Studii Interim Report

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PROJECT UPDATE

Since our initial proposal, the Studii team has undergone some structural changes and as a result we have scaled back the scope of our project. We will not be creating a functional prototype as originally planned. We decided that both researching and implementing an interface was far too ambitious for our team, especially after the loss of one of our members. Our goal now is to create a low fidelity prototype and perform user testing to identify any faults in the design. So far we have conducted a successful survey and we have been researching popular CSCW tools that were identified by participants. We have also conducted literature review in order to inform the principles of our design. In this report we will describe the results of our surveys and investigations of existing tools, and how that will affect our design of the prototype.

RESEARCH RESULTS

Surveys

In order to guide our prototype design and gather tools for analysis (see Tool Analysis section), we handed out surveys to evaluate student use of online collaborative tools.

We recruited 50 students on the UVic campus to participate in the survey. Participants came from various faculties: 2 business, 1 education, 9 engineering, 2 fine arts, 2 human and social development, 9 humanities, 15 science, 7 social science, and 3 students with combined degrees (science and social science, humanities and social science, and engineering and graduate studies).

Survey Data

What tools are students currently using for group learning?

While mandatory course websites (ie. CourseSpaces, Facebook course pages) were popular, we wanted to focus on tools which students chose freely to guide our design. With this criteria, the top three tools used for collaboration were Facebook private messaging, Google Docs, and Yahoo answers. These websites were used by 82%, 66%, and 44% of students, respectively.

Generally speaking, students prefer to use private messaging. It has a 58% approval rating, while the approval ratings for forum-based and chatroom-based discussion tools are 26% and 10% respectively.

What factors deter students from using a tool?

The survey also revealed the importance of accessibility in our design: 64% of respondents claimed that they were deterred by difficult registration processes when using a collaborative tool, with 58% of respondents citing an unintuitive interface as another cause. Students also mentioned (via write in answers) that they were less likely to use tools that were not broadly known, since it required members to sign up and learn the new tool.

The survey also explored the social aspects of collaborative tools. Shyness as a deterrent (usually due to non-anonymity) resulted in split student opinion, with many taking a neutral stance. Along

the same lines, 72% of students were either neutral or disagreed that community toxicity would impede their use of a tool.

Data Analysis

The most important result we obtained was the key role that accessibility takes in the design of successful applications. The most popular application, Facebook private messaging, is not a CSCL tool, but its universality and ease-of-use take priority over its efficiency. It would be beneficial to have Studii's design and features be reminiscent of those in the top three collaborative tools, streamlining the learning process (see Prototype Design section).

Students had little concern for community toxicity, and while some rated anonymity as a concern, the numbers were fairly evenly split. We have decided that anonymity can be sacrificed in exchange for better accessibility. Yahoo Answers, a site which does not offer the privacy of Facebook messaging or Google Docs, is the third most used collaborative tool. While these users may be less likely to post, the data suggests that they might still use a public tool by "lurking" rather than contributing to the discussion.

Tool Analysis

Facebook

Facebook is the world's most popular social network with over 1.11 billion users as of March 2013 [6]. It is "designed to facilitate online communities and reinforce social ties" [6]. Users create personal profiles containing identifying information, such as their name, their school (past or present), their workplace (past or present), etc. They can also include interests and hobbies, promoting social connection through similar interests. Further, users are able to post status updates, videos, and photos. They can also create and moderate their own special interest page, or create and organize an event page. This is causing many students to use Facebook to arrange study groups or collaborate with classmates using the service [7].

According to a study on student use of Facebook in classrooms, Facebook is "becoming a ubiquitous component to classroom learning" [7]. Due to the nature of the site, real-world and online identities are closely related, leading to a more accurate representation of a person in their online interactions [6]. This is an advantageous characteristic as it establishes a more honest and realistic environment, an important feature when trying to create a community-of-practice.

In regards to Facebook private messaging (PM), it is an "increasingly popular form of synchronous communication over the Internet" [8]. It allows for solo or group chats, creating a message stream in which all past messages can be seen (deletion is not permitted). If a new user is added to the chat, they also have access to past messages. To maintain synchronicity, a signal appears on the bottom of the chat when a user is typing. In addition, the user has a choice of two displays: full page or pull-up bar. The latter is for when the user is exploring other pages.

Google Drive:

66% of participants in our study have used Google Docs, which has many features to support collaboration:

- It uses a google account, which most people already have, and it is very easy to start using the tool.
- The documents can easily be shared with a single link.
- The creator can control who is able to read the documents and who is able to edit them.
- The interface is similar to a standard word processor making it intuitive for first-time users.
- Changes are automatically transmitted to the server.

- Conflicts are highlighted and both versions are displayed which allow for the conflict to be easily resolved.
- There is a complete revision history showing who made which changes.
- The document can be easily restored to an earlier version.

[1]

Ina Blau and Avner Caspi, of the department of Education and Psychology at the Open University of Israel, conducted a study on the outcome quality of collaboration using Google Docs. 118 undergraduate students participated in the study, none of whom had prior experience using Google Docs. The study found that the perceived quality of a revised document was higher after collaboration than after peer editing. Generally speaking, the researchers found that giving suggestions and working collectively created a more positive work environment than editing, and that subjects were more satisfied with their work when they collaborated. [2]

Yahoo Answers:

Yahoo Answers uses a level point system that encourages answering questions, while discouraging question spam. In the level point system, users start at level 1, with 100 free points, and gains more points for their activity on the site. Yahoo Answers avoids question spam by requiring a user to have at least 5 points to ask a question and by enforcing a question and answer limit for even higher level users.

Unlike the other tools, Yahoo Answers has a QA format. Each question thread has an asker, who asks an explicit question, looking for either factual information, or general knowledge. Once people answer the question, the asker chooses the best answer from the collected responses, which always appears at the top of the stack of responses. Generally, questions are resolved by a single expert who answers questions, rather than a collaborative approach with multiple people working together to solve a problem. Researchers from the University of Michigan found that once someone had answered a question correctly, there was no need for further responses, and other experts would usually decline to respond. In addition, it was found that askers preferred longer answers, and that a long answer would have a higher chance of being chosen as the best answer. [3]

Although Yahoo Answers has a somewhat unusual structure for a collaborative tool, it has some advantages. The search function is useful for finding specific and relevant questions, allowing users to quickly check if their question has already been answered. The level point system discourages question spamming, and limits users with a daily action limit. Since the validity of the best answer can be questionable, users are able to an answer a thumbs up or down to provide some group consensus on the correctness of a response. There are a number of disadvantages with the structure of Yahoo Answers, the most obvious disadvantage being that it has a tendency to produce shallow discussions. Moore from the University of Michigan found that answers on the site usually displayed only surface level knowledge. [4] In 2008, Liu and Agichtein from Emory University found that more users using the service did not correlate to better answers, but rather the opposite: more users resulted in a decreased answer quality. [5] As noted above, the question asker has the power to choose a best answer; however, this does not guarantee that the answer is correct. This ability to choose the best answer may work for a QA structure, but for a collaborative approach, the top answer should be chosen collectively. Arguably the largest flaw with the UI is that comments are hidden by

default, and the owner of the answer/comment is not notified if someone comments on their answer.

PROTOTYPE DESIGN

With the results from our survey and our research into other tools, we have made some preliminary decisions about the design of our prototype. As we found with the surveys, the accessibility of a tool is far more important to the average student user than anonymity. With this in mind, we will prioritize keeping the entry barriers as low as possible. By default, anyone will be able to view a Studii board without signing up for an account: accounts will only be necessary to contribute to the board. Account creation will be kept simple: users will be able to login using their Facebook and Google accounts. This lack of anonymity, and the transparent nature of Studii communities, will help keep users honest and preserve academic integrity. One interesting result of our survey was the relative unpopularity of forum based communication tools. In response to this information we will be basing our design on a question/answer format, and there will be a voting system in place so that the best answers can rise to the top. Due to the popularity of Facebook private messaging, Google Docs and Yahoo Answers for collaboration we have considered the possibility of merging messaging with the QA format in order to combine the informal collaboration of instant messaging with the focus of QA. Of course, we can't stray too far from established norms with our design without taking the risk of reducing accessibility by confusing new users, so any innovations must be weighed in a cost benefit analysis against existing standards.

USER STUDIES

Once a low-fi prototype is complete, we will perform user studies to evaluate its design. We plan to recruit 5-6 UVic students to run through 3 user cases using our Studii prototype. For each use case, we will be measuring the number of clicks a participant makes and comparing that to the optimal number of clicks for an ideal run of the use case. Afterwards, we will interview participants to collect their opinions and thoughts on the Studii interface. The data will be analyzed and used to assess the value of our prototype, and to identify areas of potential improvement.

UPCOMING MILESTONES

November 13th: Interim Project Report

November 15th: Prototype Conceptual Design Begins

November 20th: Low Fidelity Prototype complete, User Studies Begin.

November 22nd: User Studies Complete

November 23rd: User Studies Analysis

November 24th: Report Drafting Begins

December 2nd: Project Presentation

December 5th: Project Delivery

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