

Teacher Education with Share.TEC web-based repository system

Dimo Boyadzhiev
Faculty of Mathematics and
Informatics
Sofia University "St.Kliment Ohridski"
Bulgaria, Sofia
00359 888 63 48 28
dimo.boyadzhiev@gmail.com

ABSTRACT

In 2010 the first prototype of Share.TEC (www.share-tec.eu) repository system was developed. The system is designed as a highly flexible portal which is supposed to give access to a great variety of Teacher Education (TE) resources. At the center of the Share.TEC system is the repository system which stores metadata for TE resources. The resources are described and classified in detail, which allows the system to recommend certain resources to different users depending on their profiles. The basic purpose of this paper is to examine the extent to which the predefined features of the system were developed in the first prototype and the extent to which the system meets the needs of the target users. For this purpose the system was initially tested by the authors of this paper and the prototype has now been offered for testing to a group of 12 volunteer university and school teachers. Having many years in teaching and training environment the teachers belong to the group of target users which can produce relevant and comprehensive interaction with the system. The feedback will be summarized in this paper and will become a milestone for the final release of the system.

Categories and Subject Descriptors

H.4.0 [Information Systems Applications]: General

General Terms

Documentation, Design, Experimentation, Human Factors, Verification.

Keywords

Teacher education, web-based repository, prototype testing

1. INTRODUCTION

In 2010 the first prototype of Share.TEC (www.share-tec.eu) repository system was developed. The system is designed as a

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WIMS'11, May 25–27, 2011, Sogndal, Norway.

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highly flexible portal which is supposed to give access to a great variety of Teacher Education (TE) resources. At the center of the Share.TEC system is the repository system which stores metadata for TE resources. The resources are described and classified in detail, which allows the system to recommend certain resources to different users depending on their profiles. Efficient and comprehensive search option, reasoning abilities and many more features are expected from the Share.TEC system.

The basic purpose of this paper is to examine the extent to which these predefined features of the system were developed in the first prototype and the extent to which the system meets the needs of the target users. For this purpose the system was initially tested by the authors of this paper and the prototype has now been offered for testing to a group of 12 volunteer university and school teachers. Having many years in teaching and training environment the teachers belong to the group of target users which can produce relevant and comprehensive interaction with the system. The test users are supposed to go through a predefined number of steps in which they will use the system for obtaining information about resources in their specific field, thus collaborating with the system in their own unique way. A number of assessment methods will be carefully examined and two of them will be used to get feedback from the test users. The feedback will be summarized in this paper and will become a milestone for the final release of the system. The test results and analysis from this paper can be successfully used by developers of similar repository systems.

The body of this paper starts with a brief description of the Share.TEC repository system's functionalities and basic testing scenarios descriptions. The paper continues with the definition of the testing prerequisites, and the assessment methods used. The feedback section and a conclusion follow.

2. SYSTEM FUNCTIONALITIES AND TEST CASES

Share.TEC repository system requirements and specifications were developed in accordance with a set of scenarios and use cases. The main system functionalities might be divided as follows: User account and profile management; Searching and navigation through the system; Content creation and assessment functionalities; Collaboration with other system users via a group.

The scenarios provided to the test users all circle around the above-mentioned functionalities. During the whole test all participants were encouraged to observe for reasoning abilities of the system in terms of types of resources suggested to the user, based on the user's profile and behavior in the system.

3. TESTING ENVIRONMENT SETUP

After the authors of this paper initially tested Share.TEC repository system and became convinced that it is ready to be presented to a broader audience, the test group was formed. It included various types of teaching professionals who were chosen mainly because of their valuable experience both as teachers and as frequent users of similar systems for locating and using of TE content. Similar systems include MERLOT – www.merlot.org and CAREO – www.careo.org.

Prior to initial testing the test users received the internet link to the Share.TEC prototype, assessment directions and brief description of some tested attributes [3]. Amongst those attributes were usability, utility and desirability. The last one was considered especially important as it is the necessary prerequisite for the casual user to continue to work with the system after first encounter with it.

In order to receive trustworthy, reliable and analyzable feedback a number of assessment methods for the testing phase were considered. The most well known amongst them were SUMI evaluation [4], Product Reaction Cards (PRC) [2], user-based methods such as questionnaires and interviews, and heuristic evaluation [5]. Additionally were examined the usability testing approaches Co-discovery and Think Aloud (TA) [1]. TA approach stimulates verbalizing of the thoughts, feelings and expectations of the user during the interaction with the system, while Co-discovery involves two system users collaborating while exploring the application.

Numerous factors associated with the location and number of the participants combined with our evaluation experience lead to the choice of following methods - TA sessions and PRC. The first chosen approach was preferred because of the relatively low number of participants and because of the lack of written assessment reports on behalf of the test users which may repulse their participation. As a whole the TA approach was supposed to be the major tool for receiving the recommendations, suggestions and errors from the test users. A minor drawback of the first chosen approach was the need to make the test users relaxed so that they can share their opinion and to persuade them that the system was being tested not their abilities to work with it [1].

The second chosen approach – PRC, was used for obtaining the overall impression of the system and for rating its desirability. The method gives to the test user the possibility to characterize the tested system via choosing several of the 118 available positive and negative word cards.

4. COLLABORATION WITH THE SYSTEM

This section summarizes the encountered errors, impressions and recommendations, which were reported by the test users. For almost all of them working with the system proved to be easy and more or less intuitional. The fields in the screens were rightly positioned with easy to read and distinguish font colors. User information was properly

organized and was narrowed to the really needed data for successful collaboration with the system. The most common recommendation regarding user's profile was to include a field with the stage of education which the user was interested in – higher, university, etc. This information could have been a prerequisite for the reasoning abilities of the repository system.

Logging into the system, searching and navigating through the system were all successful with the following remarks reported. In some of the screens the arrangement of the different sections could be improved so that smaller white spaces appear between the sections. The recommended by the system resources were not quite in accordance with the user's profile at first login stage and last but not least part of the description of a resource was a complex identification string, which successfully perplexed all of the users but lead to no satisfactory explanation for its existence.

Filters by format, language and author were available for the user in a single mouse click. The search results presented not only the link to the description of the resource but also the actual Internet link of the resource. With few exceptions the resources' descriptions were highly rated. All users found very useful the "Search Similar By" possibility, which was available for all the attributes of a resource.

Last common point of discussion for all test users were the translations in the system. An issue there turned to be the lack of translation for sources which titles were in a language different from the chosen by the user. Those titles were shown in the search results, no matter of their language. Obviously the system developers have avoided automatic translation due to numerous possible errors and misunderstandings, which might be accepted as a solution for the first prototype.

5. CONCLUSION

The overall impression of the Share.TEC repository system first prototype is more than satisfactory. All of the expected functionalities worked quite fine. The system is easy to use, robust and reliable. During the testing sessions it was classified as highly desirable with satisfactory level of utility and usability. The feedback was received via the two used approaches – TA sessions and PRC.

The first stage of the project was successfully finished. New release is now foreseen and a much larger number of teachers is expected to be involved in the testing and enriching of the resources database of Share.TEC repository system.

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