Benchmarking of Online Information Literacy Tutorials to Identify Lessons Learnt and Best Practice.

Ruth A. Hunn, Amanda C. Elliott & J. Stephen Town
(Cranfield University).

Abstract

This paper reports the process and findings of a benchmarking exercise conducted on 10 online information literacy tutorials from around the English speaking World. The benchmarking exercise comprised site visits and the completion of an online survey. The aim of the exercise was to establish best practice and to gather any lessons that could be learnt, with the overall purpose of determining ways that our information literacy tutorial could provide the best quality and performance through the identification of user requirements. The method of selecting the tutorials to benchmark against and the areas to include in the review is described. A summary of results from each of the benchmarked areas is included for: pedagogical issues; design, development and user feedback; content; interactivity; and look and feel.

Keywords

Information literacy; Benchmarking; Tutorial design and development.

Introduction

The objectives of this paper are to describe the application of benchmarking to a developing field of library and information work; to consider the issue arising of what performance measures might apply to the area of online information literacy tutorials; and to report the findings of the benchmarking exercise and the lessons learnt both from the process and those which might inform future development of such tutorials.

In summary the paper is organised in three sections: the background to the e-literacy project at Cranfield University; the benchmarking rationale and method; and the results and lessons learnt.

Background

Information skills education has been offered to undergraduate, taught postgraduate, and research students studying at Cranfield University's Shrivenham campus for many years. Traditionally this has been delivered in groups by subject librarians, and has mainly consisted of initial training at induction, with more detailed sessions at appropriate points of study; for example pre-dissertation. Much informal one-to-one training and education also takes place, and the time given to this area of work has expanded significantly in the past few years as electronic resources have increased in range and substance.

The Information Services department has recently also delivered a suite of high quality interactive e-Learning Courses for the Defence Academy. These form part of the overall career courses undertaken by Army Officers, and most students undertaking these courses will also ultimately be educated on distance or residential courses provided by the Defence Academy as their careers progress.

Consequently it was considered appropriate to consider the development of an online information literacy tutorial focussed on defence. This would complement and support the existing e-learning packages and assist in laying a foundation of information literacy which could be built upon during later education. The product would also be an exemplar of the synergy which exists at the Defence Academy between librarians, e-learning designers and developers, pedagogic experts and military educators.

The e-learning information literacy (IL) tutorial is therefore to be directed at vocational learners who are studying at Officer level. The aim of the product is *to enable the student to learn the relevant practical application of (identifying, locating and) using information effectively,* and this aim was used as the starting point for the research and benchmarking activities.

The information literacy tutorial is being produced following general project development phases of research, followed by specification, development and test, then build and test, with dissemination and marketing occurring throughout the project. Of particular importance is the research phase; it is considered essential that the product is

developed with defined learning outcomes, a clear understanding of the target audience, and whether there is best practice that might be adopted for the development process or for content.

Benchmarking rationale

The rationale for applying benchmarking within the project was to avoid re-invention and to commence the development of the product from a position which took into account previous best practice. In order to perform benchmarking effectively, the attributes of this type of product needed to be understood, and measures applicable to those attributes defined. The aim was to ensure that developer-level insight would be gained from the process to provide a deeper understanding of not just what makes a good tutorial, but how this could be technically achieved in practice. Benchmarking was considered to be a suitable method to apply in this context. The output from the benchmarking was required to ensure the correct direction of our product; through disseminating our findings to the management and design teams and by including lessons learnt within the design specification.

Benchmarking models and method

Benchmarking has been used in a variety of library contexts (Town, 2000a). The method adopted for this exercise was taken from that suggested by the SCONUL benchmarking manual (Town, 2000b). This consists of three stages: planning, comparing and acting. In this case the action would be to apply the best practice established to the subsequent design and development of the proposed IL tutorial in defence. The planning stage consisted of identifying 'partners' who had developed leading IL tutorial products, and selecting a measurement framework. Comparisons would inform and influence the creation of our process and product.

Planning and partnering

A review of current literature (from the last five years) was conducted first and was used not only to understand the issues but also to identify potential products against which to benchmark ourselves. In our initial search using literature and the internet, around 200 different items from the English-speaking World were identified that could be classed as providing guidance on information literacy. In order to narrow these down to a manageable number for our first review, we used a set of criteria to identify the most promising potential candidates for the benchmarking process. The criteria were applied as a filter, by asking the following questions:

- Does the product look like a tutorial?

- Is the tutorial unique rather than a replication of another tutorial?

- Does the tutorial contain instruction on how to use a library catalogue and online databases?

- Has the tutorial been created using information literacy standards?

- Can we gain access to assess the tutorial?

- Is the tutorial defence or military subject based?

- Does the tutorial use the VLE *Blackboard*?

- Does the institution use the *Harvest Road HIVE* digital repository?

- Does the tutorial use another VLE?

- Is the tutorial available on the web?

As a result, thirty tutorials were selected for further review. These included products originating in the UK, Ireland, North America and Australia. These thirty were then reviewed in detail and ten were considered to be suitable for the benchmarking process. These ten fulfilled one or more of the following relevance criteria:

- They covered a similar subject matter or applied to a similar audience

- They were well known or well used

- They used the SCONUL Seven Pillars Model as a framework (Advisory Committee on Information Literacy, 1999).

- They used the HIVE digital repository for development or for Learning Object storage

Measurement

A range of attributes would need to be assessed in the benchmarking exercise. It was recognised that how the tutorials enabled students and helped them to learn, implying sound pedagogy, and the content, would be important points of comparison. Student satisfaction with the products would also be of interest, and also how the product was specified for development.

Initial reviews and observation included consideration of issues such as the size of the content in terms of pages, download time and time to complete; whether simple accessibility issues were considered; and whether different learning styles appeared to be catered for. However, this review could not provide the deeper understanding and insight to characterise best practice.

The potential measurement areas identified were compared to previous work identifying critical success factors for information literacy programmes, carried out in the UK

through SCONUL (Town, 2003). This suggested six areas of success criteria which might be used to form measurement frameworks:

- Library Staff capabilities

- Resources available affecting delivery

- Students

- Partnerships with other staff and stakeholders

- Institutional strategies

- Pedagogic quality

This work provided additional support and confirmation for the proposed measurement areas for this exercise. Both library staff and developer capability would be relevant to the creation of a successful tutorial, as would the relationships and partnerships between them. Institutional strategies were not strongly relevant to this study, or resource or infrastructure issues, except where they might have influenced design or format. Clearly attributes affecting student motivation, relevance and acceptability were critical, as was pedagogic quality.

Consequently partners were asked to provide data in five specific areas for comparison:

- pedagogical issues

- design, development and user feedback

- content

- interactivity

- look and feel

Comparing

Once the ten tutorials for our benchmarking had been specified, we used two different approaches to capture the depth of information sought: direct, semi-structured interviews with the librarians responsible and an online survey (Churchill, 1995).

We visited UK locations to view four of the information literacy tutorials and to discuss their development and use with the librarians who were responsible for their introduction or management. During these visits we captured information on the five specific areas of interest described above: pedagogy; design and development; content; interactivity and look and feel. The visits were particularly useful because of the depth to which we could pursue specific issues and also, that local lessons learnt and the cycle of development necessary could be explored. All librarians we very forthcoming with information and were supportive of the sharing of best practice through benchmarking. These visits were also used to help identify questions we should add to the online survey prepared for the other institutions.

An online survey was used to capture information from other potential partners, by necessity for those overseas. The survey was password protected to ensure that only the

specified institutions were able to access and complete it. We invited those we had visited to fill out the survey as a pilot. After initial request and follow-up, we finally received thorough replies from 8 of our 10 potential respondents.

Results

Once the benchmarking exercise had been concluded, the findings from the visits and online questionnaire were summarised. These findings were then added to the research conclusions, alongside those derived from the reviews on the literature and the initial online tutorial reviews. The conclusions have since been used to help understand potential user acceptance risks and to generate the user requirements for our information literacy project (Elliott & Hunn, 2005). This section discusses the detailed findings from both the benchmarking visits and surveys.

Pedagogy

Pedagogy is important when constructing a tutorial and, in general, the basic elements of pedagogic consideration were evident in the tutorials we benchmarked. Institutions reported that their experience lead them to use activities and other elements of interest to break up learning material in more easily digestible pieces. Additionally, placing only a limited amount of learning material on any one page was considered effective, so that the user does not have to scroll excessively.

Most institutions benchmarked considered the incorporation of material for different learning styles to be worthy of consideration. However, this was an area where many were not able to accommodate different learning styles as well as they would have liked. This was due to constraints of time, money or capability. We discovered that this was an area that was difficult to achieve and where specific input is needed from an instructional designer to ensure a more inclusive design of learning material.

Design, development & user feedback

Institutions predominantly chose to use software that was readily available to them or that were recommended by their IT department. A number of institutions in the UK used the *Informs* software but it was acknowledged that this software was not always as flexible and limitations prevented them from doing everything they would have liked. This is because this software was developed for generic use; a lesson that can be applied when choosing any software package.

A number of the visits resulted in detailed discussions on design, development and user feedback. User feedback from end users was found to be difficult to obtain, although where any comments, official or unofficial feedback has been received, the institutions have responded and made changes. Responses from the surveys concurred that it was more common to use library staff than end users. The benchmarking has revealed that, although getting the end-user feedback could be very useful, good-quality peer review

appears to be the most productive scenario for identifying issues during development of the tutorial.

Content

Different IL standards were used across the tutorials benchmarked, noting the value and re-use in the content of the standards. Institutions start writing their learning material content by producing learning outcomes, often based on the standards. From our visits, it was understood that learning outcomes were based on their chosen information literacy standards or set of core competencies (i.e. information literacy skills to be learnt). It was found that institutions concentrated on the information literacy core competencies of searching and locating information, rather than the "higher order" skills of organising information, communicating it or creating new knowledge or information. However, some tutorials did include all elements of information literacy.

The majority of institutions produced generic tutorials, only two produced tutorials with subject-specific content. Generic tutorials were reported as more cost effective to develop and respondents believed that they would appeal to a wider student base and having a subject-specific tutorial requires regular updates. It is noteworthy that most of the tutorials were aimed at undergraduates, which may account for this approach.

Interactivity

Out of the tutorials benchmarked only one did not include interactivity. The reason given for this was that the developer did not have the necessary skills, which is a lesson in preparation for the development of such a tutorial.

Assessment was also popular in tutorials, especially at the end of a module. The preferred method of assessment was multiple choice questions which provided the user with instant feedback. There were many different software packages available to support developers in assessment and most seems comfortable with the use of assessment in the tutorials. However, of particular importance is the need to keep assessments updated, which can be time consuming.

Look and Feel

In order for navigation to be effective, it should be clear and inform the learner where they are, how much of the tutorial they have completed, what is left for them to do and where they can go next. The methods for achieving navigation were similar in most cases. Librarians reported that they sought to provide a navigation structure and system that learners would be familiar with. As such, a left-hand-side navigation menu with highlights was common, with a supplementary bread-crumb trail in some cases. Additionally, one institution also offered a table of contents with hyperlinks.

It was evident that, although recognisable navigation was used, most tutorials also included help and direction for users. In particular, half of the respondents stated that they also carried out a "hands on" session with learners. Others provided an introductory module, which helped learners familiarise themselves with the tutorial. Indeed, all those benchmarked except one, stated that they felt that the students would need guidance on how to use the tutorial. The observation here is that it is most likely naive to expect users to immediately pick up a tutorial and use it in the way intended, without some form of starting point and reference help.

Accessibility, on the whole was not managed well by those in our sample. It was an area of concern to many, but most did not attempt to resolve many of the potentially difficult or restricting issues relating to making the tutorial accessible to all. Only one of the institutions carried out thorough testing and made changes to accommodate disabilities by providing full text alternatives and updates to help those who are dyslexic or colour blind. The use of plug-ins and additional software that is not necessarily compliant with the Disability Discrimination Act was cited as a reason for problems. Therefore, some believed that a lot of work and time would be needed to make the tutorial accessible to the wider audience. Out of the entire benchmarking exercise, this was the area where there appears to be most scope for improvement over what is already available.

Conclusions

Benchmarking can be usefully applied to online information literacy tutorials in order to establish best practice and inform future developments. The online survey was beneficial in gaining data from institutions we were unable to visit, and provided further confirmation of issues raised during the visits. However, as previous library benchmarking exercises have suggested, more useful information and in-depth insight was gathered from the face-to-face visits to institutions.

In terms of lessons learnt about the benchmarking process, the online survey produced much information, but its development took longer than we had envisioned and administration was not straight-forward. This was partially due to the location of the survey within a protected domain involving the use of passwords. This caused frustration on both sides and may possibly have been a reason for non-response from two institutions.

The results obtained during the benchmarking exercise re-affirmed the conclusions gathered from our reviews of the literature and our own assessments of available online tutorials. It was worthwhile to conduct the exercise, as we were able to gain valuable developer-based insight that was unlikely to be obtained in any other way. The output from the exercise was used as an important input to our user requirements for our own tutorial design. It also had the additional benefit of providing a much wider awareness of

the technical issues; something that will benefit the relationship between the librarians

and the technical developers as we proceed to the development phase.

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