Designing Palaver Tree Online: Supporting Social Roles in a Community of Oral History

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ABSTRACT
As a more diverse population of users moves online, understanding how to help those groups work together and leverage their diverse skills poses a significant challenge for human-computer interaction. This paper presents a case study of the design of an online community that supports kids interviewing elders to build up a shared database of oral history. Two pilot studies with existing technology are presented, and a software design based on those studies is described. In addition, a formative evaluation of the software is discussed, along with future work. This work shows the value of prototyping with existing technology in order to uncover user needs in an online environment.

Keywords
CSCL, online community, children, user-centered design

INTRODUCTION
Oral history has a rich tradition of providing a view of history through the eyes of real people. Projects such as Foxfire [21] have shown that oral history work can make history especially tangible for students and provide opportunities for deep learning by engaging them with real people whose life stories are part of history.

However, doing oral history is a time-consuming process. Interviewers must find interviewees, coordinate schedules, secure equipment, generate quality questions, do the interview, and produce an artifact from it. Numerous texts document interview [18] and oral history [11] technique.

The difficulty of doing oral history is increased significantly when one attempts to incorporate it into a middle-school classroom. Teachers are already overwhelmed with work, and the prospect of training students to do effective interviews, recruiting elders to be interviewed, and scheduling times for the interviews to happen is daunting. In fact, our early work has shown that even exceptionally talented teachers in history-rich neighborhoods have trouble undertaking such projects [5].

In order to address this problem, we are building Palaver Tree Online, a constructionist [17] community that supports kids interviewing elders to build up a shared database of oral history. A Palaver tree [13] is a West African tree that serves as the center of a village. It is a place where elders come to share their stories. It is a place where members of the community come to have disputes settled, and elders set the record straight. Palaver Tree Online is an attempt to create a similar online community – one that simplifies doing oral history projects for teachers and provides a rich toolset for online interaction between kids and elders.

We do not intend this work as a replacement for face-to-face communications or field trips. Clearly, face-to-face communication should be used in addition to online tools whenever possible. However, we do see this work as a realistic way to integrate oral history into a typical classroom – a classroom where the difficulty of doing face-to-face oral history projects generally means that they will not happen at all.

In order for this community to work, three groups of users need to work together in a meaningful way: kids, teachers, and elders. This paper describes the design of a user interface that aims to make online oral history less difficult to do for all involved.

We first discuss two pilot studies done in a prototype (e-mail based) community. Then, we detail the lessons learned from that pilot work and the community design based on those lessons. Finally, we present a formative evaluation of the community and future work.

RELATED WORK
The CoVis Mentor Database (CVMD) [15] orchestrates e-mail mentoring relationships for students doing science projects. Groups of students work with one adult scientist mentor. The mentor answers student questions and guides them towards a more successful report. Our work is similar in that we are connecting kids with adults who share their knowledge on a particular subject. In CVMD, scientists explain scientific phenomena, which are reasonably well understood. History is more subject to interpretation and personal recollection.

One Sky, Many Voices (OSMV) [20] is an online community where kids explore atmospheric phenomena by working with scientists and students from other classes.

Students become local experts and share their knowledge globally on web-based bulletin boards. One of the major points we have in common with OSMV is organizing educational activities among non-collocated groups. However, OSMV focuses more on kids sharing with other kids [14]. In contrast, communication between kids and adults is fundamental to the success of Palaver Tree.

The Presence Project [8] creates further presence for elders in their communities by providing new means of expression. They argue that elders are often underrepresented, and use electronic billboards and the like to make elder feelings and stories more visible to a local audience. While Presence focuses on elders, Palaver Tree focuses on bringing elders and kids together.

PROTOTYPING WITH EXISTING TECHNOLOGY

Before designing the Palaver Tree Online community, we needed to understand how online oral history works in the classroom. To this end, we did two pilot studies with existing technology in order to understand how it already supports this process.

World War II Pilot Study

At the end of the 1997-1998 school year, we did an informal small-scale pilot study exploring World War II (WWII) history. This pilot study took place in an 8th grade classroom of an Atlanta middle school. Fourteen students exchanged e-mail with two WWII veterans as part of this weeklong project.

Each elder took the time to write an average of one paragraph per question explaining the difficulties and joys of the time. One example follows:

> Students 1 & 2: Did you know anyone in the concentration camp? How did it make you feel?
>
> Veteran 1: I lost 27 relatives in the Holocaust, a grandfather, many uncles, aunts, and cousins. They were sent to Auschwitz, sometime in June 1944. In 1935, when I was 10 years old, I visited these relatives with my parents and sister in Czechoslovakia (now Ukraine). All these years later I had a remembrance of these relatives. Needless to say our family felt the tragic effects of this news for these many years later.

In addition to text, one veteran provided numerous artifacts of his experience. He e-mailed photos of himself in combat situations, newspaper and magazine articles that helped illustrate his stories, and even a political cartoon.

Through this study, we began to understand the feasibility of our concept generally – that elders enjoyed sharing their stories and kids enjoyed hearing them. One elder commented: "Incidentally, today is my 73rd Birthday and I feel great knowing I'm doing this for the newer generation!!!" It seems clear that the Internet can play a critical role in connecting students with elders.

Through this work, we developed an understanding of how best to structure these interactions. Our model provides a way for teachers to combine elder stories and the standard curriculum through technology:

1. Background – students read literature from the standard curriculum.
2. Brainstorming – kids brainstorm questions based on their readings & send them to elders
3. Elders Reply – elders respond with answers, stories, photos, cartoons
4. Going Deeper – students ask deeper questions based on the replies (repeat from step 3 as needed)
5. Projects – students create projects based on their interaction with elders to show what they have learned

In this initial study, we planned to have students create projects to show what they learned. We were unable to attain this goal due to time constraints. However, this gave us a starting point for our second pilot study.

Civil Rights Years Pilot Study

In the 1998-1999 school year, we continued our work within the same middle school. We did an expanded version of our initial pilot study, focusing on the Civil Rights years. We teamed with a 6th grade teacher, and her class of 24 students exchanged e-mail with 10 elders.

Initial Work

Work for this pilot study began in September 1998. Our initial plan was to have kids first meet local elders face-to-face and then work with them online. Teachers are overwhelmed with work, so we chose to allow students access to the stories of their neighborhood without requiring teachers to handle the logistics of multiple class visits. To this end, we made contact with a nearby housing project for the elderly and set up a computer center there. We recruited over 20 elders in residence and began training them in the use of e-mail.

Over time, patterns emerged in the elders' behavior. They operate at a different pace than perhaps younger folks are accustomed. Meetings take time to arrange, phone calls may take a week to return, and training sessions are sometimes difficult to coordinate. Planning with elders requires a great deal of flexibility and understanding.

After a month of training, five of the original 20 elders seemed likely to be available for the entire program. By the time the study began, two of them had become too sick to participate and one became unreliable. We decided to recruit the remaining elders from the Internet. Since this pilot was focused around civil rights, we sent a posting to a mailing list called "Black Geeks Online" (blackgeeks.net) and, within seven days, we received e-mail from more than 100 African Americans interested in sharing their stories. Over 70 of those respondents filled out our web form and are now included in our growing database of online elders.

Even though there are great resources in local communities, harnessing those resources requires a large amount of

effort. The power of the Internet lies in its ability to bring people together easily.

Methods

Through this study, we aimed to understand the impact of online child-elder discourse. Can kids and elders have meaningful discourse online? What is the educational impact of such discourse? In what ways does existing technology help and/or hinder the discussion?

We worked with two 6th grade Language Arts classes and employed an experimental/comparison class design. Both classes spent 30 minutes of class learning the same material through a standard lesson. For the remaining 20 minutes, the experimental class worked on exchanging e-mail with elders while the comparison class continued their in-class work or did research in the library.

We administered an attitudinal inventory to both classes prior to the study and after it was completed. The inventories asked students to rate statements about history, language arts, elders, technology, and art on a Likert scale. We interviewed 5 students in each class before and after the project to further assess their feelings towards history and elders. We also observed many of the classes.

The Study

The pilot study took place over three weeks in April 1999. The teacher selected 10 elders from our database, with ages ranging from 49 to 90 (average age of 60). Students operated in groups of two (10 groups total). Each kid got their own e-mail account and each group was assigned an elder. Each two-kid group, their elder, and a researcher were placed on a mailing list and all discourse was sent to that list to assure all participants got each message.

Results

In the e-mail exchanges, kids posed questions quite similar to those found in the World War II pilot study. Questions ranged from the personal ("What kind of food did you eat?"), to civil rights related ("Have you ever been involved in a civil rights protest?"), to unclear ("Did you use to go to bloody Sundays?"). Elders never balked at any of the questions. When questions were unclear, they asked for clarification: "I do not understand your 3rd question. Send it again after you edit it," said one.

Elders' answering styles varied greatly. Some would reply with just a sentence and others wrote much more (our longest message was 11 pages), but the typical length was a short paragraph for each answer.

Kids created artifacts on a variety of topics, from racism to slavery to specific figures from the civil rights movement. The majority of the projects in both classes were posters. We found no discernable difference in quality between the artifacts created by students in the experimental and comparison classes. Grades showed students performing similarly to how they had in the past. Statistical analyses of attitudinal inventories found no significant difference between pre and post attitudes for either class.

Interviews revealed some of the impact of interacting with elders. Katherine[1] received the longest reply of all the students. "I sent 3 questions," she said in a post-interview, "and she sent back like 7 pages of stuff and I was like whoa! … I was surprised. I thought she knew some stuff, but not a lot of stuff." Katherine also identified a change in her attitude with respect to race relations:

> I learned that even though [whites] did that stuff, you still can't be mad at them because they aren't doing it today even though there are some places we can go and some we can't. Like in Atworth, we can't go up there because at night they'll be mean to you and stuff…at first I was judging white people, I didn't like them -- I just kinda stand them. But then when I seen it from [the elder's] point of view, then I take things slowly and I can't judge a book by its cover.

In her poster, she made extensive use of the elder's messages to support her statements about civil rights. The majority of students commented that they found the exchanges with elders exciting, though many did not make direct use of the emails in their projects.

Discussion

Students were excited to interact with elders online. We found this in our interviews and through observation. Kids repeatedly asked us in class if they had received a response from their elder and smiles glowed on their faces when they read through replies. It is clear to us that those who participated gained something from the experience.

Most students did not use the e-mail in their end project. We believe this indicates a difficulty in working with a new resource type. Some kids did not seem to grasp that the stories their elders told them are just as valid a form of history as what they read in books. This is understandable considering this is the first time they have been asked to do original oral history work. More detail on this pilot work can be found in the Proceedings of CSCL '99 [5].

FROM PILOT WORK TO SOFTWARE DESIGN

We learned a number of lessons for the design of the Palaver Tree community from these pilot studies.

Creating an understanding on reply times. Elders did not always respond in a timely manner and some students did not get responses in time to use them in their projects. In an informal post-survey, our elders indicated that they would like two days to respond. (Palaver Tree handles this by having elders sign an online form in which they agree to answer student questions every two days.)

Background information. Elders and students both felt that they did not know enough about those with whom they were

[1] All names in this paper have been changed.

conversing. Palaver Tree needs to provide a way for users to share background information about themselves.

Tight coupling between discussion and projects. Our pilot work showed that students had trouble integrating elder stories into their projects. Palaver Tree needs to scaffold[2] students moving from discussion to projects. Elders and teachers need scaffolding for their roles as well.

Increased discourse visibility. In our pilot work, each elder was paired with several students. While this "closed" interaction style is conducive to discussion, it is also problematic for a number of reasons. First, elder responses go largely unchecked, since teachers do not have time to go through all the discourse. Thus, it is possible that elders could tell students erroneous stories (historically inaccurate, racist, etc.) that go unchallenged. An open forum allows elders to read and comment on one another's statements – a more self-regulating environment.

Secondly, elders' answers to student questions varied greatly in quality. Some wrote great stories, and others did not respond at all. In the closed environment, if students do not get a response from their elder, they have no data to use in their project. In a discussion where all users can see the discourse, many elders can respond to student questions and pick up where less reliable elders leave off. Open Mentoring [16] supports this line of thought.

Increased artifact visibility. In our pilot work, elders felt somewhat out of the loop because, although they shared their life stories with students, they could not see the artifacts students created from them. Palaver Tree needs to make student projects more visible.

Helping teachers find elders. In our second pilot study, the teacher went through the 70+ listings in our elder database and selected elders to work with her class. This was time consuming. In addition, some teachers had requirements of elders beyond historical knowledge or storytelling ability. For instance, some teachers wanted to be sure that elders used proper grammar and spelling. Providing a better way for teachers to traverse this large listing is essential.

Supporting different schedules. Our pilot work showed that students and elders have very different schedules. While we would certainly like to have them online at the same time, this is unlikely to happen often. Asynchronous communication must to be at the core of our design.

Right-sized messages. Some elders in our pilot work wrote many pages in response to one question. Due to classroom time constraints, longer messages went unread even though the stories they told were often remarkable. Palaver Tree needs to encourage elders to self-edit, but also assure they feel that their contributions are valued.

Software that works in today's world. The final design issue is taken from an observation of the state of the educational technology research community. There are essentially two kinds of educational technology projects:

- Real-world projects aim to work within the constraints of users in today's world. Such projects are intended to impact current classrooms, and work well with technology available there.
- Future-thinking projects design for technology that will be available in the future. A benefit of this approach is that design is not constrained by current technology.

The work described here falls firmly into the former category. One of the primary impacts of this decision is the exclusion of broadband media types. While voice and video might be useful for doing online oral history, nearly all the elders who participated in our pilot work are on dialup connections. Even if they had microphones and cameras connected to their computers, it would be difficult for them to stream those media to kids. Instead, our software begins with a baseline technology – rich text. On top of that, we are providing an interface for elders to supply personal photographs that detail their experiences.

THE DESIGN OF PALAVER TREE ONLINE

We have employed the lessons learned from our pilot work extensively in designing the Palaver Tree community. The software is a client/server application written in Borland Delphi. The client application runs under Windows and provides the interface to our community.

Palaver Tree is focused on providing a richer environment for teacher-scaffolded kid-elder discourse. Specifically, Palaver Tree provides tools to support teachers in recruiting elders and managing their classes online. We also aim to provide a place where elders feel comfortable sharing their stories and personal photos. Finally, Palaver Tree aims to be a place where students can take elders' stories and build meaningful artifacts based on them.

An Interaction Model for Online Oral History

Palaver Tree is designed to scaffold a complex social process. Thus, we have developed an extension of our prior interaction model. (Points indicated with an * are software-scaffolded.)

1. Recruiting – teacher recruits elders *
2. Background – students read literature from the standard curriculum
3. Brainstorming – kids brainstorm questions based on their reading & send them to elders *
4. Elders Reply – elders respond with answers, stories, photos, cartoons *
5. Going Deeper – students ask deeper questions based on elder replies (repeat from step 4 as necessary) *
6. PalaverStories – kids build artifacts based on elder responses *

[2] Software scaffolding aids users in achieving a process or goal that would be difficult or impossible without the support [9].

Figure 1: Elder Profile

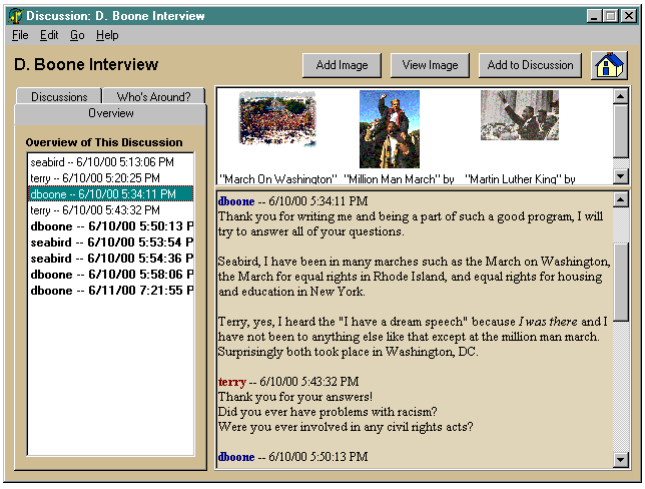

Figure 2: Anchored Discussion

7. Feedback – elders respond to PalaverStories *
8. Revision – students revise their PalaverStories based on elder feedback (repeat from step 7 as necessary) *
9. Finalization – PalaverStories are finalized *

Community Components

The client interface has four main components: Profiles, Discussion Space, PalaverStories, and Home Screens. These are designed to carry through our interaction model and address issues raised by our pilot work.

Profiles

Kids and elders in our pilot work felt they did not have enough information about those they were talking to. The lack of background information on elders is especially problematic, as kids are researching their life stories. Profiles address this by providing background information on community members (see Figure 1). Upon joining the community, users are asked for personal information – name, age, location, and the like. They may provide a photo, a longer description, and an indication of the types of history they are interested in discussing. There is also a clear indication of the user's role: kid, elder, or teacher.

The safety of the children using our software is a concern here. While online communities comprised of adults often ask users to reveal a great deal about themselves [3], online communities for children are quite the opposite [1, 2]. Since Palaver Tree brings together adults and children, different standards must be applied to what they enter in their profiles. Specifically, students are limited in the information they can enter about themselves, and instructed never to give their real name or address. Instead of a photo, kids choose from a palette of cartoon faces.

On the other hand, elders are encouraged to enter as much background information as possible. Of particular importance is a field called "Historical Interests." In our pilot work, we found that teachers had trouble filtering through the 70+ profiles in our elder database to select people to work with their classes. Our solution to this problem is to have elders self-categorize. Elders are asked to detail what pieces of history they are interested in discussing with kids. Teachers may then query against this field to find elders that are interested in the same history they will cover.

Discussion Space

The Palaver Tree discussion space is where the majority of communication in the community takes place (see Figure 2). One of the core lessons learned in our pilot work is that kids and elders have very different life rhythms. The discussion environment needs to make the most of times when kids and elders are online at the same time, but not require it. Thus, we have designed our software to provide the immediacy of chat (synchronous) with the robustness of newsgroup conversation (asynchronous), in a way similar to Babble [6]. When users post to a discussion, everyone in that discussion sees it immediately. However, the discussion is saved, so users may stop by at any time in the future and catch up on the discussion. The "Overview" side-panel allows users to track which postings they have and have not seen, and click to scroll the full text on-screen – a focus + context technique [7].

Context is an important part of discussion – knowing whom you are talking to and why. Our pilot work revealed that this context was sorely missed in the e-mail interaction. The Palaver Tree discussion space provides context in a number of ways. First, when the discussion is created, a dialog box appears that allows for the entry of the title of the discussion as well as a longer description. This description provides a more detailed reminder of the discussion's purpose.

Secondly, every posting in the discussion space has the poster's username printed just above it. This name is color-coded to indicate if the user is an elder (maroon), kid (blue), or teacher (green). We believe this will aid users in immediately identifying the sort of person they are

conversing with in this more open discussion space. Clicking on a user's name brings up their profile. In addition, a list of the users in a particular discussion and in the discussion space as a whole are displayed under the "Who's Around?" tab. The list is color-coded according to user type as well.

A final piece of context provided in the discussion space is attached media. Elders provide photos to illustrate their life stories. Students build PalaverStories (detailed below), to illustrate what they have learned from elders and share elders' stories with the world. Both of these media are attached to discussions and serve as "anchors," around which discussion revolves (more on this later).

The time kids spend at computers is limited and elders sometimes shared stories that were too long for students to read through. We look to remedy this by providing a visual affordance when users are entering postings. The posting dialog box is just large enough to hold an average-sized paragraph. Of course, users can type beyond the end of this box (a scroll bar appears), but it feels more natural to be able to see all your text at once – a soft limit.

Palaver Tree aims to meaningfully incorporate other media into textual discussions by taking a step back from the trend of embedding graphics in text. Soloway finds that, when graphics are imbedded in text, the interface feels like a canvas rather than a document and questions: "How many people feel comfortable writing on a canvas?"[19] Palaver Tree takes this design suggestion to heart by decoupling discussion and other media.

A second reason for decoupling media and text is anchored collaboration. An anchor is an artifact that serves as the center of a discussion – a reminder to users about their focus as they talk. Anchors have been shown to lengthen discussions significantly [10]. In Palaver Tree, elder and student-provided media are the anchors for discussion. Photos and PalaverStories are posted alongside discussion, and are easily referenced by discussion contributors. Clicking the thumbnails brings a more detailed version.

PalaverStories

As an adherent to the constructionist philosophy [17], artifacts produced by learners are of primary importance. By working on personally meaningful artifacts, learners gain motivation and are able to make their thoughts more concrete. By making those thoughts manifest, others can offer feedback and help the learner refine their thinking.

In Palaver Tree, artifacts are called PalaverStories (see Figure 3). Students construct PalaverStories based on what they have learned from elders. The features incorporated into the PalaverStory interface are based on our analysis of the projects students did in our pilot work and feedback from teachers. Additional inspiration came from the "Downtown Beaufort as Classroom" work done at Lady's Island Middle School in North Carolina. There, students researched the history of local buildings and reported their findings, alongside photos and hand-drawn graphics.

PalaverStory repurposes this design for oral history rather than city history, and extends it by moving it online. This allows kids to edit their part in the online oral history tapestry directly, and places their creations online instantly so elders can give direct feedback. The PalaverStory interface places a painting area on the left and a rich text area on the right. Clicking in either of these areas reveals a set of tools for working on that type of media. Everything in the community may be leveraged in PalverStories. Students may copy elder stories from discussions, elder-provided photos, as well as profile text.

PalaverStories have three states:

- Started – the kid has begun work but is not yet ready for feedback. Only the teacher and other students can see the PalaverStory at this time.
- Requesting Feedback – the PalaverStory is visible to elders and their feedback is elicited.
- Finished – the PalaverStory is complete and no more changes will be made. Congratulations are welcome, but there is no more time to work on the artifact.

The idea of creating for an audience is an important tenet of constructionism. An audience provides a social incentive for kids to do quality work and the audience can also provide feedback on the work itself [2]. In Palaver Tree, this audience is the elders since, after all, the kids are writing about their life stories. When PalaverStories move into the "Requesting Feedback" stage, a discussion is created and elders offer their feedback. This is intended to specifically address the "black box" issue identified in our pilot work and by others [15], that is, the lack of visibility of student work in many online kid-adult relationships.

Home Screens

As we designed the Palaver Tree community, the need for Profiles, Discussion Space, and PalaverStories were largely derived from our pilot work. However, a major challenge remained: How do members of the community know their roles? How do we help them support one another? The Home Screen feature of Palaver Tree Online is the core scaffold for the roles elders, kids, and teachers play (see Figure 4).

Egan [4] suggests the development of different interfaces for if "users of the same system naturally fall into a few strongly defined groups." While we have not designed entirely different interfaces for each user type, we have created different Home Screens that scaffold the roles of each user type. They provide a first point of contact when members first arrive, and a place that users can come back to when they feel lost or are not sure what to do next.

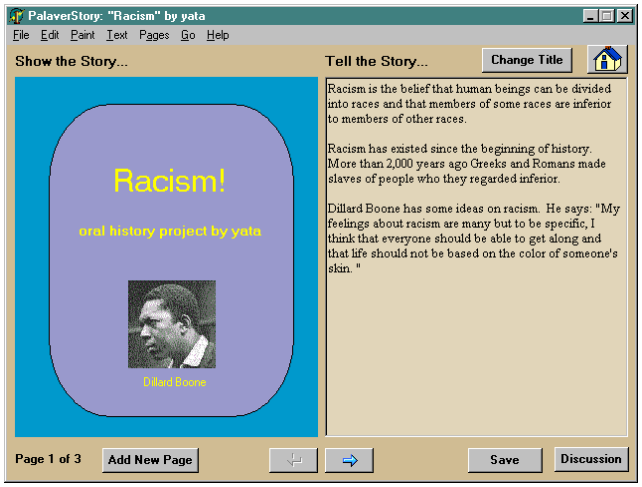

Figure 3: PalaverStory

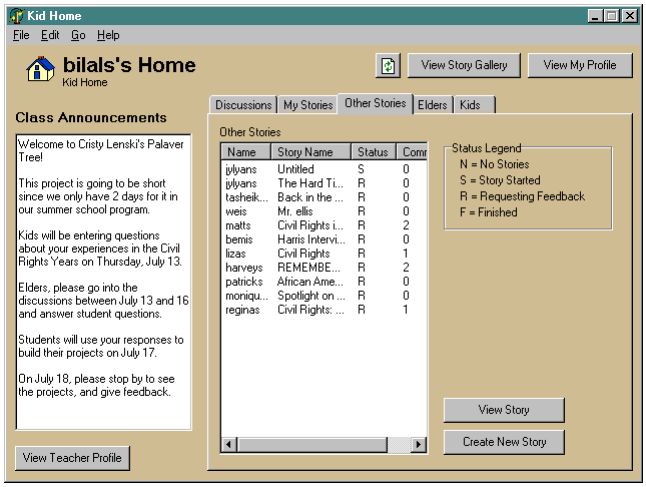

Figure 4: Kid Home Screen

For example, the Kid Home Screen features a list of discussions, an indication of which discussions the user has contributed to, and their PalaverStories within the community. A listing of other students' PalaverStories is also available, so kids can see the progress others have made – providing a social incentive for kids to create.

Elders adopt a class and work with them, so the Elder Home Screen provides elders access to all the discussions for the class as well as all the PalaverStories that have requested feedback. As new PalaverStories become available for elder feedback, they are highlighted.

Teachers need to monitor the progress of elders and their students. Thus, the Teacher Home Screen provides an overview of student and elder contributions. In addition, the elder recruiting system allows them to search the elder database by age, sex, race, and historical interests. All elder profiles are available for teacher perusal.

Although there are important differences between these interfaces, we have tried to keep them consistent wherever possible. For example, each Home Screen has an area on the left called "Announcements." The Teacher Home Screen allows teachers to post an announcement here that everyone in the class will see. This announcement provides a common point of reference for kids and elders as they work together. In this way, users are not only made aware of their role, but also the roles of others.

FORMATIVE EVALUATION

We tested Palaver Tree Online with a local summer camp class in order to get early feedback on the usability of our design. Two classes (50 students total) participated for five days in this informal evaluation. We recruited 11 elders to discuss their experiences in the Civil Rights Years with the kids. Kids worked in groups of 4-5.

On the first day (Wednesday), kids brainstormed questions about the Civil Rights years. On Thursday, kids got an introduction to the software, read through prior e-mail discussions, and entered their questions. Elders responded to student questions over the next three days (weekend). Kids returned Monday, read through the responses, and created PalaverStories based on them. On Tuesday and Wednesday elders offered feedback on the kids' work.

We did extensive observation and note taking while the software was in use. Oral feedback from both students and teacher was solicited. We got elder feedback via e-mail.

Teachers, elders, and kids generally found the software easy to use. Scaffolded by their home screens, students were making their first contributions to the community within five minutes, and the teacher was able to quickly change her announcement to the class. Students were particularly excited by the photos provided by some of the elders in their profiles, and were able to copy them into their PalaverStories. Elders reported that their Home Screen aided them in finding places to contribute, both in answering kid questions and responding to PalaverStories.

The evaluation uncovered a few user interface difficulties. Perhaps the most important issue for us to address is the coordination between Discussions and PalaverStories. Home Screens allow access to each of these individually, but often elders need to view the details of a PalaverStory while commenting on it. Students, as well, need to be able to view discussion while building their PalaverStories. This is currently possible, but it involves moving around windows. We want to make these tasks easier.

FUTURE WORK

Community overview. Currently, a system administrator must copy prior discussions in order for them to be available to new classes. We hope to encourage exploration and allow interactions between classes by providing an overview that allows access to all classes.

Enhanced elder recruiting. Palaver Tree Online now supports searching the elder database on numerous characteristics. However, teachers must still manually send e-mail to ask elders to work with their classes. A future

version will further automate the recruiting process by sending form e-mails to elders that teachers want to recruit, and allow elders to easily accept or decline.

Ratings. Elder responses to kids vary greatly in quality. Allowing teachers to rate elders' interactions with their classrooms provides not only a way for future teachers to see which elders are reliable, but also provides a badge of honor for elders who are well regarded. EBay has a similar reputation system [12].

Another way that ratings might help build community is through the rating of discussion posts and PalaverStories. All members of the community could be asked to pick out items that they find to be high quality, and those items given a place of prominence within the community.

Finally, Palaver Tree will be released in early 2001 and an in-depth study of its use in classrooms will be conducted.

CONCLUSION

As more people in all sectors of society come online, it is important to consider how we might help these diverse stakeholders work together. This paper presents a case study of the design of one such community – a community that scaffolds kids and elders working together to share historical experiences. We have shown both a specific methodology for doing online oral history and a set of more general design considerations for integrating online outsiders into classroom environments.

We believe this work shows the value of prototyping with existing technology. Had we forged ahead with design before understanding the needs of our users as they work together online, many of the issues identified here might have been overlooked. Understanding the issues ahead of time has the potential to prevent costly software rewrites.

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