

What Do Kids Learn from Adults Online?

Examining Student-Elder Discourse in Palaver Tree

Jason B. Ellis & Amy S. Bruckman

Georgia Institute of Technology
{jellis, asb}@cc.gatech.edu

ABSTRACT

The Internet has made it possible to incorporate adult mentors in the classroom in ways that it would have been difficult or impossible to do previously. As we move forward with such projects, it is important for us to consider what these adults contribute to the learning process. Palaver Tree Online is an online community that supports kids interviewing elders to build up a shared database of oral history. In this paper, we use two case studies of kid-elder discourse in Palaver Tree to illustrate what students learn from online adults. In addition, we propose a new role for such adults in scaffolding students having difficulty. Finally, we offer a more general classification of the types of questions kids and adults have fruitfully explored together in Palaver Tree.

Keywords

Online community, oral history, children, adults, elders

INTRODUCTION

Oral history provides a way for students to learn history from people who have actually lived through the events. Projects like Foxfire (Wigginton, 1985) have shown that oral history can provide opportunities for deep learning by connecting students with real people who have stories to tell. It is our hypothesis that students can gain a new perspective on history through these kinds of interviews with elders. Certainly, many elders have life stories to share. However what specifically students take away from such discussions with elders is unclear.

Palaver Tree Online is a constructionist (Papert, 1991) online community aimed at exploring this issue. In Palaver Tree Online, kids interview elders and use what they learned to create online artifacts that share the stories with the world. Through two case studies, this paper explores evidence of learning in Palaver Tree Online during its use in a middle school classroom during the 2000-2001 school year. We present a more successful case followed by a less successful one and suggest a new role for elders in scaffolding the teacher in helping less productive students improve their work. Finally, in an effort to generalize the sorts of knowledge students typically acquire from online adults, we classify the types of questions kids and elders have fruitfully explored together.

RELATED WORK

The CoVis Mentor Database (O'Neill, 1998) connects kids with scientists who offer guidance as the students work through science projects. Through working with adults online, students learn about scientific practice and get specific advice on their projects. O'Neill's Telementoring Guidebook (O'Neill, Abeygunawardena, Perris, & Puna, 2000) offers several case studies which explore the roles of adults in supporting the teacher. In particular, he noted that when the adults had a strong understanding of the specific goals of the teacher, their interactions with students were much more successful.

One Sky, Many Voices (OSMV) (Songer, 1996) is an online community designed to scaffold students exploring atmospheric phenomena by connecting them with scientists and other students. Participating students learn about a specific local atmospheric phenomenon in great detail and share that knowledge worldwide. While students sharing with other students is emphasized, scientists serve as resources by answering factual and methodological questions. An OSMV staff member monitors each discussion in order to assure the appropriateness of messages to the topic at hand (Lee & Songer, 1999).

PALAVAR TREE ONLINE

A Palaver tree (Land, 1992) is a West African tree that serves as the center of a village. It is a place where elders come to share their life stories and a place where the community comes to listen. Our aim is to create an online space that honors this tradition – a place where kids can hear history from primary sources.

The design of Palaver Tree Online (PTO) is based on three years of work in classrooms. We started our work in the 1997-1998 school year, with a study of students using e-mail to share stories with World War II veterans. In the 1998-1999 school year, we did a more in-depth study looking at students sharing stories with older African Americans about the Civil Rights Years (Ellis, Bruckman, & Satterwhite, 1999).

One of the most important lessons we learned in this early work with e-mail is that we are scaffolding a complex social process that involves students, teachers, and elders. Teachers need a way to recruit elders to work with their classes and manage their students online. The environment needs to provide a comfortable place for elders to share their stories and other personal information online. Finally, we need to support kids taking the stories they hear from elders and creating online artifacts based on them. We call these artifacts PalaverStories.

In addition, we developed an interaction model that supports online kid-elder discourse:

1. **Recruiting** - teacher recruits elders from the Palaver Tree Online elder database
2. **Background** - students read literature from the standard curriculum and elder profiles
3. **Brainstorming** - kids brainstorm questions based on their reading and 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 online artifacts based on elder responses
7. **Feedback** - elders and kids respond to PalaverStories
8. **Revision** - students revise their PalaverStories based on feedback (repeat from step 7 as necessary)
9. **Finalization** - PalaverStories are finalized

We used these and other lessons learned from our e-mail studies to design PTO – a client interface and server infrastructure that aims to help the process of online oral history go more smoothly for all involved. The software helps carry through our interaction model and supports the roles of kids, teachers, and elders along the way.

PTO has four primary components: *Profiles* that give background on elders and *Discussion Space* that provides a place for teacher-scaffolded kid-elder discourse. Palaver Tree also features the *PalaverStory* artifact creation tool and *Home Screens* that scaffold the roles of kids, teachers, and elders in the community. (See figures 1-4.)



Figures 1-4 (left to right): Elder Profile, Discussion Space, PalaverStory, and Kid Home Screen.

By moving student projects online, this design attempts to reduce the “black box” problem identified in our early work and by others (O’Neill & Gomez, 1998), that is, the lack of visibility of student work in many online kid-adult relationships. In addition, our email work showed that the quality of elder responses varied – some wrote wonderful responses and others did not respond at all. Palaver Tree Online makes all kid-elder discourse visible to everyone. Thus, students are able to participate in discussions with more responsive elders and leverage those stories in their work. Open Mentoring (O’Neill & Scardamalia, 2000) takes a similar approach. For more on the design of Palaver Tree Online, see the Proceedings of CHI 2001 (Ellis & Bruckman, 2001).

CASE STUDIES

We studied the use of Palaver Tree Online in one 8th grade Georgia History class over the course of six weeks. There were 21 students in the class and they worked in groups of two, with one group of one. Students visited the computer lab once or twice per week over the course of six weeks. Each visit lasted one hour. We did extensive classroom observation, pre and post interviews with the kids and teacher, a student focus group, and student and elder surveys. We did post interviews with several elders as well.

Interaction Overview

Before getting started with PTO, students were assigned to read the Civil Rights chapter in their Georgia history textbook (London, 1999). They then spent a day in class brainstorming questions for elders. The first day in the

lab, students reviewed discussions and PalaverStories from prior classes. The second day, each group of students was assigned an elder to interview, read the elder's profile, and posted initial questions for the elder.

Interviews consisted of a question and answer session between one elder and a group of kids over the course of two weeks (four sessions). After this, kids began work on their PalaverStories while many continued their discussions with elders for an additional two weeks (four sessions). Finally, each group made their projects available for feedback from elders and other kids. Feedback occurs in an anchored discussion (Guzdial, 1997) that has the group's project as its focus. Kids spent the next two sessions giving each other feedback and reading the feedback they received from elders. A few groups made revisions to their PalaverStories based on elder feedback.

Case 1: More Successful Case

Elder Interview

Sandra (using the pseudonym sandaroni) and Mary (tinkerbell) (all names and pseudonyms in this paper have been changed) started off by asking questions based on their elder's profile. Over the course of the first hour, they made four separate postings. First, Mary asked a number of questions asking about the elder's experiences, noting that the elder had little experience with racial strife.

tinkerbell -- 4/13/2001 11:27:19 AM

hi! there are a lot of questions that i have, i think, but first i was going to ask you if you were scared, because i know i would be. I also was curious to know if you could point out any particular events that especially affected you.

tinkerbell -- 4/13/2001 11:30:06 AM

you also mentioned that you didn't have any first hand experiences with the racialism, (?) but weren't there any events at school that happened to you, since you also said you lived in an all white suburb? were your parents angry about everything going on? what was going on that you read about in the newspapers and saw on TV?

We indicated to the students that they should try to ask fewer, deeper questions but they were so excited to have a real human to answer their questions that a number went a bit overboard and asked many initial questions. The elders, however, were quite receptive even when asked numerous questions at once.

ireed (Lisa Reed) -- 4/17/2001 6:16:57 PM

Hello tinkerbell! I wouldn't say that I was actually afraid; but I would say that I was cautious and wary. That means that I watched the racists carefully and I was aware of everything that they did. I remember a lot of the ugly, painful words they used to describe my color and my hair.

There were sit-ins and demonstrations everywhere in the south. The news media showing people in the south being attacked by dogs and firehoses really angered me. I felt so badly for them [...] And I knew that they understood they had to withstand that pain so that the world would see what it was really like being black in America. I remember my parents discussing the events; they talked about joining the march to D.C., but I know they didn't go.

ireed (Lisa Reed) -- 4/17/2001 6:34:20 PM

Hi Sandaroni! My father was born and raised in Georgia; he moved to Pennsylvania when he was in his late teens. He refused to travel to the south. We only attended family reunions that were held in the north. I remember him being angered and outraged by the events being shown on TV. My mother never spoke to any of the children about the events, but I overheard her talking to my father about participating in the march on Washington D.C..

Yes we were discriminated against; and no, the whites did not accept us. I had no children to play with, unless my cousins came to visit or we went visiting. It was very difficult being black in an all white community. I was very lonely. And yes, I was very angry with the white people for treating me in a way that I considered unfair. By the time I got to high school I developed a friendship with a white girl, we were very close. [...] When I was in grade school, I would wish I was white just so that the other children would play with me. Since then I have not wished I was white. [...] And I know for a fact that the children did not play with me because "they" didn't want to play with me. They didn't play with me because their parents told them not to. [...]

The story told in the last paragraph above serves as a foundation for the PalaverStory they ultimately create. The students, however, have not decided what their topic would be quite yet. They asked numerous follow-up questions.

tinkerbell -- 4/18/2001 11:41:39 AM

That is really really sad... why didn't your parents move? Did they know about your situation? (having no friends and being discriminated against.) I know that the term "marches" is probably pretty self explanatory but I would really like to know more about them. What were they, as in, what went on besides marching- protests?

Recently I read the book The Glory Field and in it, they mentioned demonstrations and sit-ins but I am really confused about what they really are. I think I have an idea about sit-ins but I am very very confused about demonstrations. [...] Did

you really understand everything that was going on? In many books that I've read, it seems like the children are so naive and that they have no idea about what is going on. If things were really like that, could you please try to explain why? [...]

The questions asked here – How were marches organized? What exactly were sit-ins and demonstrations? – point at a what has turned out to be a major contribution of the elders. While textbooks often offer more generalized renditions of history, elders can answer the specific and more detail-oriented questions that students have.


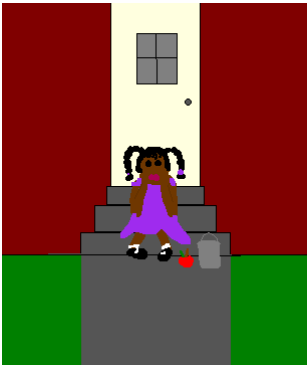
Ireed (Lisa Reed) -- 4/19/2001 5:52:42 PM

Hi tinkerbelle. No my parents did not consider moving, especially not after they basically had to fight to be able to buy their home in that town. Yes they knew about the racial situation, they were going through the same thing as well.

Articles were placed in community newspapers whenever a "march" was being organized. These articles apprised us of when where it would take place and who was organizing it. Bus loads of people from different churches, cities and states would arrive at the march site. Some people would sign up for key (up front) positions knowing that they would receive most of the brutalities. These people were trained before the march to remain calm. They were also trained how to fall and to curl the body to reduce the impact of the blows. These protest marches were supposed to be peaceful demonstrations (and many were). This is how the march to D.C. was organized. [...] I was a child then, I'm sure I understood very little. I didn't understand racism then, but I do now; racism is based on fear and misunderstanding.

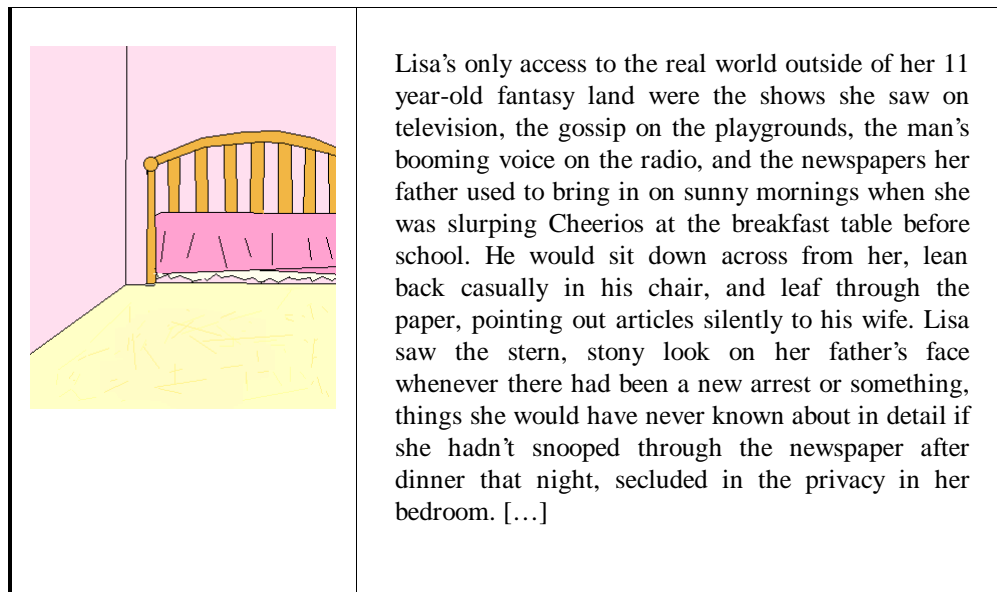
PalaverStory

Taking what they learned from their elder, Sandra and Mary created a PalaverStory where they placed themselves in the person of their elder, incorporating pieces of her life story into their fictional account. As Sandra put it: "Some of it was fiction, but it was based on what she was talking about how she had to sneak in to see the news or read the newspaper. [Her parents] didn't want her to see what was happening."

SHOW THE STORY...	TELL THE STORY...
	<p>Around the time of great discrimination and a division between races, a little girl named Lisa was caught in the middle. She had skin the color of thick cocoa and eyes like glossy marbles, unlike the vanilla colored children living around her.</p> <p>It turns out that sometimes chocolate is richer than vanilla, as this young girl found out from the actions of her tormentors.</p> <p>Lisa lived with her family in a predominantly vanilla neighborhood. Every day she had to endure the taunts and teases of the other children; after all, she was one of the only chocolate kids around.</p>
	<p>She felt alone, very alone. Every day she sat by herself at lunch and ate while she watched the other kids talk and play. Being chocolate was not as easy then as it is nowadays. Lisa had only one friend, and that was a little white girl with blond braids that dangled from either side of her pale head. She and Lisa looked so different, but this girl helped to teach Lisa the things her own parents liked to avoid, that it doesn't matter what color you are, because Lisa and this little girl looked the same inside.</p> <p>Little Lisa could only watch her family worry over matters that she had yet to understand. Her parents would not explain the great protests. [...]</p>

This page establishes the context for the story, using information from the interview. In particular, the group discusses the racial makeup of the neighborhood the elder lived in.

Here, they pull in the fact that the elder had few friends growing up in an all-white neighborhood and had only one white friend. It also begins to get at the curiosity the elder had about what was going on since her parents tried to hide the racial tension from her.



This fleshes out the "fantasy land" of playground discussions and snippets from the newspaper and her parents that the elder picked up.

It dramatizes the elder's experiences in a way that shows synthesis.

(The final two pages were omitted in the interest of space.)

Feedback

Once the PalaverStory was complete, Sandra and Mary made it available for feedback and a number of elders and students commented on it over the following week. The majority of the comments for all PalaverStories were positive and few suggestions for improvement were offered. For instance, the elder Sandra and Mary interviewed responded with the following message:

ireed (Lisa Reed) -- 5/4/2001 10:52:54 AM

Tinkerbell - I am QUITE impressed! It seems there's not only a writer but an artist in you. Perhaps you would consider writing children's books. The story was great! Well done! Thank you for telling my story so eloquently.

The project received a number of positive feedback messages. An important ownership issue arose in this final stage, however. Because of the way that PalaverStories are saved, only one student's name is listed with them. Sandra felt like she was not getting proper credit and politely let her elder know that it was a joint effort.

sandaroni -- 5/9/2001 11:51:22 AM

Ms. Reed, I also worked on the project, Tinkerbell and I spent 4 long days on the project and it turned out to be a success, I thank you for your feed back and I enjoyed writing this story. I hope that you will continue to tell more people your story and I am glad to have talked with you. Your information was all very interesting. I am glad you enjoyed our story.

The next version of PTO will include support for groups so all contributing students receive credit for their work.

Discussion

This is one of the more positive cases of kid-elder discourse in Palaver Tree Online. Sandra and Mary learned that not everyone had the same experience growing up in the Civil Rights Years. Specifically, they heard stories from an elder in a unique situation – living as the only black girl in an all white neighborhood. They integrated these stories into a narrative that showed their learning in a dramatic way.

Even though this group's experience was largely positive, several of problems arose. Sandra pointed out one difficulty in particular. She asked if there was a way to view her discussion with the elder at the same time as her PalaverStory. Since the computer screens at the school were so small (13 inches), the PalaverStory creation screen took up most of the real estate.

Work by Sweller and Chandler (Sweller & Chandler, 1994) has explored the so-called split-attention effect and its impact on cognitive load. They find that having to continuously navigate between different information sources, even when those sources are all contained on a single computer screen (Chandler, 1995), can have a detrimental effect on learning. In Palaver Tree Online, in order for students to get from their PalaverStory to their source material (Elder Interviews and Elder Profiles), they needed to navigate from PalaverStory back to their Home Screen, locate the appropriate Profile or Interview, and select it. This is too cognitively taxing.

In order to improve access to information students would use to create their PalaverStories, we introduced the PalaverStory Quick Bar in the next class session. This bar allowed one-click access to their elder's profile, their discussion with the elder, and their PalaverStory. In-class observations revealed that students made extensive use of the Quick Bar throughout the remainder of their work on their PalaverStories.

Case 2: Less Successful Case

Sam (using the pseudonym coolcat) and Jacob (ninjaben) also started off by reading their elder's profile as evidenced by their initial questions. However, their questions are more vague than those in Case 1.

coolcat -- 3/28/01 11:20:05 AM

Hello, this is Sunday and I am very interested in civil rights (and military history).

ninjaben -- 3/28/01 11:23:00 AM

What role in the civil rights movements did you play?

coolcat -- 3/28/01 11:24:48 AM

Did you ever take part in civil disobedience?

ninjaben -- 3/28/01 11:25:06 AM

or did u think that violence was the answer?

The elder does his best to respond with information that will be useful, given the broad nature of the questions.

barton (James Barton) -- 4/1/01 11:17:17 PM

I was a relatively young child during the late 50's, early 60's but my mother was the president of our local chapter of the NAACP. As such, she often took me with her to meetings, protests, marches and other civil disobedience activities. [...]

Getting back to our activities, there were also several "back room" meeting held in our home to attempt to work out mutually acceptable means of resolving numerous civil rights issues. As a child, I was fortunate enough to be allowed to sit in the room, witness and hear the conversations, negotiations and agreements.

The elder continues and describes his experiences in the military (as requested by the students), but that part of the discussion has more to do with the students' particular interest in the military than it does with the subject matter of their discussions with elders – civil rights.

In the questions that followed, it did not appear that the students had read his previous responses in detail. Instead of asking deeper questions based on what the elder told them, they simply asked more superficial ones.

ninjaben -- 4/13/01 11:27:21 AM

Did you ever meet any of the major(widely-known) role players that were in the civil rights movement.

coolcat -- 4/13/01 12:01:00 PM

How do you think the world would be today if it weren't for the civil rights activists?

ninjaben -- 4/18/01 11:49:49 AM

Do you know about the current situation in Cincinnati? If so, how do you feel about it?

Ninjaben's first question here hints that he may have read some of the elder's responses – specifically, where the elder talked about the "back room meetings" occurred at his home where he had the chance too meet important figures. The remaining questions, however, do not seem to relate at all to what the elder had said up to this point.

After answering a number of their other questions, the elder offered this answer to their question about a world without civil rights activists.

barton (James Barton) -- 4/19/01 11:44:15 PM

I have never thought about where we'd be if it weren't for he civil rights movement. But, since you've asked [:-)], I've given it some thought.

There would have been some social advancement for Blacks and other minorities in the United States but not to the extent that it is now. There definitely would be far less advancement in integration and desegregation. There would be a major waste of human talent and skill as discrimination would possibly be the cause of some of our better minds not getting the chance to put their God given talents, skills and abilities o their best use.

Now, I also believe that, with the strength, desires and sheer self motivation of our people, the rise of the civil rights movement was inevitable and was a rising tidal wave that could not be prevented. [...]

After this, the students asked an even more off-topic question.

coolcat -- 4/27/01 11:37:25 AM

A quick question: What kind of plane did you fly in when you were in the 101st? [...]



From this point, the conversation went more deeply into a discussion about the elder's experience in the military. This discussion dealt with specific vehicles he piloted and ranks he achieved. While interesting, there is little that would be useful in a PalaverStory about the Civil Rights Years.

Certainly, developing a good rapport with an elder may sometimes involve off-topic discussion. However, in this case, the students did little following up on previously asked questions and generally seemed more interested in discussing airplanes than the elder's civil rights experiences. This hurt them as they worked on their PalaverStory.

PalaverStory

Even though the students asked vague and questions that sometimes did not follow from previous discussion, their elder tried to answer what he thought they were asking and gave them a great deal of information about his life. Part of the problem in this group was that the students had very diverse interests. Jacob has a large interest in history and the Civil Rights Movement. Sam has a much stronger interest in military history.


The group's PalaverStory was similarly divided. It begins with a summary of some of the elders' experiences and then abruptly switches to talking about his later life in the military. While it could be argued that the fact that the elder was able to succeed in the military is testimony to the changes the Civil Rights struggle brought about, that link is not expressed in their work.

SHOW THE STORY...	TELL THE STORY...
	<p>James Barton grew up in the middle of the Civil Rights' movements of the 1960's. As a young boy his mother took him to her local NAACP meetings. She was the president of their local NAACP chapter. James Barton was forced to grow up in South Carolina where segregation and discrimination were heavily favored by the people. He was in many possible dangerous and hostile situations growing up as a young boy.</p>
	<p>But James Barton lived through the adversity, and probably benefitted from it. He met Cleveland Sellers, a leader in the South Nonviolent Coordinating Committee. While at Morehouse College he met Willie Ricks, another member of the SNCC. His uncle Sidney River Williams was instrumental in persuading Josphine Baker from leaving the entertainment business.</p>

Drawing on the elder's stories about attending marches and "back room" meetings held in his home.

The inclusion of an image of Malcolm X is somewhat confusing as they never discussed him with the elder.

While the group reviews some of the people the elder met, there is little indication that they recognize the significance of those people.

	<p>After completing 4 Years of ROTC(Reserve Officers Training Core) he joined the army. Once in the army he was put in the 101st as an Infantry Lieutenant. There he was the platoon leader of an 81mm mortar platoon. After that he was the leader of an infantry platoon. After leading the infantry platoon he had the dangerous job of leading an Jeep anti-tank platoon.</p>
	<p>After leading platoons for most of his career he decided to join the Army Flight School, there he rained on and learned to fly UH-1H Hueys, OH-58A and OH-58C and AH-1S cobra</p>

Here is where the project begins to diverge from the subject matter of the unit and delves more deeply into the elder's military experience.

The last page continues discussing the elder's military career, getting further away from the topic they started with.

Feedback

There was not as much feedback on this PalaverStory as the one in Case 1. Part of the reason is that it was late and not made available for feedback until a week after elders reviewed the other projects. Perhaps a second reason is that the elders and kids were being polite and trying not to make critical comments. One elder commented:

cassandras (Cassandra Simmons) -- 5/16/2001 6:38:56 AM

Mr. Barton certainly led an interesting life! But I would like to know more about his childhood. What did he learn when he went to the NAACP meetings with his mother? What were those "hostile" situations he was in when he was younger? And how did he feel about all this? Also, I liked that you put in a picture of Malcom X. Do you know why he is famous? Maybe that could be in your story too!

This kind of constructive criticism was rare in the PalaverStory feedback. Often, elders avoided saying anything negative in their responses. This group posted their work so late that there was no time for revision. In the future, we will encourage elders to offer more suggestions for improvement and allow students more time for revision.

Discussion

While the students' discussion with their elder was unfocused, the elder still provided a wealth of information on his experiences and the students put together a PalaverStory that reflected what the elder told them. The problem lies in the unfocused nature of their discussion that then led to an unfocused project.

As we observed these students while they worked on their discussion and then on their PalaverStory, there was a tension between Sam's personal interests (military information) and what was required in the project (civil rights information). As Jacob put it: "Sam went on to talk about him in the military because [...] that's all he ever does." They spent some time trying to find a way to appease both of their interests by asking the elder questions that combined the military and civil rights (asking if he was in the same division as the Tuskegee Airmen, for instance), but ultimately it ended up prompting the elder to provide relatively broad and shallow answers in comparison to the deeper questions students in Case 1 asked.

SEALING THE CRACKS: A NEW ROLE FOR ELDERS

The students in Case 1 were able to ask deeper initial and follow-up questions as well as synthesize more from the interview in their final project than those in Case 2. In Case 2, there are at least two directions the project could have gone that could have potentially produced more positive results. One option would be to allow the students to shift their project topic from civil rights to military history, since they seem to have more natural interest in that topic. If the teacher's primary goal is to get the students excited about history, then allowing them to shift topics

may make sense. However, it's important to give the students the guidance that enables them to explore their new topic at a deep rather than superficial level. On the other hand, if learning the curriculum material about civil rights is the teacher's primary goal, then the students need to be steered away from talking about airplanes and towards civil rights. Mid-way through this project, the teacher's intervention was needed.

Due to the volume of messages, however, the teacher was unable to review the discussions at the level of detail required to detect these breakdowns on a regular basis. As the teacher put it: "I thought both groups started out well. My mistake was thinking the kids would stick with the subject at hand!" She went on to explain that she wished she had seen the problem before the project stage. On the other hand, the elder simply tried to answer student questions to the best of his ability and may perhaps have felt that offering direction to the students would have been overstepping his bounds. The elder put it this way: "I think that they read my background data, see something that interests them and then off they go! [...] They don't always stay on topic." How, then, do we aid teachers and elders in detecting and assisting students that are having difficulty?

Although there are numerous interviews going on, each of these is home to one elder. Perhaps, then, there is a role for the elder in identifying problematic discourses and alerting the teacher – a role similar to the OSMV staff members that monitor discussions (see "Related Work" section). Once an elder detects a problem (like the elder in the Feedback section of Case 2), we could provide a mechanism for that elder to indicate the specific place in Palaver Tree that the teacher might want to pay special attention to. This would prompt the teacher to review the discussion and decide what (if any) intervention is necessary. Of course, for this scenario to work, elders must be keenly aware of what the students need to be doing in order to succeed, as O'Neill found (see "Related Work"). An advance briefing of the elders by the teacher might help clarify this. Having teachers clearly specify the aim of student work during each stage of the process via the PTO announcement feature would provide another reminder.

WHAT DO KIDS LEARN FROM ELDERS?

In Palaver Tree Online, we have seen students ask a number of different types of questions and synthesize elder replies in different ways. The most fruitful discussions were in the following categories:

Clarification – Questions about things that were not clear to them in books. For instance, Sandra asked: "Recently I read the book *The Glory Field* and in it, they mentioned demonstrations and sit-ins but I am really confused about what they really are." Elders help make these issues clearer for students through personal stories and examples.

Experience Sharing – Elders enjoyed sharing their life stories with kids. Often, elder profiles would indicate particular events that elders found important in their lives and students could use those as a scaffold to get at some of the interesting stories elders had to share. Even though some of the events elders discussed were well known, hearing an individual's perspective brought the point home. As Sandra put it, "I pretty much new everything that we talked about, but as I said I didn't actually know that it was actually true that things like that happened, but in talking to Ms. Reed she kind-of told me that it did happen..." Other times, students would hear stories that challenged their thinking. Here, Jacob describes a surprising discovery about his elder: "He didn't move up North. [...] He lived all around the South where it was really bad – which I wouldn't really expect. It kinda shocked me."

Off-the-Beaten-Path – Often, kids have questions that are too specific to be answered in a more general textbook. For instance, Sandra asked: "What did white people think of the marches?" This is a question that one does not often see addressed in textbooks.

Speculative – Sometimes students want to an adult's perspective on a what-if scenario. Sam asked a speculative question: "How do you think the world would be today if it weren't for the civil rights activists?" The elder responded with an extensive and thoughtful reply.

While the answers to these questions did not always make it into the student's PalaverStory, simply asking such a question indicates that the student has thought a great deal about the subject. In addition, their follow-up questions would often probe further, indicating deeper cognitive engagement. When students do take elder's responses to heart, the result is a PalaverStory like Sandra and Mary's. Their work not only shows the synthesis of numerous details of the elder's life, but the ability to extrapolate from that and develop a moving narrative.

CONCLUSION

Research in constructionist learning traditionally de-emphasizes the role of the teacher. The old constructionist cliché says that the teacher should be "the guide on the side, not the sage on the stage." But what is the role of that

“guide”? What is good constructionist teaching? For Sandra and Mary, little guidance was necessary. They were engaged and had a fairly successful learning experience (according to their teacher’s judgment – they received an A+) with little guidance. On the other hand, Jacob and Sam (who received a B) needed the help of that guide.

Ms. Anderson did not intervene for two reasons. First, the sheer volume of kid/elder discourse means she does not have enough time to read it all each class period. Second and perhaps more importantly she noted in an interview that she was deliberately taking a hands-off role: “It’s a tough line to walk – between giving too little help and being a nag. [...] With this kind of student-driven project, I don’t want too much control.” She is an innovative teacher who sees great value in a student-centered approach to learning.

How can we resolve this dilemma? We conclude that more research is needed into the fundamental nature of constructionist teaching. We need to better understand when and how teachers should intervene in CSCL environments. Teacher training and professional development needs to be refined to help them to walk the delicate line between letting students be in charge and letting them flounder without needed help. Since the teacher cannot be everywhere at once in a highly parallel CSCL environment, we also need to better understand the role of adult mentors. Mentors can help to alert teachers to situations where their intervention is needed. However, mentors need training in how to recognize when to alert the teacher, and easy mechanisms to do so.

The Internet has made it possible to incorporate adults in the classroom in ways that it would have been difficult or impossible to do previously. As we move forward with such projects, it is important for us to consider what these adults contribute to the learning process. Here, we have presented two case studies of students and adults working together online in order to illustrate what students might learn from online adults. In addition, we described a new role for elders in the learning process and presented general question types that have been fruitful for students to explore with elders. By connecting kids with adults eager to share their knowledge and encouraging students to explore interests in an appropriate framework, we believe educators can create important new learning experiences.

ACKNOWLEDGMENTS

We thank the teachers, kids and elders that have participated in this and previous studies of Palaver Tree Online. Generous financial support for this work is provided by Intel and IBM.

REFERENCES

- Chandler, P. (1995). Is Conventional Computer Instruction Ineffective for Learning?, *Proceedings of Australian Computers in Education Conference 1995*. Perth, Western Australia.
- Ellis, J. B., & Bruckman, A. S. (2001). Designing Palaver Tree Online: Supporting Social Roles in a Community of Oral History, *Proceedings of Computer-Human Interaction 2001* (pp. 474-481). Seattle, WA.
- Ellis, J. B., Bruckman, A. S., & Satterwhite, R. C. (1999). Children and Elders Sharing Stories: Lessons from Two Online Oral History Projects, *Proceedings of Computer-Supported Collaborative Learning 1999* (pp. 151-158). Stanford, CA.
- Guzdial, M. (1997). Information ecology of collaborations in educational settings: Influence of tool, *Proceedings of CSCL 97* (pp. 83-90). Toronto, Ontario, Canada.
- Land, M. (1992). Ivoirien Television, Willing Vector of Cultural Imperialism. *Howard Journal of Comm.*, 4(1&2), 10-27.
- Lee, S.-Y., & Songer, N. B. (1999). How Does Electronic Discourse Support Students’ Scientific Inquiry In An Internet-Enhanced Collaborative Learning Environment?, *Annual Meeting of the American Educational Research Association*.
- London, B. (1999). *Georgia: The History of an American State*. Montgomery, AL: Clairmont Press.
- O’Neill, D. K. (1998). *Engaging science practice through science practitioners: Design experiments in K-12 telementoring*. Unpublished doctoral dissertation, Northwestern University.
- O’Neill, D. K., Abeygunawardena, H., Perris, K., & Puna, Z. (2000). *The Telementor’s Guidebook: A field manual for supporting inquire on-line* (Final report of Office of Learning Technologies project #89116): Ontario Institute for Studies in Education, University of Toronto.
- O’Neill, D. K., & Gomez, L. M. (1998). Sustaining Mentoring Relationships On-line, *Proceedings of CSCW 98*. Seattle, WA.
- O’Neill, D. K., & Scardamalia, M. (2000). Mentoring in the Open: A Strategy for Supporting Human Development in the Knowledge Society, *Proceedings of ICLS 2000*. Ann Arbor, MI.
- Papert, S. (1991). Situating Constructionism. In I. Harel & S. Papert (Eds.), *Constructionism*. Norwood, NJ: Ablex Publishing.
- Songer, N. B. (1996). Exploring Learning Opportunities in Coordinated Network-Enhanced Classrooms: A Case of Kids as Global Scientists. *Journal of the Learning Sciences*, 5(4), 297-327.
- Sweller, J., & Chandler, P. (1994). Why is Some Material Difficult to Learn? *Cognition and Instruction*, 12(1), 185-233.
- Wigginton, E. (1985). *Sometimes a Shining Moment: The Foxfire Experience*. Garden City, NY: Anchor Books.