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DEVELOPMENT OF A PROCESS FOR THE USABILITY TESTING OF ONLINE COURSES

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Abstract

Although usability testing should be an integral part of course design, not all institutions have standard procedures for ensuring quality testing. This paper discusses the development, at The Open Polytechnic of New Zealand, of a test for a specific design element (navigation) of an online course. This process has led to the production of a set of good practice guidelines for usability testing of online courses in general.

Keywords

Usability, testing, navigation

Introduction

The Open Polytechnic was established in 1948 as a distance education provider of print-based courses. It offers a wide subject range of courses at certificate, diploma and degree level. Over time it has established consistent templates, styles and course structures to ensure the quality of printed learning materials. Prior to 2000, the Open Polytechnic had no experience in the delivery of online courses. In 2000, the Open Polytechnic launched its online teaching brand, OpenMind Online.

In the early stages of OpenMind Online, design decisions were guided by NextEd, a systems integrator that provides infrastructure to post-secondary education and training providers. As OpenMind Online evolved it became clear that there was a need to move to a template that would be better suited to the course material, would allow for the growth in the use of multimedia and would increase learnability, memorability and student satisfaction.

The aim of this research was twofold: 1) to test a specific design element of an online course currently under development and 2) to produce a set of good practice guidelines for the usability testing of online courses.

This paper will discuss the usability testing of an online course, the development of best practice guidelines and outlines potential pitfalls for other course designers contemplating usability testing.

What is usability?

In the commercial world Web users have an astounding choice of sites to visit and they tend to move from one to another with remarkable speed. This has, to an extent, led them to expect instant reward. Users want to find what they are searching for easily and display impatience when a site does not, in their minds, measure up. From the moment a web user enters a site they are affected by the usability of the site. Good usability may convert them from a visitor to a customer (Nielsen, J.2000).

In the world of online learning the situation is reversed because the student actually pays for the course before they experience the **usability** and **learnability**. So although the education provider may have

gained the ‘purchase’, in this setting there is more focus on success, completion and pass rate and the student re-enrolling for other courses. Testing usability should, therefore, be focussed on achieving these aims.

Methodology

Consultation phase 1

A meeting was held in which the E-learning office and an instructional designer discussed the possibility of usability testing for the new template and a general outline for testing was created.

Selection of constructs

The main aim was to test whether students could access course information and perform common navigation tasks quickly and without frustration. Therefore task analysis was the most suitable test method.

We looked closely at courses using the new template and identified the main navigation tasks that students were expected to carry out. These formed the basis for the list of test constructs.

Selection of tasks

Once the constructs were decided, tasks were identified that would test those constructs and be able to be carried out within one hour (O’Connor, 2002). Both the tasks and the order of tasks were considered. A draft test schedule was drawn up, and was fine-tuned in the second meeting. Table 1 gives the task list together with the record of action that the facilitator would need to note.

| Task | Record of action |
|--|--|
| 1. You are looking at the first page of Module 3. Now go to section 3.4. | Number of steps taken |
| 2. Skim through the section until you find Essential reading 3.8. Open the reading. | How easily was the reading located? How did they close the reading before they moved onto the next task? |
| 3. Now go to Activity 3.4.1. | How easy was the activity to find? |
| 4. a) Go and read the feedback for this activity. b) Now return to the activity | Were they confident using the <commentary> button? Did they close the feedback window using the <close window>? |
| 5. Go to the Announcements page. | Number of steps taken: |
| 6. Now go to the Study materials and find your way to module 2. | Describe the route they took. |
| 7. Now scroll to the bottom of the page. If you were actually doing this course where would you go next? | Was their answer confident? What was their answer? |
| 8. Now go back to the Announcements page. | Number of steps taken: |
| 9. Find the section title “Emergent Change” in module 2 | Did they: <ul style="list-style-type: none"> • Go to the module and use the map to find the section number? • Use the study plan • Other: ASK: ‘How easy was it to find this section?’ |

Table 1. Task list

Selection of participants

It was agreed that we would aim for seven or eight test participants. (For discussion of usability testing with small numbers of participants, see Clarke (2001) and Nielsen (2000)). Ideally, we would use test subjects that closely resembled the target student population. In particular we wanted a mixture of men and women, of ages and occupation backgrounds. We were looking for a majority of non-degree holders and volunteers who were interested in learning online.

Selection of facilitator

We decided it was important to have a facilitator with experience in usability testing who is not directly involved in the OpenMind Online process. An instructional designer at The Open Polytechnic of New Zealand was approached and agreed to help on this project.

Selection of environment

We sought a quiet environment for the testing. In addition, the area needed to have a fast network connection (as we were not testing network speed, only navigation at this stage), and ample space for the test participant, the facilitator and the video camera. Videotaping the tests would give us a better 'feel' for the process (as we were not present during the testing), capture mouse movement, body language and extra verbal information, and would allow us to review and store the data.

Consultation phase 2

Before testing began, another meeting was held. A representative from the E-learning office, the test facilitator (acting as an independent advisor) and two instructional designers met. During this meeting, we fine-tuned the testing constructs, tasks and task order, and set dates for the testing.

Results

The testing took place over two days so that the facilitator could remain focussed and ensure that each participant was tested in a similar way. Although seven people were invited to take part in the testing, only six actually attended the testing session.

Once all the tests had been completed the results were compiled and examined. A draft paper was circulated to the E-learning office and OpenMind Online Portfolio Manager and a feedback session was held for the instructional designers who work on OpenMind Online.

Discussion

Usability testing of navigation

Results showed that participants were able to navigate around the course material easily and quickly. In fact, some commented that they were surprised that it was so easy. They felt that the modules and sections were clearly marked and that the main menu items provided clear reference to contents. An aspect that was particularly liked was the use of highlight colours throughout the course.

The provision of an overview of the course material was seen to be useful but some improvements (unspecified by participants) were felt necessary. Currently we are designing a simple yet informative map that will appear either at the beginning of a course and/or each module.

Most students used standard scrolling techniques to navigate around the course, although a percentage used the *Edit, Find* function of the browser. This function worked when the student was actually in the course materials however it did not work when the student was either in a reading or a left hand menu item. Some participants also expressed confusion over terminology used to refer to feedback. This problem was easily remedied by standardising terminology.

Process used

In terms of planning for usability testing, the process as outlined in the methodology in this paper produced a successful instrument that returned clear and valuable feedback. The choice of constructs and tasks to test those constructs proved key to the success of the testing. Throughout the process consultation between key stakeholders was essential.

Pitfalls

As with any process there are pitfalls that the unwary may encounter. Some that we have identified as we worked through the process were:

- Poor consultation
- Issues with volunteers
- Constructs that do not match the design element to be tested.

Conclusion

The first aim of this research, the testing of the template navigation gave valuable feedback. Generally participants felt comfortable moving around the course material and could find what they wanted to find, when they needed it. These results demonstrate that the new navigation meets Nielsen's definition of usability: "Usability is a quality attribute that assesses how easy user interfaces are to use." (Nielsen, J. 2003). We further predict that the new template is therefore not likely to impede learnability of course content.

The second aim, the production of a set of good practice guidelines for the usability testing of online courses has reached its first stage and draft guidelines have been formulated:

Good practice guidelines

- Throughout the process consultation with key stakeholders should be maintained
- Obtain institutional backing for usability testing. This needs to include budget, time allocation and official recognition of the importance of usability testing
- Clearly identify, and agree upon, the design elements to be tested
- Select an appropriate testing methodology
- Limit the scope of testing to what can be managed in under one hour, so as not to fatigue the participant.

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