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## Promoting Digital Literacy: The De-mystifying Technology Workshop for Families

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## **Promoting Digital Literacy: The De-mystifying Technology Workshop for Families**

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### **Abstract**

Kenwood Elementary School's, in Champaign, Illinois, new concern is the technological literacy of its students in a society where exposure to technology can be limited to young students exposure in the public school system. Currently Kenwood is leading the way in making strides to introduce technology into the curriculum. As a group within the Graduate School of Library and Information Science's Community Informatics Studio class led by Dr. Wolske we decided to work with Kenwood in achieving their goal of technological literacy. Our guiding question throughout the project was "How can we build a relationship with Kenwood that would allow us to work towards their school motto of 'Technology, Literacy for Community'?" Throughout our time planning a Demystifying Technology Workshop for Families we relied on the guidance of many theorists to formulate a project that would allow us to build the sense of community while promoting technological literacy in a way that would empower the Kenwood community to take part in the existing discourse.

### **Introduction**

On December 7, 2013 the "Demystifying Technology Workshop" had its next iteration at Kenwood Elementary School in collaboration with Dr. Martin Wolske (Senior Research Scientist at the Graduate School of Library and Information Science [GSLIS]) and Community Informatics Studio (LIS 490ST) students Angie Stangl, Casey McCoy, Becky Ransberger and Kim Naples (GSLIS graduate students) and Samaa Haniya (College of Education PhD student). We also had various helpers from LIS 490ST, Kenwood administration and personnel, and a parent from the previous workshop. The workshop was one day long, from 9:00 a.m. to 2:00 p.m., with a half-hour lunch break and divided into two morning and afternoon sessions with various stations. In the morning we offered a Hardware and Network station where each family could choose

where to start, but by the end were able to explore each station. In the afternoon we offered a Software, Linux, Security and Etoys station where families could come and go as they pleased.

The goal of this Demystifying Technology Workshop was to bridge the home-school digital divide by inviting families into the school and distributing free computers to participants to help support student learning at home and meet the school's mission of "Technology, Literacy for Community."

### **Methodology**

Working at Kenwood Elementary School with our Community Informatics Studio team was a unique experience as our work was heavily influenced by multiple theorists and class discussions. Our initial research planning was highly influenced by Stoecker (2013) and his strategic planning process in achieving successful community change. He identifies four main phases associated with the project cycle: diagnosis, prescription, implementation and evaluation. Throughout the semester we tried to explore and work towards each of these different stages at Kenwood, but the research method we implemented the most was participatory action research (PAR) described by Stoecker and Eubanks (2011). Stoecker believes that researchers need to be involved in the community in order to better understand the community they are studying. To achieve community engagement, researchers need to also develop a genuine relationship with community partners and stakeholders by spending time talking and listening to them. Furthermore, researchers need to discuss and share alternative solutions with different people in the community. This will in turn build a mutual trusted relationship that benefits the project as well as the community. A great example of PAR to follow was Eubanks case study in New York YWCA to achieve social justice in information and communication technologies (ICT) for the women there.

Inspired by these theories, we spent a considerable amount of time engaged in our community. We volunteered at Kenwood on a regular basis and held onsite and virtual meetings with school administration and faculty. In addition, through the Community Informatics Studio desk critique model, we met with Dr. Wolske throughout the planning

process. These communications were very helpful for us to narrow down our ideas and choose the route of implementing future technology workshops.

The Community Informatics Studio curriculum is based on Brocato's studio-based learning (SBL) model, which is similar to John Dewey (1938) and Carol Kuhlthau's (2010) inquiry-guided learning approach in education. This model follows a continuous practice of analysis, iteration and critique by team members, fellow classmates, and various other stakeholders. These "desk critiques" are coupled with relevant readings and discussions to further students' work and personal reflections shared in weekly journals.

During the first stages of the desk critique, our team of five working with Kenwood was split into two sub-teams: one focused on integrating Etoys into the curriculum while the other concentrated on bridging the home-school divide. Our first desk critique noted these different interests and combined our roles into one cohesive team to build a stronger relationship with Kenwood students, parents, staff and administration. Before the next desk critique the majority of team members were able to volunteer weekly at Kenwood and meet periodically with our main partner contact, Todd Lash (Librarian/Media Specialist). The knowledge obtained during these meetings juxtaposed with our second desk critique created a pivotal turning point in our project when connecting our interests with the current stakeholders, ongoing projects and Kenwood's mission of "Technology, Literacy for Community" (TLC).

The original goal of the group seeking to bridge the home-school divide was to create a website with Etoys tutorials for parents. Etoys is a computer game that teaches players the basics of computer programming that Kenwood students use. Todd Lash brought to our attention the fact that not all students have computers with internet in their homes. Creating web-based tools would not be helpful for those students and their families. After learning that information, we decided putting computers in student's homes was a priority, which another Demystifying Technology Workshop would allow us to do. This time, however, we invited entire families to participate.

The group focusing on integrating Etoys into the curriculum felt overshadowed by the other key stakeholders already working with Kenwood to achieve that goal. Once our community partner's requested to host a technology workshop focusing on the students,

we decided to unite our two groups behind the organization of one Demystifying Technology Workshop for Families. Throughout this process we naturally followed the intended SBL model by starting with a broad idea, informing our opinions through fieldwork, narrowing down our goals, then repeating the process until our final product was completed.

Throughout the desk critique and designing the workshop, we kept specific theorists in mind. Kuhlthau's essay "Guided Inquiry: School Libraries in the 21<sup>st</sup> Century" showed us that students can learn by exploring. According to Kuhlthau, "The underlying concept [of inquiry-based learning] is considering a question or problem that prompts extensive investigation on the part of the student. In this sense, it is a research approach to learning (2010)." Through this idea, we decided that we did not need to lecture workshop participants. Instead, we sought to introduce families to different technological skills and then send them home with the computers to continue exploring on their own. Kuhlthau's theories also stressed the importance of being active participants rather than passive learners. We didn't want to be seen as teachers during the workshop, but fellow participants with just as much to learn.

Dewey's book, *Experience in Education*, taught us about popular education (1938). Just as the title says, Dewey values the experience of the student as a valuable part of learning. Dewey puts less importance on the teacher and more on the students themselves and the knowledge they already have. With that in mind, we wanted to create a workshop where the voices of our participants would be heard and appreciated.

By reading Freire (2012), we realized the importance of breaking down the "banking model" of education where ideas and facts are just deposited into students. Instead, we recognized the importance of reflection in the learning process. Freire also discusses the concept of "conscientization," which is the process of developing a critical awareness of one's social reality through reflection and action. It emphasized using education as a means of consciously shaping the person and the society. Following this theory, we wanted to present the computer as an accessible piece of technology that participants can manipulate to suit their needs. Therefore, during the workshop we sought to communicate that the computers were given not as charity, but as a request from Kenwood to become active participants in their child's education.

## **Implementation**

In order to make the implementation of the workshop go as smoothly as possible, we came together as a group to clarify the outcomes of the Demystifying Technology Workshop for Families. Ideally, this would have gone through our community partner as well, but due to lack of time this was completed by our group with Dr. Wolske's guidance. With that said, the outcomes were determined based on ongoing conversations with our community partners and our personal observations at Kenwood, resulting in an accurate portrayal of goals intended to be accomplished through the technology workshop.

One of the tools we used to help with this process was a logic model. As Stoecker suggests, it allowed us to "work backwards" and determine what we wanted to achieve with the workshop. By effectively using a logic model, we were able to discern which elements from previous workshops to include or disclude based on the needs of the Kenwood community. The short-term outcomes (bold) with contributing outputs from activities were:

### **Demystifying the computer**

- Disassembly/reassembly of computers
- Understanding Linux OS
- Network Basics

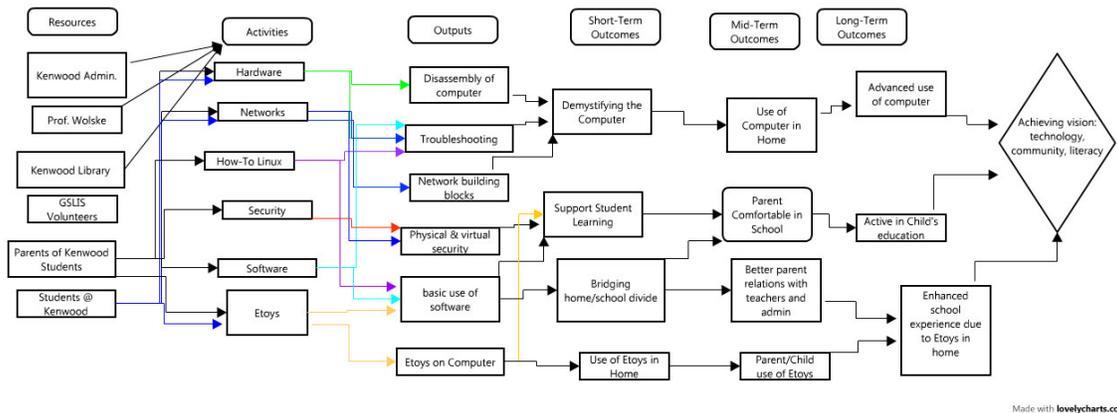
### **Support Student Learning**

- Increase comfort with Etoys
- More effectively meet ISTE NETS

### **Bridging Home-School Divide**

- Getting computers in homes
- Getting parents into school environment

Figure 1: Image of Logic Model:



Using Kuhlthau's (2010) theory of inquiry-based learning, we decided to bring in defunct towers for the participants to explore during the hardware station. We presented them with the task of taking the computer apart and putting it back together. As each family explored the inside of the computer, we tried to point out what specific things were and what they did. Additionally guided by Freire and Dewey, we encouraged the participants to share their knowledge of hardware with each other. Our goal was to dismantle the fear of the "no man's land," as one participant put it, that is the inside of the computer.

In finding ways to implement workshop activities that would reach our proposed outcomes, many of the theories we read as well as our own instructional experiences (or lack thereof) impacted the process. When striving to meet our outcome of supporting student learning, Dr. Wolske suggested aligning our activities and our evaluation with the ISTE NETS (<http://www.iste.org/standards/standards-for-students/nets-student-standards-2007>). It is similar in some ways the "Informing Communities: Sustaining Democracy in the Digital Age" by the Knight Commission (2009), but it is more focused on students. On the day of the workshop we continued the school's use of Etoys as a platform for computer skills such as learning to logon, troubleshoot a frozen screen,

navigate with a mouse and perform basic computer programming. At the workshop, we encouraged kids to show their parents these learned skills in order to promote collaborative exploration of technology.

In terms of bridging the home and school learning divide, we were very aware of how Eubanks offered real-life examples of the educational philosophies Dewey (1938) discusses. The main idea we applied most actively in the workshop, on a one-on-one basis as well as in our role as facilitators, was recognizing the expertise every individual brings. Going into the workshop, we knew that by helping meet the parents where they were at we could make them more comfortable in the school environment throughout the workshop. For instance, one of the families during the Network station was having difficulty “pinging” their neighbor. As facilitators of the session, we encouraged them to collaborate with their neighbors to see what was happening.

### **Reflection and Evaluation**

Following the SBL process as previously discussed, the structure of the workshop went through multiple iterations leading up to the actual implementation. When designing the workshop our biggest theoretical influences came from Virginia Eubanks and the Detroit Digital Justice Coalition (DDJC).

We have already discussed how Eubanks’ use of PAR at a New York YWCA influenced our own approach at Kenwood, but her social justice approach to bridging the digital divide was another major influence in the workshop structure. First, Eubanks breaks down the meaning of “digital divide” to look past the overly simplistic characterization of the “haves and have-nots” and to see how social inequalities perpetuate this technology divide. Jes Constantine, YWCA member, even renamed the digital divide as the “people divide”, arguing that the medium was irrelevant and that thoughtful participation, action, and collaboration are the only route to the openness and respect that make communication across difference possible (Eubanks, p. 39).” Secondly, Eubanks uses an intersectional feminist analysis of the “people divide” to question what social issues factor in technology use (or non-use). We must look at the race, gender and class issues and reflect on how these influence access, use and definition of technology to a specific community.

While adapting Eubanks' PAR and intersectional feminist theories in our own work, we decided to also adapt the DDJC's DiscoTech model. A DiscoTech, short for Discovering Technology, developed from a desire to create a community learning space promoting inquiry-based learning. The designing of a DiscoTech follows a basic process of creating a shared vision, building together, performing outreach, using current resources and reflecting. While there is a design structure, DiscoTechs are meant to be organic and flexible as to fit the needs of various communities. This model fits well with Eubanks' vision of collaborating with a community to achieve a goal determined by all stakeholders involved.

By using both Eubanks and DDJC's approaches to community engagement we designed our workshop as a DiscoTech by offering multiple technology stations in a split morning and afternoon session. The morning session was slightly more structured where we invited the families to start with hardware or networks, then switch so all had a chance to explore each station. The afternoon session more closely reflected a DiscoTech where we offered four stations (software, security, Linux operating system and Etoys) and families could choose which stations to visit and how long they stayed before moving to another. Leading up to the workshop we collaborated with Kenwood stakeholders throughout the DiscoTech process of creating a shared vision to reflecting on the workshop to ensure we accurately evaluated all community assets.

Our justification for this design stemmed from Eubanks experience at the YWCA where they defined what it means to be an "expert" by inviting women who traditionally served as participants to lead technology workshops. As a similar Demystifying Technology Workshop for Families was conducted earlier in the semester, Kenwood invited those parents back to serve as leaders for our workshop. One parent did return to participate in the second workshop and was able to share his previously obtained knowledge with other participants, while also actively seeking more information. Another direct example included our chosen language used during the workshop. At the end of the workshop families were able to take home the computers for personal use, but a lot of thought went behind how to share this information. By asking the families to take the computers off our hands and continue to explore in the homes we were able to connect

the goals of the workshop while encouraging families to use the computers to take an active role in their child's education.

By focusing on community development during the Demystifying Technology Workshop for Families we were able to go beyond just supplying the families with computers and work towards encouraging the exploration of the discourse surrounding Kenwood's TLC mission. As Stoecker said, it is vital to focus "on building the capacity of community residents to define their own issues, gather the resources to address those issues, and go to work on solving them (p. 49)." The Kenwood administration expressed a desire to continue forward with more technology workshops in order to bring even more families into the existing discourse. As the workshops continue on it would be ideal to have more input and help from those who have attended previous workshops.

Another important aspect of building the relationship with Kenwood was the one-on-one interactions. While at the workshop, a volunteer discussed with a father how a key workshop goal was to help reveal how as a community we can help inform one another. The volunteer stated that at the workshop we encouraged everyone to learn and seek out help from their neighbors at the stations they were at, and perhaps they could go home and realize that they could do the same with their next door neighbor. It was also important that they acted as that resource as well. If the community goes to one another for help, the bond and knowledge will only further develop from there.

It was also important that we were able to speak with the families about their needs and expectations for the workshop and technology. By having these discussions we were able to alter the workshop to fit their expectations and share that we held their interests at a high value. Stoecker explains that "it is very difficult to build community ownership of an issue that is really only important to the researcher (p. 38)." If the workshop only covered information that we perceived the families to want or need, it would not have been a success. Stoecker's method of asking the individuals in a community what problems they see is one that guided us when planning the workshop. By actively seeking out their opinions, and openly encouraging their input on how the school addresses technology, we hoped the individuals attending the workshop would realize the Kenwood community values and needs their input to move forward.

We conducted two evaluations, before and after the workshop, to determine families' expectations and actual learning outcomes from attending the workshop. As with the rest of our design process, these evaluations were also influenced by multiple class readings. According to Stoecker (2013), evaluation is a significant process to examine the project's effectiveness in achieving the intended goal and to determine its strengths and weaknesses. Furthermore, the Innovation Center (2005) provided useful techniques in how to evaluate a project such as: choosing criteria, questions, methods, and data analysis. We were able to implement these ideas into successful surveys, which provided important feedback for future technology workshops.

The received evaluations indicated improvements in all sections covered in the workshop. The largest improvement was seen in parents' use of EToys as it increased from 13% to 68%. Knowledge of internet security also seemed to have a high improvement that jumped from 38% to 95%. Next in Software, the improvement in parents' satisfaction of their skills jumped from 56% to 95%. Comfort levels in both Network and Internet Essentials seemed to have a moderate improvement. In Network, the percentage increased from 31% to 63%, while in Internet Essentials the percentage increased from 63% to 95%. Skills in Internet Resources showed the least improvement, but we can assume parents already had a high level of knowledge in this area prior to the workshop as the evaluation showed a slight increase from 81% to 89%. The survey also showed that parents were highly satisfied with the workshop's length and set-up and nearly 95% of parents would recommend this workshop for others.

Data from the open-ended questions showed parents' excitement and happiness working with Linux and Etoys. One parent said, "I was surprised to see that Linux is not just a command line OS. It seems less daunting than I had originally assumed it was." Another parent commented on Etoys saying, "Got to view how Etoys works and able to see it myself". On the other hand, parents indicated they wished to have learned more from the hardware section. One parent commented, "We would have preferred to have more information about what we saw inside the computer towers we disassembled... but it would have been nice to see what they were and what they did."

For future implementations of the workshop, all of the weaknesses need to be fully addressed to match parents' needs. It would be helpful to consider how different

families interact. It would be important to set the tone for the workshop early on in the day. For instance, we could better encourage parents to allow their students to do the driving. Another important aspect of the workshop was the handouts. They were handed out at key points during the sessions, but it was challenging for families to hang on to them. A possible solution would be having a bound copy of the handouts--like a “troubleshooting” or “demystifying technology” guide. From a technical standpoint, we also struggled to get the computers ready on time. For future workshops, it would be helpful to have the technology updated, ready to use, with passwords secured to the front. Additionally, in an effort to foster relationships between parents and teachers, in the future, an effort could be made to include teachers in the planning, handouts, or actual implementation of the workshop.

### **Conclusion**

In hosting the Demystifying Technology Workshop for Families it was important to us to build an environment that allowed for the families to understand that they were a crucial part in Kenwood’s goal of promoting the technological literacy of their students. In order to provide an environment that offered a place for everyone’s knowledge to be valued we relied on the works of many theorists to guide us. Overall, through the guidance of theory and a constant reflection, we offered a workshop that helped build a relationship with the Kenwood Community that offered an opportunity to emulate the motto of “Technology, Literacy for Community.” As the Workshop continues on we hope that it will be an opportunity to improve and innovate in order to fit the changing needs of Kenwood.

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