, 2 laptops and unrestricted wireless access to the internet.

Additional equipment required to conduct the testing effectively are a laptop with Nokia Ovi software installed on it (to transfer the downloaded applications to a Nokia mobile device), a selection of Flash Lite 2.0+ capable Nokia mobile devices and all required cables.

### **Testing Materials**

As well as the required equipment to display the products and run the testing, there is a copy of the user testing form (stage 1) for each of the user to complete and a notebook for the facilitator to note down reactions and observations of each participant using the product(s).

### **Reward**

Although the testing participants in this stage of product testing would be happy to do this for free, a small reward is going to be presented to each of them to demonstrate the importance of their input inline with the Nielsen tip of ensuring the user feels no worse leaving the testing than when they arrived.

### 3. Feedback from Stage 1 Testing

Shortly after the user testing event, the results obtained from the completed user testing forms and notes from the facilitator were read through and analysed, the result of which is outlined in this section question-by-question.

Additionally, this section was written after the user testing from the male participant was received by post shortly after the actual testing event thus ensuring there was increased representation of the target audience.

Appendix A documents the testing event. The form used during the event and scanned completed forms can be found on the website for this award<sup>1</sup>.

#### Scenarios relating to the website and web-based products

*Scenario: Register with Frontier (with the website presented to them on the home page)*

Although registration itself was found to be very straight forward and all participants knew what registering was, why it was necessary and what is expected; the initial task of finding where to register caused a slight delay at first.

All participants had to think about where to go to register. The two participants who were observed for example, appeared to start by scanning the home page for a register button but, after not finding it, then began to look at the tabs (primary navigation).

Both clicked the 'Get Involved!' tab first and as the first option on that page was 'Register with Frontier' (secondary navigation), the remainder of the task was completed successfully.

It was revealed at a slightly later point in testing that one participant thought 'Get Involved!' sounded like you were been asked to pay money to take part.

*Scenario: Create a Character*

All participants did use the link on the page presented after their registration from the previous scenario was complete. This took the user back to the page where the secondary navigation featured 'Create your character' as an option.

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<sup>1</sup> Scanned copies of the completed user testing forms can be found at: <http://www.frontier.lincoln.ac.uk/unitB/completedUserTestingForms.pdf>.

Comments for using the character creator were mostly positive and it proved easy to use. At no point did the participants ask for help and instinctively knew what to do when presented with a login form to get started.

Whilst on the subject of the login form, one user did have internet issues when using this product (beyond the products control) and as a result had to log in three times to complete the task.

Another participant's comments about not having enough choice of character components was answered on the spot. She was happy with the answer.

It was noted that both observed participants did click the 'Next' button without saving their character first (there are two screens with two different types of clothing to customise).

*Scenario: Play the Mineral mini-game & complete at least the first stage*

All participants had trouble initially finding the game without thinking. The two participants observed actually clicked 'The Game' tab from the primary navigation. It is assumed the unobserved participant did the same as his comments imply that it was not where he was expecting to find it.

Participants seemed to enjoy playing the Mineral Miner mini-game and found it straight forward as they quickly related the game to its original form of Minesweeper. The observed participants played beyond the first stage. It is assumed that the unobserved participant found it equally enjoyable.

*Scenario: Find your score*

This scenario was abandoned in the event because of time constraints.

The unobserved participant commented that he couldn't find his score which can be attributed to the fact his score will not have been saved unless he was playing after logging in which he was not instructed to do so.

## **Reactions and opinions on the website**

*Question: What do you think the main purpose of the site is?*

It appears that different participants have different exceptions and ideas about the sites existence. This seems to be down to the age and gender of the participant.

The youngest participant focused on what she could do on the site currently and what she enjoyed the most whereas the oldest participant read the front page and reported on the bigger picture of site.

The male participant's comment was very blunt but at least was representative of the overall goal of the site.

*Question: Who do you think the site is aimed at?*

All participants commented that the website is for children at high school which demonstrates the site is fit for purpose. One such reason for this affinity could be related to the visual style of the content which is similar to that of the popular online visual chat application: Habbo Hotel<sup>1</sup>. More than one comparison from the observed participants was made between the two products.

*Question: Was registration straight forward?*

As discussed in the answer to the first scenario, participants are united when they comment about how easy it is to register when you get there. Finding the registration page however, does appear to have caused issues to all participants.

*Question: Is the site easy to use?*

Ignoring all other comments on the various sections of the site that behaved unexpectedly, the overall consensus was the site was simple to use and navigate which can be attributed to the fact there is only limited content available at the time of the test.

One participant even commented on the positive effect that not having masses of content has on navigation.

As the site develops and expands, a further test will have to be conducted to see if it remains simple to use.

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<sup>1</sup> Habbo Hotel (<http://www.habbohotel.co.uk>) was identified as one of the most popular visual chat applications for teenagers in the competitive analysis unit of this award, details for which can be found here: <http://www.frontier.lincoln.ac.uk/unitD/index.php>.

*Question: Would this site be something you would use and why?*

Two participants commented that the site (and by extension: the product) would indeed be something they would use upon its completion suggesting the site in its current state is lacking content.

All participants said the site and product would be something they would like with one specifically expressing their pleasure at the choice of theme.

*Question: Do you think the name of the site reflects what the site is? Would you suggest another name?*

This is an ambiguous question and was intended to measure how relative the title (Frontier) for the product (and by extension: the website) was in the eyes of the target audience.

Although participants didn't really understand the meaning of the title in context of the final product straight away, it became apparent when the focus group session was conducted that the name and its meaning did start to make sense to the participants.

*Question: What did you like about the site?*

Colours chosen to present the site were a success with all participants positively commenting on them and, as before with the first question, the younger participant chose to comment on what she could do on the site as a positive.

*Question: What has the site done wrong?*

A common theme here is the [body] text being too small and unclear and during observation, it was noted that a scroll bar did appear on the participants own laptop which is not part of the sites design.

It is surprising that only one participant chose here to comment here on the navigation issues relating to finding the mini-game that all participants encountered. Even more surprising was that it was the youngest participant who made this comment suggesting that poor site navigation is something a younger users remembers and is likely to be put off by.

There was a comment made about the issues a participant had with the internet connection not working but this has been addressed earlier.

*Question: What would you do to improve this site?*

An obvious, but expected result, was that most participants would like to see more content. This is encouraging as it suggests they are happy with what there now and would like more of the same. It also suggests that the underlying theme is pleasing to all participants.

There is a comment relating to improving the graphics which needed some elaboration. The participant in question felt the mini-game looked “too blocky” but it was explained that the final web version of that game would be smaller and fit into a frame on the website. She was happy with that answer.

Another expected comment was the issue with navigation to registration and mini-games.

*General feedback & comments:*

Participants seem to like the site and as long as the issues with navigation and content are addressed, then it seems they would seriously consider using it in the future which is very reassuring.

## **Scenarios relating to the mobile device products**

*Scenario: Download & install the Character Creation application*

As the unobserved user was not able to complete the following scenarios due to not having a suitable mobile device, it is only the experience that the two female participants had that is discussed here.

Both found it easy to find where to start the task, but even with their above average knowledge of computers, they struggled with getting the downloaded application onto the mobile phone.

When observed, both seem to fumble through and rely on clicking options in dialog boxes based on previous experience with downloading from the internet.

Another confusing issue for this procedure was when the mobile device was first connected to the computer, a menu was presented on the device with a number of options for various modes the phone can communicate with the computer. Both participants selected the first (default) option, which incidentally is the correct option for this scenario, so were able to carry on although there appears to be no understanding as to why the participant selected the option they did other than because it was already highlighted.

Despite this, and a technical difficulty with the phone not communicating to the laptop with one of the participants, both managed to eventually install it without help.

Interestingly, neither of them once thought about returning to the website for help suggesting that guidance and help is not something they would turn to the internet for and would rather rely on their own experimentation when faced with technology challenges.

Once the game was installed on the mobile device, both participants then had trouble finding the installed application using the Symbian interface on the Nokia N95. One user tried to find it in the 'Games' folder while the other went to the 'Download' folder, both of which are perfectly logical places to start looking.

Eventually they found it with a small amount of intervention as it needed to be explained that the icon for the development version they downloaded does not match the identity of the brand for the product.

#### *Scenario: Change your characters appearance*

Having already performed a similar task from testing the web version of this application there were no further issues although it was already becoming apparent from a comment on the form and from observation that both participants preferred the version that ran on the computer.

There was a comment pertaining to the "strength of your internet connection" which was due to the participants misunderstanding of the obtrusive 'connection' screen that Flash Lite displays when an external connection is required on a Symbian device.

#### *Scenario: Change your characters outdoor clothing*

There were no issues here and both users clicked the 'Save' button as opposed to just clicking 'Next' as they did previously.

It was observed that the explanation for the two types of clothing (a paragraph of text) was not ready by either participant.

#### *Scenario: Download & install the Mineral Miner mini-game*

Both participants completed this successfully but only due to the difficult learning curve they experienced with the Character Creator (see above).

*Scenario: Play the game and try to complete it*

There were no major issues with playing the game on the mobile device although neither participant managed to complete it.

One participant comments on the easy controls (in the game) and the fact it was easy to get into and start playing. The other participant comments specifically on the noticeable increasing difficulty as the game progresses from stage to stage.

It was observed that despite their claims about simple controls, they are referring directly to the game engine and not to the controls on the mobile device used to interface with the game as this was noted to cause frustration on more than one occasion with both participants.

*Scenario: Play the game using your character*

Again, there was easy to achieve and both participants knew where to go to achieve this. One even commented positively on the personal touch of using your character to play the game.

*Scenario: Find your high score*

As with the testing on the website, this task was dropped due to time constraints.

## **Reactions and opinions on the mobile device products**

*Question: Was downloading and installing the application/game straight forward?*

See first scenario relating to mobile device products.

*Question: Where the applications/games easy to find after you installed them & use?*

See first scenario relating to mobile device products.

## Reactions and opinions to the Mineral Miner mini-game (multi-platform)

*Question: Did you know what to do when first playing the game?*

One of the participants says she knew what to do straight away, but, this isn't quite true as her answer to the next question suggests. It took a few plays to establish its similarity to the game upon which it is based (Minesweeper), but once the link had been established, she played the game very well.

The other participant's response is more honest and can be attributed to the same factors of linking the interaction and aims to an existing popular game mechanic.

She did make a comment that the instructions [on the loading screen] are quite long and disappear before you have chance to read them. She suggests keeping them on screen with a 'Next' button displayed when the game has loaded.

*Question: Was the game straight forward and easy to use?*

Aside from the issue dealt with above, the overall consensus appears positive and there was even a comment on how simple the controls of the game were.

*Question: Was the game too difficult or easy?*

Both female participants suggest that the games pacing is about right on the condition the user knows what they are doing initially. By contrast the male participant thought the game was too difficult because he failed to complete it.

This comment is hard to analyse as there is no indication of how close to the end of the game he got.

*Question: Would these applications be something that would use and why?*

All participants alluded to the fact that they would play them in their leisure time and one went as far as to say he would play it in his break at school.

*Question: What did you like about the applications/games?*

It seems the underlying aspect is that users can access their character through everything they experienced during testing with one user commenting on the consistency found throughout the different products.

*Question: What have the applications/games done wrong?*

Although there are criticisms noted, it is hardly surprising that they both relate to the mobile device products and processes.

These issues have been considered in previous questions/scenarios which suggests all participants had a mostly positive experience.

*Question: What would you do to improve the applications/games?*

All three participants came up with four very valid suggestions which have been addressed previous but can be summed up as:

- Icon for installed applications/game son mobile device
- Making registration more visible on the website
- Controls on the mobile device are not intuitive considering game content
- Differentiate visuals on the Mineral Miner mini-game

*Question: Did you prefer to use the applications & games on the mobile device or the website and why?*

In an unanimous vote, the website won and it is no surprise considering the unintuitive link between the visual perspective of the theme and the layout of the buttons on the mobile device.

Once participant commented that they are more familiar with computers than mobile phones suggesting not all potential end users are going to have access to or experience with mobile devices.

*General feedback & comments:*

All users suggested that the products they have tested and seen are good and are of a high standard. One user commented specifically on looking forward to seeing the final product based on his experience so far.

## 4. Feedback from Stage 1 Focus Group

Although testing took over two and a half hours, there was just enough time to obtain thoughts and opinions on the project as a whole, the theme, the proposed final products; their interactions and the potential platforms on which they would be distributed.

This section of the event took the form of mini discussions which would be started with a question or scenario. The answers were noted down and are presented here as a transcript.

Before any questions were asked and responses noted, there was a five minute lecture given to the participants regarding what the product was, why it should exist and a selection of the proposed features and interactions.

Noted responses include positive body language demonstrating approval and identification with the products underlying concept and goals, questions asked about features and interaction models (discussed below) and very positive comments received when asked if this product sounded fine in principle.

*Question: Is the products overall task of exploring and colonising something you find interesting?*

Participant 1: If this is supposed to help teach things like managing money and being good in society then it could be used in my PSHE (Personal Social Health Economic education) lesson especially if it involves teamwork.

Participant 2: This is something that I personally would be interested in playing because it is like a game I used to play at primary school but that was only one person at a time. If I could play this with my friends it would be more fun.

Although both participants provided positive feedback on the underlying aims of the product, more opinion will have to be sourced in the very near future to ensure a larger cross-section of the proposed target audience are also as positive.

Opinions from male users is vital as so far, despite a questionnaire distributed around a class of 11 year old mixed gender students 5 years ago<sup>1</sup>, there is very little male input regarding the direction of the product.

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<sup>1</sup> See <http://www.frontier.lincoln.ac.uk/unitD/userOpinions.php>.

*Question: What are your thoughts on the products theme (Space/Mars)?*

Participant 1: I have always liked space and use my telescope at home often. I think most people my age would like it too because there is more you can do with space and Mars than in something like Habbo<sup>1</sup>. There are some people who may not like all the space things but it sounds like there is a lot to do that doesn't involve space and Mars which should keep them happy.

Participant 2: Space is something I am interested in so I would like to play this game when it is done. I think my friends would like it too because we have just done some work on space in science and my friends enjoyed that.

As with the first question, it is clear that the two participants are quite fond of the theme but are not a true representation of the entire target audience. However, the remark about users who may not be as interested in space themed products but would still get something out of it is very positive and something that has been considered since the products initial development.

*Question: Do you think the combination of the products overall task and theme are something users your age would like and understand?*

This question became redundant and was not asked due to the answer already provided from the previous question.

*Question: What are your thoughts on the products visual style and perspective?*

Participant 1: It is just like Habbo and that works well. There isn't as much detail as in Habbo but the fact you can do more [in the proposed product] means that people will still use it and maybe stop comparing the two.

I like it because I like Habbo and think the size of the characters is better because they look cute and less like real people.

Participant 2: I like the look and colours. It is like Habbo but it's in space and on Mars so is more exciting.

Despite the second comparison to Habbo Hotel, which is going to be impossible to avoid considering Habbo's popularity and age, the remarks are again very positive with the theme seeming to separate the two and offer users more exciting things to do.

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<sup>1</sup> Habbo refers to Habbo Hotel which is the most popular visual chat application in the world: <http://www.habbohotel.co.uk>.

*Question: Is being able to play parts of the product and things like mini-games and character customisation applications on your mobile phone a good thing?*

Participant 1: Yes because sometimes you can't get on your PC although I have laptop now so this isn't such a big deal but I think people would like to play the games when they are away from the house.

It would need to be made easier to do though, installing things on my iPod touch from the App Store is very easy and they connect to the internet easier.

Participant 2: My phone isn't good enough to run things like this so I think it is a good idea for people with better phones. If I had a better phone and it didn't use much credit then it is something I would like to use.

Already there are issues with accessibility, availability and technical barriers that potentially could put target audience members off using the mobile versions of the product.

An unplanned, followup question was asked:

*Rebuttal Question: Has the experience today put you off wanting to use your mobile for future games and applications?*

Participant 1: No because you can play these when your away from the house and need something to do.

Participant 2: No but I would need a better phone.

It seems that despite the concerns and issues, using certain types of content on a mobile device is still desirable but the conditions and availability need to be considered in future development.

*Question: What were your thoughts on the Mineral Miner mini-game you played today and the planned mini-games that are coming soon?*

Participant 1: The game I played today was good and very addictive. There does need to be more instructions for how to play it because it took a while to work out what the numbers meant.

I like the sound of the farming game because it sounds like Harvest Moon<sup>1</sup> which is a game I used to play and liked a lot because it made you feel good

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<sup>1</sup> Harvest Moon is the product line title for the family friendly multi-platform farming games from Natsume: [http://www.natsume.com/current\\_game/games/harvest\\_moon\\_tot/index.html](http://www.natsume.com/current_game/games/harvest_moon_tot/index.html).

when you harvested crops you had to look after for a whole year [in game time].

Participant 2: I enjoyed playing the game but it was too hard to finish. It would be nice if it was different when you changed levels.

The farming game sounds fun. Growing things to eat is good for kids to know about because we're learning about it in school and most of my friends play Farmville<sup>1</sup> which sounds the same.

There is a real need to improve the instructions to the Mineral Miner game but the overall consensus is that the game content and interaction is enjoyable and addictive. By making the high scoring and reward system more robust and visible, this willingness to participate should become even stronger.

The comment 'making it different' refers to the visual differentiation between stages which is something else to consider when finalising the game.

Initial feedback from the proposed planting and harvesting mini-game is positive which can be attributed to the popularity of similar games but also to the fact these games are constructive and give a real sense of achievement when hard work is rewarded.

*Question: Do you think users your age would prefer to pay real money for items such as clothing or upgrades or work for them in the product by spending time there?*

Participant 1: I think both because there are people on Habbo who have rich parents and get all the best stuff but it is a good idea to make people work for it or buy it if they are lazy.

Participant 2: It should be everyone has to work for it because it's not fair if someone can get all the good things before everyone else because they are rich.

There is a clear identification and resentment towards fellow users being able to purchase game content through micro-transactions and both users suggest that all users should be equal.

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<sup>1</sup> Farmville is a social interactive farming game designed to be played and connected through Facebook: <http://www.farmville.com>.

*Question: Considering there could be vast distances in the products game world, what are your thoughts for traveling to see friends and other users in other parts of the game world?*

Participant 1: It would be nice to be able to walk to see the planet but maybe something like a tele-porter like in Habbo but instead of coming out in the same room you get to pick which base you end up in. Maybe you could pay to use it?

Participant 2: Maybe have your own moon buggy that moves faster than walking that you can buy and make better with money.

This particular question was asked because the issue of transportation is one of great debate within the final product and ideas and expectations from potential users is valuable at this stage of the products development.

There is the suggestion that both users would considering combining in-game currency with another, faster form of transportation but always having the “back up” option of being able to walk anywhere. This is again, something that requires additional thought but currently there is a similar transportation model planned which suggests that, if developed, it would meet with potential users expectations.

*Question: Is there anything you could think of that should be included in the proposed product or do you have any questions?*

Participant 1: (Question) Do you have to look after your character?

Participant 2: Could you design your own clothes like on Animal Crossing<sup>1</sup> because that way people could be creative and not have to spend money on buying clothes?

Participant 1 was happy with the answer given and confirmed that looking after your character ties-in well with health and nutrition education at school and having nothing drastic happen to a user if their character fainted was a good idea due to the fact that sometimes, you cannot help being called away from the computer/game.

Participant 2's suggestion of being able to create your own clothing is an excellent idea and one that should reinforce the feeling that they belong to a society and are able to express individualisation by being creative.

Implementing this suggestion requires a great deal of planning but it will be documented as a feature to include by the time the final design document is produced.

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<sup>1</sup> Animal Crossing is the product line title for the family friendly social interaction game from Nintendo: <http://www.animalcrossing.com>.

## 5. Recommendations for Stage 2 Testing

Despite limited participation the user testing outcomes and the testing model employed both proved successful.

By combining a mixture of web and game design testing practices and typical scenarios, a robust interactive web application model has been created which can be scaled up to include testing on a more advanced level of web games. Details of how this will be achieved can be found in the next Chapter.

As for the products that were out for testing; issues overlooked during the first stage of development that have now been brought to light as well as suggestions on how to improve functionality and usability made by the participants.

After careful analysis of the issues they were divided initially into two main categories: major and minor similar to those suggested by Nielsen in his paper on usability testing tips.

Major issues are to be address without fail due to their severity identified from the user testing exercise and indicate massive usability issues that would be harmful to the products reputation, whereas minor issues are issues that would make the experience more consistent and enjoyable for the user but will not directly harm their experience if not addressed straight away. Major issues were then divided into two further categories of: immediate and future development.

Immediate issues should be addressed before any work is undertaken on the next stage of the products development and as soon as possible given that potential users may start visiting the site and products.

Issues categorised as future development still need urgent attention, but can wait a little further into the next stage of development, potentially due to the fact they are not fully realised yet, or have even been started, given development has only just finished its first stage.

One final categorisation is the designation of the product and platform the issue relates to and is indicated as either:

- Issues relating to the product website (w)
- Issues with the mobile platform (m)
- Issues with a product on the computer (c)

Of course, there may be an issue that spans more than a single product or platform.

At the end of this Chapter there are also recommendations for future direction of the products based on the analysis of the focus group test held as part of the user testing event.

## Major Issues

### Immediate

(w) Identify and link to registration on home page

It appears that 'Get Involved!' is not what the target audience is expecting. It is certainly not the first place users would think to go and register with the site to start their experience.

By adding a 'register' link to the front page, users should identify this is a first port of call and can then be instructed what to do next.

Implementation deadline: 7th February 2010

(w) Rethink the 'Get Involved!' initiative

One of the test participants commented that 'Get Involved!' sounds like you need to pay to use the product. This is worrying as the initiative title is deeply embedded into the website and product development.

Rather than complete rename or structure the initiative, it may be prudent to implement the above resolution and see what happens with a small, focused, test on it when the final product information page has been updated during mid-March.

Implementation deadline: 14th February 2010

Testing soon after 14th March 2010

(w) Make the body font larger and check for scroll bars across platforms/browsers

Although this seems like a simple task, implementing it is going to require a full site redesign as the content holders are static and can only handle a certain amount of content on each page.

It is unclear at this time to what extent the site will have to be restructured, there is however, a definite need for it to happen. Work will commence immediately but this task shall have no deadline as working on a live site requires it to be changed and checked constantly and over time.

Implementation deadline: Ongoing

(w) Make mini-games more visible and distinct to the final product

As the participants in the user testing exercise demonstrated, there is no clear distinction between mini-games provided to entice users and start their involvement early and users who want to find out more about the final product.

The 'The Game' tab is ambiguous as the product is not strictly a game and to avoid confusion, it should be relabelled more suitably.

Mini-games will become more visible when the rethink of the 'Get Involved!' initiative is completed.

Implementation deadline: 28th February 2010

(w) (m) (c) Increase the amount of mini-games and include more character component choices

In a bid to entice users, there will need to be an increase in 'Get Involved!' content.

This was planned for stage 1 of development so it is important that the proposed features, applications and mini-games are created and uploaded to the website in a timely manor.

Implementation deadline: 28th February 2010

(w) Update 'The Game' (or whatever it becomes) tab and populate its pages with content and development screen grabs of final product

By the time this resolution is due, there will be sufficient work completed on the 'Get Involved!' content and final product development to provide details and appropriate screen grabs.

Implementation deadline: 14th March 2010

## Future Development

(w) (m) Improve the mobile to computer process

Without question, this particular issue ranked highest amongst the problems encountered throughout the user testing event.

There is a reason why this issue is categorised under 'Future development' and that is down to the fact that there is nothing can be done to improve the process of getting content from the website to a users mobile device using the current target platform.

It was hoped during the projects inception that the process would become more streamlined and less obtrusive as Flash Lite matured as a distribution platform but 5 years on and the process still involves a great deal of user input still required to install and use a mobile product.

Ongoing research will have to be undertaken and a recommendation made on the direction development on the mobile platform should take for future products.

Discussion and recommendations will be presented on the products online development log.

(m) Ensure no product or feature is available specifically on the mobile device platform

There were plans to feature 'mobile only' products to encourage users to participate using their mobile devices but as one of the participants pointed out during user testing: not all users will have a device capable of running the game or be compatible with the redistribution platform or have the money to even use them in the first instance.

It was also predicted, during the products inspection (over 5 years ago), that data charges will become reasonable and built into contracts including pay as you go services but it is still the case that data remains expensive for PAYG customers of which, the majority of the products target audience are attached to.

In light of these limitations, there will be no product developed specifically for the mobile device.

### (w) (m) (c) Make high scores more meaningful and accessible

High scores admittedly were a bit of an afterthought, therefore it is unsurprising they are not implemented into the products and website in the most effective way.

Ideas to improve the visibility and overall implementation include building up a user profile for each game they play and factor in awards obtained by completing games, challenges and by being ranked highly.

Although this particular issue could perhaps be reclassified as minor; special attention to the planning of future products for both 'Get Involved!' and the final product itself, should be given to help make high scores and achievements an important feature where appropriate.

## Minor Issues

### (m) Reduce effort required to log in on mobile applications/mini-games

Both users ran into difficulty using the mobile applications and were forced to reenter their log in details. On a computer-based application this is not really an issue, especially considering usernames can be quite short, but on a mobile device, typing text requires a considerable amount of effort.

The solution is simple: add a 'remember me?' tick box to the login forms of applications & mini-games on both the mobile and computer-based platforms.

Implementing this feature will require the use of shared objects in Flash and when all required aspects of this technology are understood, it shall be applied to all applications and mini-games.

### (m) (c) Prevent the situation of being able skip without saving any changes made in Character Creator application

While observing the usability testing participants customising their characters appearance, the situation arose where changes made on the first (of two) screen was not saved as the user progressed to the second.

This potentially would leave users confused as to why their recent changes were not saved which could see users losing faith in the application and the products as a whole.

Currently, the difference between the two screens is the first allows a user to customise their avatars clothing while on Earth or while inside on Mars and

the second screen customises what a users avatar would wear outside or while at work.

By making the 'Next' button only available after 'Save' has been clicked would solve this problem but raises the issue of slowing a user down if they simply want to customise their appearance on the second screen.

Therefore, the logical solution would allow the user to choose which occasion clothing they wish to customise and label the buttons more appropriately.

#### (m) (c) Improve instructions for Mineral Miner mini-game

Despite the fact users observed got to grips with the Mineral Miner mini-game quite quickly once they had established the similarities to Minesweeper, both commented on the fact the game required instructions and the ones featured on the loading screen were not displayed for long enough.

One user suggested including a 'next' or 'ready' button on the instruction screen. This would be very simple to implement and will be done so immediately but another idea was generated while the discussion of this solution was taking place.

By creating a rolling demo, the instructions will be presented in a far more contextual way ensuring that all capabilities are catered for and more users can start enjoying the mini-game sooner. This will be implemented slowly when time is available.

#### (m) (c) Make transition between stages more apparent in Mineral Miner mini-game

Although this small issue was raised during the usability testing, it is an issue identified towards the end of the mini-games development and that is: other than the stage and level number incrementing when a stage was completed there were no other clues and this made the game a little flat.

The proposed solution was always to have some kind of visual differentiation in the game to act as a mini reward for continued perseverance at the game and this would be achieved by changing the scenery or location of the level and providing visual treats such as rocks or mineral formations.

## Positives to Continue across to Future Development

(w) The colours of the website

One of the consistent praises of the products available for the usability testing was the consistency and choice of colours displayed on the website and the products as a whole.

(w) (m) (c) Current & proposed content

Even without promoting for opinions on this matter, two of the three participants commented on how they liked what was available now and how much they were looking forward to the final product.

This is deeply encouraging as it suggests the target audience will relate to the products on all levels and consider them educational as well as entertaining.

(m) (c) Ability to access character

It appears that users enjoy being able to use their character in the interactive applications and mini-games as it makes the experience more personal.

By ensuring this ability in appropriate future developments, keeping the target audience happy will be easier to achieve.

## Direction

Considering the focus and steering aspect of the event might have seemed a little tacked-on, the participants appeared to enjoy having their opinions noted and, on a whole, the responses were plentiful and positive.

Out of all the feedback, the most positive best news of all is that the products direction, theme and aims are what the target audience want, or are willing to accept. This is immensely gratifying to hear although there is no risk of getting carried away considering only a small cross-section of the potential target audience have taken part in such an activity.

More work will have to be done and more potential users involved during the next stage of development to ensure the product is still what users expect and want to use.

After conducting the usability testing event, involving potential users in future development now appears a far less daunting task than before the event was conducted.

## **6. Conclusions**

As this document covers multiple aspects there are a number of conclusions to be made. Starting with the Testing model, which is the primary subject for discussion in this document, the following sections in this Chapter detail everything learned and concluded from the user testing exercise and the focus group research conducted.

### **Testing Model**

The initial task for this unit was to propose a testing model that was appropriate for web games projects and that was suitable to test the current products produced for this award. Any model employed must be flexible enough to be scaled up to test proposed future products.

As the model was informed by existing testing models from two separate disciplines, experts advice on the frequency and content out for testing, as well as general methodologies and practices were taken into consideration and the model designed.

The following list describes the model's outline:

- I. Differentiation between user testing and focus groups
- II. Frequency of testing
- III. Types of question to ask
- IV. Methods of obtaining feedback
- V. Interpretation of results
- VI. Recommendations

After employing this model and developing its content for use with stage 1 testing, various issues and improvements became apparent and suggestions for future improvement, approach and implementation can be found the next Chapter of this document.

### **User Testing Event**

Although small in scale, the user testing event produced useful feedback which has helped identify areas of concern and by having direct access to the users who come across the issues, negotiating a solution becomes a team effort and instantaneous.

Having users involved with development was potentially off-putting despite the knowledge that the end product would inevitably benefit from their involvement.

In actuality, having them involved was a great experience as their minds work differently and they have expectations of how things should be. They identified issues that were taken for granted during development and as a byproduct, the amount of positive feedback was encouraging.

As a result of this, there is going to be considerably more involvement from users representative of the target audience during stage 2 of development<sup>1</sup>. Considering there will be more than a single product been worked on at a time, testing is likely to be very informal with a minimal amount of scenarios or functionality to test at any give time.

This method of testing small and often is something was identified by Krug as beneficial on small projects and once a routine is established, documenting<sup>2</sup> it will become part of the development process as will implementing changes as and when they occur or are identified.

## **Project Direction**

Considering the main bulk of the user testing event conducted for this document was based on feedback from functionality and usability, the focus group segment of the event was helpful and interesting to see how participants applied their exceptions of similar products to what had been proposed to them.

Better yet was when a participant expanded on an existing expectation to form a new idea as not only is there a new and potentially good idea to consider, but now that participant feels good about making a suggestion and feels involved as if they have contributed in some way.

This whole process of design and development being informed by users is something that benefits any product and by ensuring there are suitable tools and events planned to accommodate for this, stage 2 of production should become more efficient than the first stage.

There are two ways in which this is planned to be incorporated. First, another focus group meeting is planned for Easter (date to be confirmed on development blog). This will be on a larger scale to that featured in the user testing event of stage 1, and will also hopefully be in a school. Ideally, the same school will be used for this as the final user testing event (see below) to keep up a level of consistency and to reward participants for helping with the process.

Opinions will be asked regarding the concepts direction (as an introduction), current developments and future developments. Concepts and planned features can even be demonstrated as paper prototypes and storyboards for

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<sup>1</sup> For a breakdown of planned developments for stage 2 see page 38 of the products planning & design document: <http://www.frontier.lincoln.ac.uk/unitE/DesignDocumentPart1.pdf>.

<sup>2</sup> This will be documented in the development log: <http://www.frontier.lincoln.ac.uk/devblog>.

such things as menu and interface design, mini-games and final product functionality.

Second, there is now an online feedback forum hosted by [uservice.com](http://www.uservice.com)<sup>1</sup> linked from the products website<sup>2</sup> where anyone can post public suggestions, opinions, ideas, feedback and bug reports. This is a great tool but only if it is visible to the people who matter so over the next few weeks, this matter will be considered and a possible starting point is a viral campaign targeting the test participants from the stage 1 testing event and their friends.

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<sup>1</sup> See: <http://www.uservice.com>.

<sup>2</sup> Specific feedback forum for product: <http://frontierlincoln.uservice.com>.

## **7. Planning for Stage 2 Testing**

Ultimately, the methodologies and model used for stage 1 of user testing were to trial the models suitability for user testing on web game products and specifically the products produced for the remainder of this award.

As suitability was concluded to be successful, the following section of this Chapter discusses how the models will be used and scaled up to test future developments proposed for stage 2 of user testing.

### **Final User Testing Events**

Despite the plan to test every aspect of all products and features produced during the forthcoming stage of development, there is still a great deal to be learnt from having a wider participant base at a staged event similar the one conducted for the first stage of development.

Gender and age differences will yield a different experience and expectations so to best accommodate for this, a new approach must be considered.

During the last week of May 2010 (date to be confirmed), a final usability testing event will take place on all outstanding products. By this stage there will be a sufficient amount of content to warrant testing on a larger scale and to a more public audience.

By this time, the final products ability to be used as a classroom-based learning tool can now be tested so the focus of the testing can be broadened to incorporate testing in schools. The testing model developed for this unit can be utilised in this environment due to its feature of collecting results from participant-completed forms and interviews. How this is planned is covered below.

At the beginning of the month, contact with a high school will be made and a request to have a selection of students, who represent the full range of the intended target audience, will be made to allow a mass user testing exercise to be performed.

If a selection of students is not possible then a class, or volunteers from a class, will suffice so long as there are representative from each gender. This will ensure the products are tested in a classroom environment for which they could be potentially used in.

Managing such a potential handful is likely to be a challenge so planning and preparation is key to the even being a success.

As with the smaller scale testing conducted at the time of writing this report, there will be insufficient time to sit with each participant and guide them through pre-planned scenarios. Therefore, the user testing forms will have be

used again to simultaneously guide the participants through their own, mostly unmonitored, journey and the results were to be there in writing to make post-event analysis possible.

Although the forms were able to provide useful information for stage 1 of testing, they need improving for stage 2. For a start, they were structured slightly illogically with some scenarios requested before the participant was able to complete them.

This was not an issue as the facilitator was on-hand to point the participant in the right direction and inform them to ignore inappropriate questions without wasting time wondering why something cannot be achieved. Considering the amount of participants proposed to take part in this second testing event, the form needs to be logical and well structured.

Another improvement is to completely remove questions that are seeking opinions about the product outside of a usability context. The form used for stage 1 user testing featured a mixture of scenarios and opinions. For this proposed event, only user testing tasks and scenarios will feature on the form as direction from the opinion questions will have previously been acquired from the planned focus group meeting (see previous heading),

By conducting this event prior to the expected completion date of the product (inline with what is expected and planned for the award), there will be time to implement any last minute changes where appropriate thus ensuring the product is suitable for its target audience.

A full strategy for stage 2 user testing will be produced nearer the time of its planned execution. Details for it will be posted on the products development blog or in the written documentation that will accompany the appropriate unit of this award<sup>1</sup>.

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<sup>1</sup> Details will be available from the end of April 2010 at: <http://www.frontier.lincoln.ac.uk/unitG>.

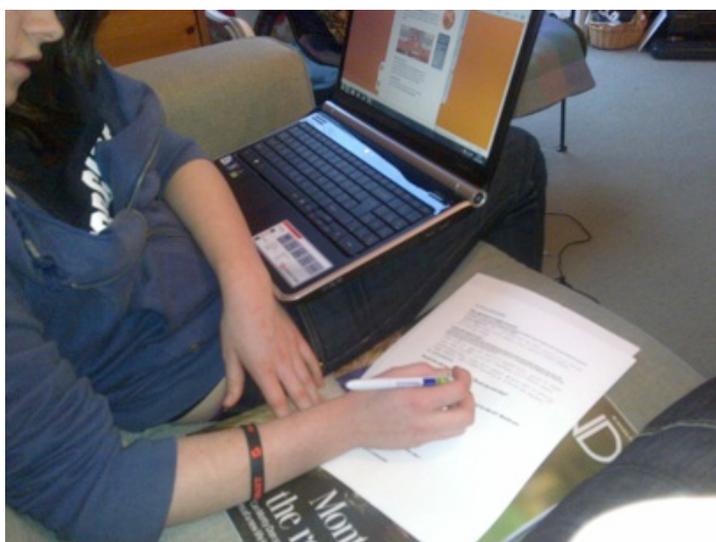
## Appendix A. Implementation of Stage 1 Testing

At just after 2pm two of the three participants convened at the pre-arranged venue ready to take part in the testing exercise. A further 45 minutes passed and still no sign of the male participant.

It was soon made apparent that he was unable to attend but promised that if the applications were accessible via the internet, he would complete the testing and feedback his results using the supplied user testing form.

Although the standby participant was available, it was decided that two participants tested simultaneous was the best way to approach this considering the available time remaining for the exercise.

Testing was underway and while observing one of the participants interacting with the website and working through the form (Fig.1), the other was becoming familiar with the mini-game which was presented to her abstractly. This would not taint the results as she would be made non the wiser about what the game was or how she got there yet it would provide something for her to do.



*Fig.1 A participant carrying out a planned scenario on the product website*

Once the first participant has finished testing the website and web versions of the products applications, the second user took her place and began working through the form (Fig. 2) in the same was as the first participant and reactions and actions were observed and noted down.

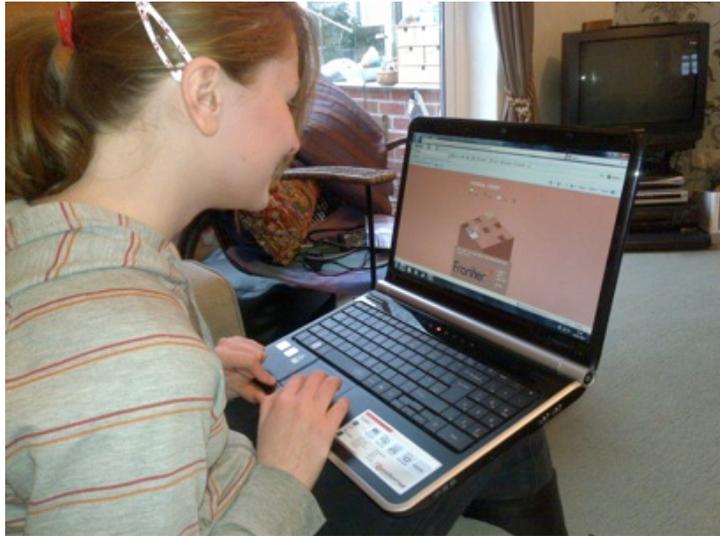


Fig. 2 Playing the mini-game on the website proved the most enjoyable task although finding it was a slight issue

Meanwhile the first participant was then presented with the mini-game in the same way as the second participant had initially and was allowed time to complete outstanding questions posed by the user testing form.

Once both participants had completed the tasks and scenarios posed by the form for products on the web platform, the first participant was instructed to undertake testing on mobile device versions of the products with the first scenario posed being the transition from web to mobile (Fig. 3).

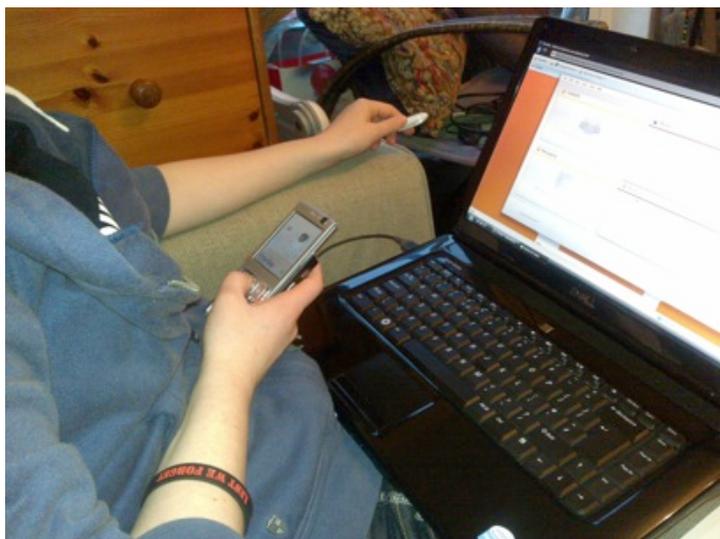


Fig. 3 There were usability and technical issues with installing the mobile content

Again, once the first participant had completed all the mobile device scenarios and been observed using them, she swapped places with the second participant and completed outstanding questions on the form.

As planned, once all the user testing had been completed, a clear suggestion was made that the event was now reaching a different phase and the informal focus group session started (Fig. 4).



*Fig. 4 Both participants were keen to help steer the product and made thoughtful suggestions*

Questions were asked to help start the participants provide thoughts on what currently exists, or is planned for inclusion in the final product, and the products underlying theme, direction and goals were openly discussed in a “thinking out loud” session which was ideal when recording the results.

Finally, after all planned activities for the event had been finalised and documented, the participants were thanked and given their rewards for their time, effort and input to the procedure and the event was concluded.

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