Knowledge Exchange: A Tool for Collaborative Learning

Abstract
In a learning environment, knowledge is exchanged between experts and knowledgeable learners. Knowledge Exchange is a tool that captures and preserves this knowledge as a well-structured knowledge base. The learners can refer to this application for help and answers to their problems.

Introduction
The following problems are in a learning environment:
1. The learners have limited access to the experts and therefore cannot always get help in a timely manner. A learner may be working at the desk of a physically distant co-worker, and unable to gain access to the required expertise.
2. The learners may not know whom they can get the best answer to their question from, or what the right expert is.
3. The same questions may be asked many times by different learners or even by the same learners who may quickly forget knowledge elicited from experts.
4. An organization usually lacks the knowledge of experts with their expertise. Knowledge Exchange has the potential to answer many of these questions, and can be used to test quality.

Knowledge Exchange
Knowledge Exchange is an application that addresses the above listed problems.

Finding Information
Users can search the Knowledgebase using keywords. Questions containing those keywords are displayed in front of their link.

2. Browse
Selecting a topic of the user, let’s say “functions”, arrange all the topics and questions that are immediately under “Functions”.

Looking at Questions and Answers
1. Questions
Clicking on a question presents the user with the option to look at all the answers given by experts, but learners posted by peer learners follow-up questions.
2. Answers
The user displays page displays the list of the question, the list of the answers, the name and user ID of the person who posted the question and the date and time of posting.

Maintaining the Knowledgebase
The current implementation uses a conventional text-matching search algorithm.

Looking for a question is what a user sees in the question list. The user can use the “Next” and “Previous” buttons to move down the list. The ID of the user and the date and time of posting are shown along with the question.

Questions and Keywords
When the user clicks on a question, the user can then see the question and its answers.

The “Up” link on each page takes the user back to the parent of the currently displayed page. In this manner, the user can browse the knowledgebase until he finds the information that he needs.

Answering a Question
Experts and knowledgeable learners can post answers to a question. The answers posted by experts are placed in the “Questions” folder. Each question contains answers given by experts, answers from peer learners or answers posted by the user himself. Answers posted by the users are displayed in front of the question’s “Questions from New-Peers” folder.

Contributions
Knowledge Exchange makes the following contributions:
1. It captures knowledge in a readily accessible repository of questions and answers, which (1) makes it quicker and easier for learners to find the information they need; and (2) makes it easier for other users to find the information that they need.
2. A question posted by a learner is visible to several experts or other learners, and the next time the same question is posted by another learner, the answers may be reviewed by the previous user who posted the question.
3. A knowledge exchange accurate context and also makes it easier for other users to find the information that they need.

The user interface of Knowledge Exchange is built with JSP, JavaScript and HTML. Since these technologies are web-based, Knowledge Exchange is accessible through any standard browser from anywhere over the Internet.

Future Research
Study of Impact of Knowledge Exchange
The impact of Knowledge Exchange in collaborative learning environments is an area for future research. The impact of Knowledge Exchange in collaborative learning environments is an area for future research.

Implementation
Knowledge Exchange has been implemented with the following goals in mind:
1. It should be easily accessible; i.e., not limited to a physical location such as a college campus.
2. It should be a web application, i.e., a web-based application that can be accessed from any platform.
3. The system should be easy to adapt to the needs of a new environment, e.g., a new subject matter.
4. It should not require extensive training.
5. It should be easily modifiable to accommodate advancements in technology.

Architecture
The Knowledgebase consists of a Knowledgebase and two layers that bridge the knowledgebase and the user interface. The Knowledgebase is a pluggable repository that provides an interface to the Knowledgebase.

Technology Used
The system is implemented using a conventional text-matching search algorithm and a conventional knowledgebase.

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Technical Information
The Knowledgebase is implemented using an XML-based knowledgebase.

References
The references include a number of topics that are relevant to the Knowledge Exchange system. The references include a number of topics that are relevant to the Knowledge Exchange system.

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