

Mentoring Sessions: Increasing the Influence of Tutors on the Learning Process in WBT Systems

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Abstract: The basic functionality offered by WBT systems is provided through a number of tools that support different user roles in those systems: authors, tutors and learners. Usually, learners utilize WBT learners' tools in order to improve their knowledge and skills. Authors contribute to the courseware repository creating and publishing learning modules. Tutors manage the learning process on some particular subject trying to bridge the gap between the courseware and learners. Usually, the success of a particular WBT application depends on the general quality of the courseware offered by the WBT system, i.e., the success in WBT systems depends, mainly, on authors who provide the courseware. However, we believe that tutors' role, and not the authors' role, in WBT systems should become of the primary importance. It should be possible to exploit the enormous knowledge and experience that tutors possess by providing tutors with the means of more useful and powerful tools. The concept of Mentoring Sessions implemented in a novel WBT system WBT-Master provides a simple tutors' tool that improves the tutors' influence on the learning process tremendously.

1. Introduction

The enormous educational capabilities offered by the Internet, in general, and the World Wide Web [Berners-Lee et al., 1994], in particular, are very well recognized by the Internet community. In the past few years this recognition has led to the development of a wide range of so-called Web Based Training (WBT) applications. The first developed WBT applications exploited the WWW as a perfect courseware dissemination channel to deliver the courseware to their users "anytime and anywhere". However, modern WBT systems are much more than just a simple courseware dissemination channel. Those modern WBT systems support much broader functionality providing facilities such as [Helic et al., 2000] [Andrews et al., 1996]: support for different user roles (authors, learners, tutors); authoring of highly qualitative multi-media courseware; maintaining of large structured repositories of learning resources; customization of courseware to each particular learner; synchronous and asynchronous communication between different learners, as well as between learners and tutors; progress tracking, etc.

As already mentioned, one of the main concepts behind the modern WBT systems is a distinction between different user roles in the system. Thus, a standard WBT system distinguishes between the following three user roles [Helic et al., 2000]:

- Learners utilize WBT information services in order to improve their knowledge and skills. They are motivated to use the system services by a particular Learning Goal in mind. In a simplest case, the Learning Goal may be just a wish to pass an examination and to get some credits.
- Tutors manage the learning process on some particular subject. Tutors select an appropriate learning strategy (say, Learning By-Doing, Situation-Oriented Learning, etc) to achieve better learning results. Tutor control learners' progress with the material, offer additional materials and point learners to fellow helpers if necessary, examine learners' knowledge and acquired skills, etc.
- Authors contribute to courseware repository creating and publishing documents, combining the documents into navigable structures (courseware libraries, courses, learning modules, etc.).

Thus, all the previously mentioned facilities, supported by a WBT system, may be seen as different tools provided by such a system in order to support a particular user role. For instance, an HTML editor, that allows users to create highly interactive multi-media HTML documents that in turn may be interrelated into a navigable structure may be seen as a typical authoring tool in the scope of a WBT system. On the other hand, a chat tool that allows different learners to synchronously communicate with each other in order to discuss issues related to a particular courseware unit would be a typical learner tool supported by a WBT system.

The largest effort that many researchers and developers of WBT systems put in their work in the past few years, was directed toward improvements of authors' and learners' tool. Thus, all the modern WBT systems provide nowadays very powerful facilities that support authoring, structuring, providing a convenient navigational paradigms or publishing of highly qualitative multi-media courseware (e.g., Course Wizard in GENTLE [Dietinger and Maurer, 1997] [Dietinger and Maurer, 1998] or Course Scheduler in Lotus Learning Space). Further, facilities supporting learning process for learners such as: study rooms, annotations to learning material, synchronous and asynchronous communication with other learners and with tutors, course overviews, progress tracking and similar are nowadays a standard part of each WBT system.

A certain lack of good tutors' tools may be noticed in all the relevant WBT systems nowadays. Usually, tutors have just the following possibilities to influence the learning process in a typical WBT system:

- to customize the courseware prepared by authors by means of different authoring tools to the requirements and/or needs of a particular learners' group
- to communicate, synchronously and/or asynchronously, with learners, usually to answer questions related to a particular courseware unit
- to annotate particular parts of learning material that are important in the learning process
- to track the progress of a particular learner and to try to adjust, usually by means of tutors' tools already mentioned, the courseware and the learning process to a particular learner.

Even though tutors' role in a WBT system may be seen as a role of users who try to bridge the gap between the courseware on the one side and the learners on the other side (i.e., between authors and learners) they were not provided with tools powerful enough to achieve their goals. Normally, a success of a particular WBT application was based on the quality of the courseware provided by authors and the capabilities of different learners to comprehend the presented material. However, we believe that tutors should be provided with tools that will improve the significance of their role in a WBT system tremendously, even to make the tutors' role to be of the primary importance. In this way, a WBT application provided with good tutors could be a success, even if the quality of the courseware is not so high.

The WBT-Master [Helic et al., 2000], a novel WBT system, provides tutors' with much more powerful tools than it is the case with the most of today's WBT systems. For example, tutors may influence the learning process on the full extent through the concept of Learning Goals [Helic et al., 2000], or they may even author their own courseware on-the-fly through the concepts of unified HM-Data Model [Helic et al., 1999] [Helic et al., 1999a]. In this paper we present a novel concept of so-called Mentoring Sessions, which is another useful tutors' tool supporting "live" mentoring of learners as they are working through a particular courseware unit.

2. Mentoring Session

The main idea behind the concept of so-called Mentoring Sessions tries to improve the significance of tutors' role in WBT systems. Beside authors, who prepare courseware for learners, and who are usually experts in a particular field, tutors usually have a large knowledge on a particular topic, as well as a considerable experience in working with learners. Tutors' tools in WBT systems should be designed in such a way that it is possible to take advantage over the knowledge and especially over the experience, that tutors possess. In this way tutors could fulfill their main goal in WBT systems, and to do so at the full extent, namely, they could gap the bridge between the courseware prepared by authors for learners on the one side and the learners their self on the other side.

Thus, Mentoring Session is a tutors' tool that may be seen as:

- a special way of synchronous communication (online mentoring sessions) between tutors and learners

- a special method of structuring and presenting to learners existing learning resources (recorded mentoring sessions).

An online mentoring session is carried out as a data exchange between a mentor's client (so-called leading client) and a number of learners' clients (so-called led clients). Usually, the mentor's client is operated by a tutor, whilst learners' client are operated by learners.

A recorded mentoring session is prepared by means of a mentor's client and can be viewed anytime by means of a learner's client.

The main idea is that the leading client is provided with a number of special tools to control the data displayed by the led clients to learners.

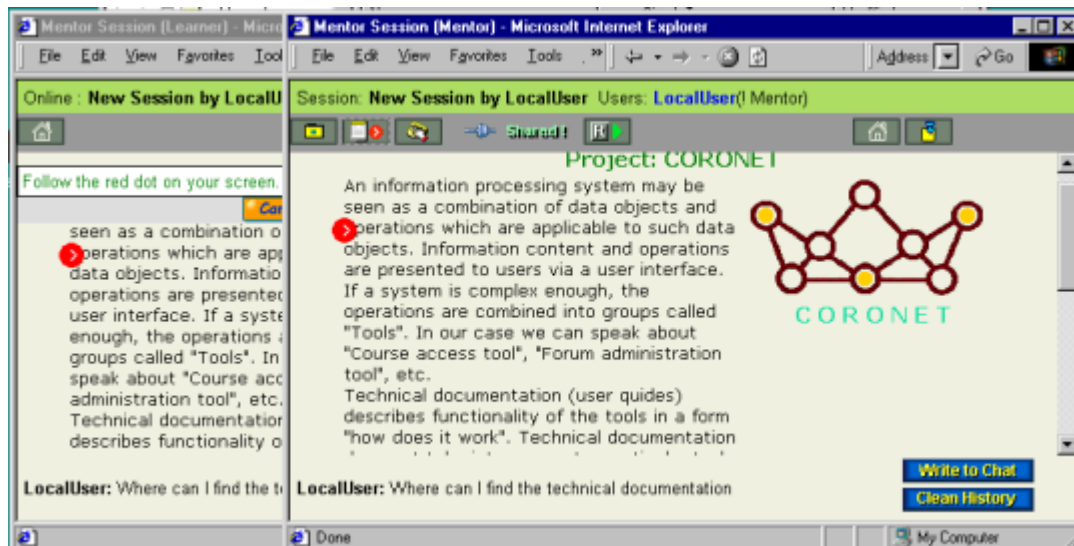


Figure 1: Running a Mentoring Session

Thus, a mentor initiates a mentoring session and defines restrictions for learners to join the session. Selected learners are automatically notified about the session and can join it (i.e., can activate their led clients). The mentor is informed about learners joining the session.

The mentor selects and browses learning resources by means of the leading client. The leading client may be seen as a monitor controlling other tutors' tools and sharing the resource with led clients. The leading client simply passes the selected resource to led screens.

Additionally, the mentor can provide an explanation (text, voice and/or live pointer) attached to such shared resource. The explanations can take the form of a chat session or a special transparent layer on the leading screen where a pointer and texts may be put on the top of a current picture. The explanatory layer is also automatically displayed on led screens.

The leading client allows also to accept data from led clients. Thus, the mentor can request learners to perform an action (say, to write a short article), and monitor the process from the leading client.

Learners are allowed to provide comments to a shared resource by means of special chat facilities. The same mechanism can be used to ask questions in the context of a shared resource.

3. WBT-Master Functionality: Mentoring Sessions

WBT-Master is a novel WBT system, that tries to introduce new ideas and concepts that go far beyond a standard WBT system. The WBT-Master distinguishes strictly between four different user roles in a WBT system, namely learners, authors, tutors and administrators. The leading idea in the WBT-Master development was that a WBT system should be just a set (possible large set) of tools which support the main user roles in WBT system. However, one of the main direction of the WBT-Master research and development was a quantitative and a qualitative improvement of tools for tutors. It is because, we think that the role of a tutor is of the primary importance for a successful WBT system.

Thus, WBT-Master provides a number of so-called functional panels that encourage a usage of Mentoring Sessions. Those functional panels contain a number of activation buttons used to activate different tools, such as the leading or the led client in Mentoring Sessions. Thus, we distinguish between the following three Mentoring Session functional panels:

- session selection functional panel
- leading client (includes resource selection functional panel and resource control functional panel)
- led client.

The Session Selection Functional Panel

Mentoring Session Selection Panel is a list of all mentoring sessions (online and recorded) available on a particular WBT-Master server. A particular Mentoring Session may be selected from the list to work through it. Additionally, tutors may create a new Mentoring Session or edit an existing recorded Mentoring Session.

The Leading Client

Usually, the leading client is used by tutors. The leading client provides:

- Information on the current session status; Such information include info on all learners working on the session and provides possibility to individually contact a particular learner by clicking on his/her name.
- Resource Selection Functional Panel; This panel provides a unified access to all training resources in a form of hierarchy of directories. In order to select a particular resource, tutors simply open a directory and click on a resource name. The resource is visualized in the working area and the leading client switches to the resource control mode.
- Resource Control Functional Panel; After a particular resource has been selected it is displayed in the working area and the tutor may work with the resource. Usually, the tutor may select to share resource with all led clients. After a resource has been shared the tutor may use pointer, write comments or install a web telephony connection, for example, with the led clients. Also, the tutor has to possibility to switch to the so-called "recording session mode" and provide learners with recorded Mentoring Sessions.

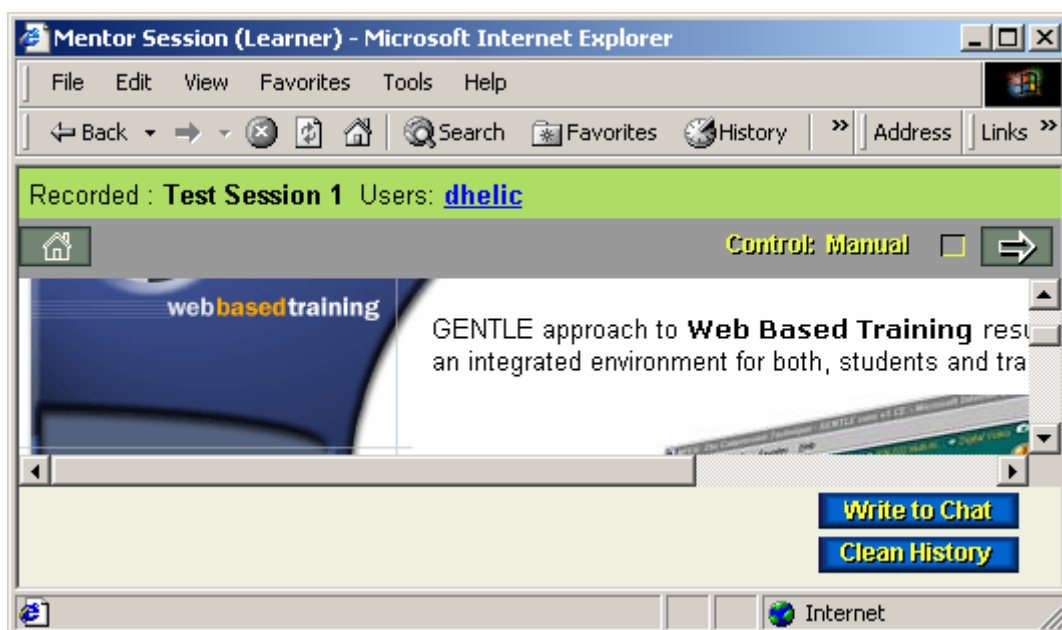


Figure 2: The Leading Client

The Led Client

The led client just displays the shared documents, comments, pointer position and other explanations provided by the tutor leading the session.

Additionally, the embedded chat mechanism may be used to communicate with the mentor or other learners.

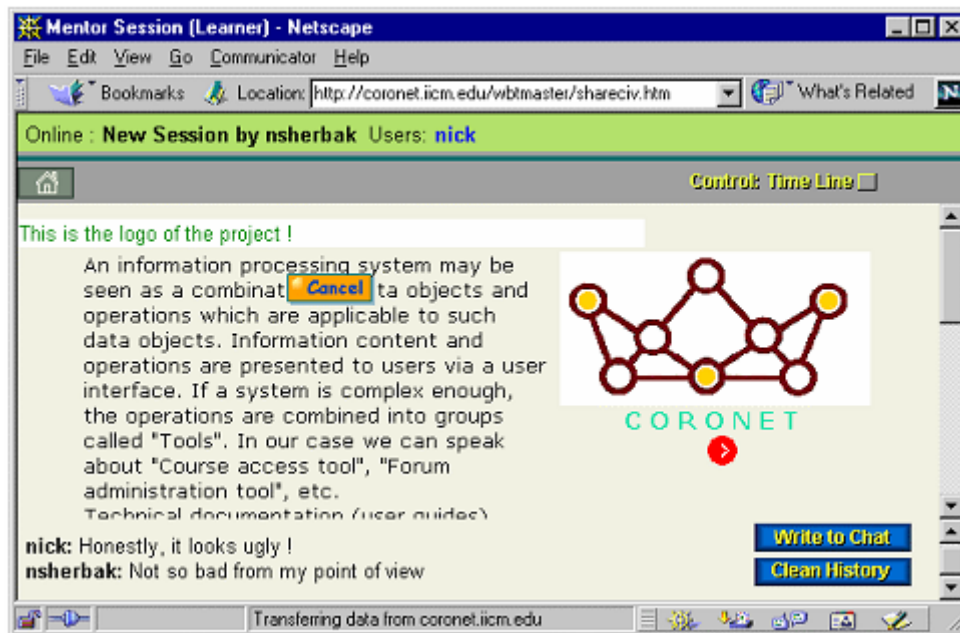


Figure 3: The Led Client

4. Conclusion

Through the concepts of Mentoring Sessions, Learning Actions and Learning Goals, as well as through the concept of authoring on-the-fly carried out by tutors and supported by the unified HM-Data Model, the data model utilized by the WBT-Master, the significance of the tutors' role and the influence of tutors on the authoring and learning process in the WBT-Master has been considerably improved. We believe that the tutors' role and their possible influence on all the aspects of a modern WBT system is of primary importance for a WBT system to become a success. Until now, the success of a WBT application was merely based on the possibility of authors involved with a WBT application to produce qualitative multi-media courseware and the ability of learners involved in the learning process to comprehend the presented material improving in that way their knowledge level. However, through the above mentioned concepts supported in the WBT-Master, tutors may easily gap the bridge between the courseware and its audience. Tutors are now provided with facilities to put a crucial influence to the both: the authoring as well as the learning process, leading WBT systems to achieving their basic goal, i.e., acquiring the needed knowledge by learners.

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