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**Incorporating Online Projects into K-12 Classrooms:  
The Odyssey from Beginners' Perspectives**

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**Incorporating Online Projects into K-12 Classrooms:  
The Odyssey from Beginners' Perspectives**

**by**

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**Dissertation**

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## **Dedication**

This dissertation is dedicated to my family and in loving memory of my father, James Q. Hargrave.

The support of my husband, John, and our two children, Dan and Sarah, during my studies and research was paramount in completing this pursuit of a Ph.D.—or as Sarah called it, "a Dr. I.T." Encouragement from my parents, Joan and Jim, and from my in-laws, Frank and Charlotte Williams, also helped to bolster me and keep me on target.

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**Incorporating Online Projects into K-12 Classrooms:  
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This constructivist inquiry study explored the perceptions that teachers had of the experience of integrating telecollaborative or telecooperative projects for the first time. The purpose of this study was to illuminate connections that might be drawn across participants in order to promote participation in online projects involving communication among partners—one of the least utilized types of online projects. The six Canadian and U.S. teacher participants shared their experiences of and insights into integrating projects into either elementary or middle school classroom curriculum using of one of six K-12 telecommunications organizations that offer online projects: 2Learn.ca's Collaborative Learning Project Center; the Electronic Emissary project; ePALS; Global SchooNet; KIDLINK's KIDPROJ project area; or Oz-TeacherNet.

Using constructivist inquiry strategies, a recursive process of data generation and analysis continued over a prolonged period of twelve months, revealing the experiences and perceptions depicted in each informant's case study. Interviews were conducted by telephone and e-mail, and other sources of data available online (e.g. student work, project descriptions, and logs of e-mail communication between project partners) helped to elucidate and describe participants' experiences. The strategies employed were data-driven and inductive as data analysis moved from simple observation and connections of general patterns to themes across cases.

Themes that emerged fell into one of three overarching categories. The first set of themes raised issues around ideas of online projects being integrated into the classroom. Issues included concerns about connecting projects to the curriculum, project design, and ways that projects mushroomed into more activities and subject areas than initially expected. The second set of themes centered upon issues about the benefits participants discovered while communicating with project partners. The final set of themes explored various influences upon project participation—both positive and negative. The findings suggest that there are several different avenues available for assisting teachers in their novice



attempts to integrate telecollaborative or telecooperative projects. Findings also suggest that teachers who are curriculum specialists—rather than technology specialists—should be encouraged to participate in online projects due to their expertise and knowledge in curricular areas. However, implications drawn from the study are not necessarily generalizable to other settings. Rather, a frame of reference is provided to promote drawing of inferences and transfer of these inferences so that readers can connect their meanings to the contexts with which they are familiar.

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## **Chapter 1-Introduction**

Most policy makers, corporate executives, practitioners, and parents assume that wiring schools, buying hardware and software, and distributing the equipment throughout will lead to abundant classroom use by teachers and students and improved teaching and learning. (Cuban, Kirkpatrick & Peck, 2001, p. 813)

Internet access in the classroom took a marked leap as we entered the new millennium. More schools have gained access (Becker, 1998; Office of Educational Technology [OET], 2000) and more funds have been earmarked to purchase the hardware and software necessary to get schools online (Zhao, 1998). Along with this rise in access comes a rise in expectations regarding use of the Internet (Cuban, Kirkpatrick & Peck, 2001; Fabry & Higgs, 1997; Office of Technology Assessment [OTA], 1995; Page, 1999; Sherry, 2000). Teachers are expected to demonstrate effective, productive use of the Internet and to integrate it into their daily lesson plans (Cuban, et al., 2001; National Council for Educational Statistics [NCES], 2000a; Zhao, 1998). Unfortunately, neither the funds allocated nor the expectations of productive use take into account the effects that instituting this change will cause (e.g. Becker, 1998), or the need for professional development and support (McKenzie, 2001; OET, 2000; OTA, 1995; Reilly, 1996; Ronnkvist, Dexter, & Anderson, 2000) to make it possible for teachers to achieve effective, productive use of the Internet.

When a teacher begins integrating the use of Internet into daily lessons, change becomes a factor in the success of this endeavor. This is because use of telecommunications activities in the classroom is an innovation—a new addition to the standard instructional methods that teachers currently use. Everett Rogers (1995) described an *innovation* as an idea “new to the individual” (p. 11). Innovations also include new methods or new ways of doing things. Even “[e]xperienced teachers quickly become novices when the classroom environment shifts dramatically, transforming tried-and-true strategies into ineffective approaches” (Sandholtz & Ringstaff, 1996, p. 282). Teachers interested in adapting their lessons to include telecommunications activities are faced with several innovations at one time (e.g. Berg, Benz, Lasley, & Raisch, 1998). Besides learning how to deal with the technical aspects of telecommunications (Dirks, 1997; Fabry & Higgs, 1997), teachers may also need to determine new ways to manage their classes, as well as new ways to teach (Berg, et al., 1998; Hawkins, 1996; Scheffler & Logan, 1999) when integrating online projects into existing curricula.

Online projects can involve more than simply *teleresearch*—researching information on the Web (i.e. going online only to retrieve information for a report or other in-class curricular purpose). The

activities that take place during *telecooperative* or *telecollaborative* projects involve interaction with others and have been categorized into three genres: “interpersonal exchanges, information collection and analysis, and problem-solving” (Harris, 2002, p. 55). These projects reflect “educators’ attempts to wrap together knowledge in specific content areas[...]in pursuit of learning goals” (Midouser, Nachmias, Lahv, & Oren, 2000, p. 56). Teachers are apt to face different types of change when attempting to integrate online projects into their curricula. These changes might include the way the teacher groups students for instruction, manages the classroom environment, or delivers instruction.

The way that teachers group students prior to integrating online projects may shift as students take part in project activities. For example, one factor that might influence change in grouping is the extent of access that students have to Internet-connected computers. Teachers might begin by introducing the project to the whole group, but later shift project activities to be completed by small groups or as individual homework assignments.

Management concerns might also cause the teacher to move from considering only individual classroom parameters and restrictions. Interacting with others in an online project also requires considering other classrooms from other schools within the

context of a telecollaborative project. Restrictions the project partners have in terms of time and accessibility, as well as cultural differences, might require the individual teacher to modify techniques that she traditionally uses to manage her classroom.

If teachers find it necessary to change their teaching styles, another kind of innovation is demonstrated. Online projects typically lend themselves to constructivist, learner-centered methods of instruction (Windschitl & Sahl, 2002). Those teachers who are more traditional in their teaching methods—more teacher-centered than learner-centered—might need to consider major shifts in the ways they approach teaching to help their students complete telecollaborative online projects successfully (Dirks, 1997).

Currently, the vast majority of teachers integrating the Internet into classrooms do so by having students use the Internet as a sort of online library for research purposes (Becker, 1998; Harris, 2002). Fewer teachers involve their students in *telecollaborative* or *telecooperative* projects. Harris (2002) describes a telecollaborative project as one in which collaborative activities occur among the participants. Through dialogue online, individual students or groups work together to complete the same activity—or as Harris describes it, they work together “on a single sandcastle” (p. 58). Telecooperative projects, on the other hand, have multiple



“sandcastles” being built, with participants working individually and presenting their work side-by-side with others’ contributions.

Though dialog may occur among participants, it is not required in order to complete each participant’s activity goal. Thus, in telecollaborative or telecooperative projects, teachers need to learn how to negotiate with others (Harris, 2002), something that teachers trying to integrate online projects might find challenging, since they find themselves no longer solely in charge of decision-making about the learning activity.

Integrating telecommunications activities into the classroom requires more than just learning the technical aspects of participation. Too often it is assumed that if one simply gives teachers hardware and access to the Internet, they will automatically know how to use it effectively and productively within their classrooms (Ronnkvist et. al, 2000). Educators must also become familiar with ways to go about integrating Internet activities into classroom curricula (e.g. David, 1996; Kumari, 1998). For example, the teacher must determine which lessons lend themselves to incorporating Internet-enriched projects. Similarly, teachers must analyze whether the project can be added seamlessly into the curriculum without any adjustments, or whether either the project or teacher’s instructional methods must be adapted to ensure the

effort's success. Issues like these are especially true of telecommunications projects that are based upon a more complex project design—for example, cross-classroom collaboration where frequent student-to-student (and often teacher-to-teacher) interaction occurs during the course of the telecommunications activity.

To be successful at integrating curriculum-based telecollaborations into the curriculum, teachers need to learn how to work with others in an online project community—a community made up of teachers, students, and sometimes others involved in the project. They need to learn what is expected of both teachers and students as they participate with their classes; they need to know which decisions must be made within the online community and which decisions can be made locally within the classroom.

An example of the kind of interchange and decisions made in an online project is the *Monster Exchange* at <http://www.monsterexchange.org/>. Classes in the project are matched up for information exchange based on information the teacher has provided about the class (e.g. grade level, number of students, location). First, each student draws a monster. Then, students write the descriptions of the monsters they drew and send the descriptions to their partner class. Students in the partner

class each try to draw a monster based on its written description. After the resulting monster pictures—both the original picture and the picture based on textual description—are posted online, the groups evaluate the effectiveness of their descriptive writing.

In a project like this, it is important that teachers understand that timely feedback moves the project along. They also need to consider what technical assistance might be needed to accomplish required elements of the project such as posting the completed pictures online for students to compare. Issues like these can be addressed in professional development sequences to help prepare teachers to integrate telecollaborative projects successfully.

### ***Introducing Educational Reform***

Major shifts in teaching styles, like those teachers face as they begin to integrate online projects, often become part of educational reform initiatives—those reform efforts targeting change school-wide and district-wide. Introducing reform in an educational setting takes time. The initiation stage alone—the time during which teachers become familiar with new ideas and make decisions about whether or not to adopt them—can take “from several months to several years” (Waugh & Godfrey, 1995, p. 39). To avoid resistance, innovations must be presented incrementally (Henson, 1987) rather than as sweeping changes, mandated from above, that take place

across the district all at once and in giant steps (Dirks, 1997; Fabry & Higgs, 1997). Bombarding teachers too quickly with too many changes or too many new ideas can cause them to resist efforts to adopt new ways of thinking and teaching (DuFour, 2001). Careful consideration and understanding of the teachers' contexts is required when planning professional development sequences and support systems to be sure that teachers' needs are met (Chiero, 1997; Daley, 1999), because "[t]he easier it is for individuals to see the results of an innovation, the more likely they are to adopt it" (Rogers, 1995, p. 16).

Professional development can be used as a vehicle for change (OTA, 1995; Ronnkvist, Dexter, & Anderson, 2000; WBEC, 2000) and support systems can ensure that there is help and follow-through provided for those who need more assistance (Asayesh, 1993; Gonzales & Thompson, 1998; Kromhout & Butzin, 1993; Ronnkvist, et al., 2000). This "workshop to workplace" (DuFour, 2001, p. 2) model of professional development and support provides ongoing, continuous learning from both district-level experts and campus-level peers (Becker, 1998; NCES, 2000a). Rather than "just in case" learning, in which teachers are blasted with everything they need to know on a topic in a short period of time, the workshop to workplace model provides a "just in time" selection of professional

development sequences and support for teachers who are at various levels of learning about telecommunications activities (Becker, 1998; Brown, 1999; Dirks, 1997; Guskey & Sparks, 1996; McKenzie, 2001; Ronnkvist, et. al, 2000). “Just in time” learning meets the teacher at her ability level and with the type of instruction she needs to work an online project into her curriculum.

By learning how to integrate online projects in the classroom, teachers can learn to anticipate obstacles and barriers so that they can proactively solve problems (Asayesh, 1993; Hase & Kenyon, 2000; McKenzie, 2001) and seamlessly weave online projects into the curriculum. Examining teachers’ initial attempts to add telecommunications projects into their curricula elucidates their situations and provides information to help structure their professional development. Thus, I believe it is important to understand how teachers go about integrating an online project for the first time.

### ***Purpose of the Study***

It is the teacher who plans and implements the instruction going on in the classroom. It is the teacher who ultimately makes choices about how and whether innovations will be integrated in the classroom, and the degrees to which they will be implemented (WBEC, 2000). There is a “...need to understand the extent and

types of teacher use of computers and the Internet, as well as teachers' perceptions of their own preparedness to use these tools in their classes" (NCES, 2000b, p. 1). I would like to see more teachers adopt online projects in their curriculum. Therefore, I believe that it is important to focus on teachers' stories, so that we may better understand the various perceptions they have of the process of bringing Internet projects into their working environments, in order to know better how to encourage more teachers and students to benefit from what online projects have to offer.

The purpose of this study is to understand how teachers perceive the process of integrating telecollaborative or telecooperative projects into their curricula for the first time. Unlike teleresearch projects that primarily involve information retrieval, telecollaborative and telecooperative projects incorporate an added dimension through interaction with others online. The stories that teachers have to tell about their experiences help to provide an understanding of what it was like for them to implement an interactive type of online project.

### ***Context***

This study focuses on K-12 educators who are integrating online projects for the first time. Participants will be contacted through K-12 telecommunications organizations which offer

telecollaborative and/or telecooperative projects. Each organization offers its own type of support for new users, and some also offer professional development training. The organizations in the study will include:

- **ePals Group Projects:**  
ePals offers projects to help participants learn a variety of topics from their worldwide peers. The projects have been designed by teachers to be adaptable by subject area and age level. ePals offers group cross-curricular projects that involve many members of the ePal community simultaneously. It also offers class-to-class projects that are customizable. For example, classes can pick their partners and choose their own timeline.  
<<http://www.epals.com/projects>>
- **Global School Network (GSN):**  
GSN promotes international collaborative learning projects. Its Online Projects Registry holds a database of telecollaborative projects organized by subject, age level, and start date. GSN also offers *Online Expeditions*, through which students can follow real explorers as they travel to exotic places; *Field Trips* where students share information about their own field trips with others; *GeoGame* with which students work together to learn about geography; and *Newsday*, in which students create their own news network (like the United Press International or the Associated Press news organizations) and their own international newspapers.  
<<http://www.gsn.org/>>
- **KIDLINK KIDPROJ:**  
KIDLINK's KIDPROJ area promotes global dialog through telecollaborative and telecooperative projects designed by teachers and students. Projects vary in duration, including those that are on-going with no strict start date or end date.  
<<http://www.kidlink.org/KIDPROJ/>>

- **Oz-TeacherNet:**  
Oz-TeacherNet is an Australian-based organization offering collaborative projects internationally. It originally began with a focus on professional development for Australian teachers. The projects offered were developed to meet the needs of these teachers and are currently open to classes worldwide.  
<<http://rite.ed.qut.edu.au/oz-teachernet/index.html>>
- **2Learn: Collaborative Learning Center**  
2Learn is a Canadian-based organization offering online projects developed by Canadian teachers. Participants can choose to join an existing project designed by teachers or design their own projects to be made available to others who may be interested. Projects are organized by language (English or French); by structure of the activities taking place in the project (e.g. keypals, global classrooms); by grade level (e.g. K-3); and by keyword search (e.g. curricular area keyword, topic keyword).  
<<http://www.2Learn.ca/Projects/ProjectCentre/projframe.html>>
- **The Electronic Emissary Project:**  
The Electronic Emissary Project offers telementors to assist teachers and students as they explore particular topics of interest. Matches are made between the learners and subject matter experts who are selected by participants. The learning team includes the student, the subject matter expert, the teacher, and a learning team facilitator who helps promote interaction among team members. The subject-matter expert helps guide the learners in a particular curriculum-based project that the teacher usually designs.  
<<http://emissary.ots.utexas.edu/emissary/>>

This study provides a mosaic of the experiences that teachers encounter when trying to integrate online projects for the first time



by gathering perspectives from novices participating with these telecommunications organizations.

### ***Implications***

Gaining insights from the stories the teachers share, I hope to illuminate connections that might be drawn across participants to help promote participation in online projects. The teachers' stories will provide a rich pointillistic illustration of information to help elucidate and describe their experiences. For example, information in the teachers' stories may help telecommunication project organizations to tailor projects to meet the needs of novices. The study's results may also help point to support services that the organizations can offer their users. Other groups that might profit from the study's results are those who are responsible for designing support systems and professional development for teachers about online learning and instruction. The teachers' stories might give them insights into services that district and campus-level support teams can offer teachers as they begin to integrate online projects. Finally, I believe that providing this mosaic of stories might help other novices who are considering doing online projects, giving them ideas for organizing their classrooms and anticipating possible benefits and challenges so that they can begin to learn how to weave an online project into their curriculum.

## **Chapter 2-Review of Literature**

### ***Internet Access Comes to the Classroom***

***From increased access to increased expectations.*** Internet access in U.S. schools is on the rise. The decade of the '90s saw access in schools increase from 35% in the mid '90s to 95% by the end of the decade, and from 3% to 65% in classrooms during that same time period (OET, 2000; NCES, 2000a; NCES, 2000b).

With this increase comes an expectation that teachers will begin to productively integrate Internet activities in the classroom (Fabry & Higgs, 1997; ISTE, 2000a; Kumari, 1998; OTA, 1995a; OTA, 1995b; Page, 1999; Sherry, 2000; Young, 1991; Zhang & Espinoza, 1997). The money has been spent putting in the hardware and the networks (Painter, 2001). Now, teachers are expected to embrace this new type of technology (Starkweather, 2002; Zhao, 1998) and demonstrate an apt use of it. As McKenzie (2001) described it, "We expect to see daily effective use of new technologies in standards-based, curriculum rich lessons" (p. 12). At the end of the last decade, Becker (1998) claimed that the Internet might become the most valued use of the computer in schools—for both teachers and students—enhancing activities in the classroom, becoming "an integral part" of classroom instruction

(Stuhlman & Taylor, 1998, p. 91) and providing the "...connection to the global village" (Kurshan, 1990, p.51).

The Department of Education's Office of Educational Technology (OET) stated in its November, 2000 report that "[r]apid advances in computer and telecommunications technologies are revolutionizing the way we work, gather information, and connect to the world" (p. 1). Therefore, the OET (2000) has set goals for teachers' use of technology that include: having training and support to help students using the Internet; having every classroom connected to the Internet; and having on-line learning resources as an integral part of school curriculum. The International Society of Technology in Education (ISTE, 2000b) includes telecommunications activities as one of six major standards for students to meet in its National Educational Technology Standards (NETS) for *Technology Communications*—"Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences" (p. 1).

Thus, incorporating computer-based technology and Internet use in the classroom is not only being emphasized at local and community levels—it is also stressed at the national level (Fabry & Higgs, 1997) and is viewed in particular as a major focus in "education policy and reform" (NCES, 2000a, p. 1). This reform is

considered necessary in order to equip students with the increased technology skills and knowledge they will need when they enter the workforce (Fabry & Higgs, 1997; NCES, 2000a; Scheffler & Logan, 1999). Hawkins (1996) explained this extension beyond disciplinary instruction as instruction designed to help students in dealing with issues and situations they may face as adults.

Beyond the tradition of instructing the fixed facts of disciplines and received knowledge, schools must now enable students to appreciate the complexities that bathe them—to develop sophisticated interpretation skills, tolerance for ambiguity and uncertainty, an appetite for difficult problems, and measured thoughtfulness in pursuit of solution (Hawkins, 1996, p. 40).

Hawkins (1996) believes that technology—with its ability to help us communicate with others via the Internet—will aid us in meeting this challenge. Involving students in Internet activities may motivate them to “improve their skills and learn about the world around them” (Rogers, Andres, Jacks, & Clausen, 1990, p. 27).

Communicating with others via the Internet is also seen as a way to keep students and teachers up-to-date about events and information, provide connections with experts in fields of study (Culp, Hawkins, & Honey, 1999), and provide a platform for sharing of “...ideas, experiences, activities, materials, and reflections with colleagues at other schools, particularly when a school is geographically isolated” (Hunter, 2001, p. 493).

But how are teachers applying the standards? How are they integrating Internet activities into the curricula? The next section explores how current research has approached technology and Internet use in education.

***Harnessing the power of the Internet.***

The infusion of new ideas and strategies across a shrinking world is the promise of new communication technologies (Riel, 1992, p. 17)

Currently, the most common use of the Internet in the classroom is in the form of information gathering done for students' research projects. The Internet is being used as a great vault of information "more than for any other purpose" (Becker, 1998, p. 6). However, one of its greatest uses is in making connections with others, "connecting to communities of students, teachers, parents, and highly qualified volunteer experts" (Melmed, A. e-Testimony to the WBEC, August, 21, 2000, [as cited in WBEC, 2000, p. 125]). This is especially true of "cross-classroom collaborative projects" (Becker, 1998, p. 7), and this great potential has yet to be tapped in any depth.

Global classroom projects online-learning projects connecting classes around the world-are among the numerous types of Internet activities that teachers can use in the classroom to connect with others (Culp, et al., 1999; Harris, 1993), providing "...new

opportunities for improving teaching and learning” (Culp, et al., 1999, p. 14). In the past ten years, several global telecommunications organizations have sprung up on the Internet with the intent to provide such online projects for teachers to incorporate into their curricula.

The efforts are more than just providing a lesson plan to be downloaded and used in the classroom. These organizations have *cross-classroom collaborative projects* in which student-to-student (and often teacher-to-teacher) interaction occurs during the course of the telecommunications activity (Culp, et al., 1999; Harris, 2000; Hunter, 2001; Riel, 1992), directly addressing the goals of the NETS standards for telecommunications. While they offer numerous benefits depending upon the project activity (Harris, 1999), the greatest benefit “...of curriculum-based telecollaboration lies in (the) interdependency among remotely located partners” (p. 61). These types of projects focus on the curriculum, but are also centered on the people participating in the activities (Harris, 2000).

Many of these organizations also support teachers in their efforts to add telecommunications projects by providing a professional development arm to assist them in learning how to incorporate online projects. However, relatively few teachers overall are involving their students in cross-classroom collaborative

projects (Becker, 1998; Rogers, et al., 1990). Becker (1998) found that fewer than 7% of U.S. teachers were involved in this kind of Internet activity.

Teachers are a widely diverse group of individuals. They range from those who embrace the potential of the Internet to those who see no practical application of the Internet in their day-to-day routine. As more begin to join in on telecommunications projects, it is important to take teachers' needs into account in order to facilitate their on-line experiences. Gaining a better understanding of the range and nature of their varying perceptions and beliefs about integrating this kind of project into the curriculum will help project designers better assist novices in integrating on-line projects (Wells & Anderson, 1997). It will also help those who plan for and provide professional development in the area of technology use (Ronkvist, Dexter, & Anderson, 2000; Willis, 1992) and help us to understand how best to work with those integrating telecommunications projects the first time—the novices.

Being a *novice* implies undertaking a new frontier of learning and moving in new directions. It implies facing and dealing with change. The next section will describe what is known about teachers as individuals who face change. Moving from *individual* to *organizational systems*, using a “wide-angle lens,” the section will

also explore ways *change agents*—people instituting change—try to diffuse new ideas and innovations such as curriculum-based telecomputing projects across groups of educators.

### ***Implementing Change***

#### ***Facing change.***

Teaching presents ever-changing challenges. As the context changes, so do the demands. Experienced teachers quickly become novices when the classroom environment shifts dramatically, transforming tried-and-true strategies into ineffective approaches (Sandholtz & Ringstaff, 1996, p. 282).

Teachers facing use of telecommunications projects in the classroom will be facing changes (Becker, 1998). Change implementation is not new to education. Although educators often face change, it is something that teachers who are comfortable with the way things are often find frightening (Henson, 1997). Change can also be a source of stress (Honey & Culp, 1996; Scheffler & Logan, 1999) or present an element of risk (Rogers, 1995).

Teachers finding themselves in a novice's position often doubt their own competence (Marcinkiewicz, 1993) and spend a lot of their initial learning time preoccupied with their feelings of inadequacy (Sandholtz & Ringstaff, 1996). Harris (1999) describes this initial learning as "stumbling" (p. 57), because teachers often encounter unexpected situations as they take their first steps. McKenzie (2001)



warns change agents that rushing novices to move through stages of learning—not giving them time to absorb and process information, and to explore and practice new learning—may result in a “great danger that anxiety, concern and latent resistance of many of the more reluctant learners will be aggravated” (p. 4). Some reluctant teachers’ aversion to the change involved in integrating technology has been likened to avoiding a “disease” (Willis, 1992, p. 82).

Yet Greene (2000, p.1) tells us that “[i]n the Internet age, change is the only constant.” Advances in Internet technology happen rapidly (OET, 2000; Painter, 2001) and impact our everyday lives. The Internet changes the way we look at information, the way we work (OET, 2000), the way we communicate, and even our leisure time (WBEC, 2000). Though change may be a constant, it is often difficult to introduce innovations to individuals and organizations (Brown, 1999; Dirks, 1997; Greene, 2000; Henson, 1987; Rogers, 1995). It is a slow process, and asking teachers to change too rapidly may “result in maintenance of the status quo” (Guskey & Sparks, 1996, p. 2), causing them to “batten down the hatches” to weather the siege of new information. This is because novices typically spend a lot of time at the beginning of their learning just taking in information, and the inability to filter inconsequential from crucial information can create information

overload (Daley, 1999; McKenzie, 2001). Daley (1999) tells us that novice learning tends to be “contingent on concept formation and the impact of fear, mistakes, and the need for validation on that process” (p. 138).

Many novices also hesitate to initiate actions based on new learning until others can confirm that the planned action is appropriate for the given situation (Daley, 1999). Teachers may simply see no practical use for the change (Dusick, 1998; Willis, 1992). They may question the need for it. They need to understand the advantages and disadvantages the change may portend. Will the change be compatible with current practices? Will the change facing them be easy to learn and use? Does implementation allow for a trial period? Are there others one can turn to for modeling/examples? Can the innovation be adapted to fit within a specific setting? Can it be “reinvented”—adjusted to fit the context and needs of the particular classroom (Rogers, 1995, p. 17)?

Reilly (1996) tells us that “[t]he future doesn’t always jump up and surprise us all at once” (p. 207). The transformation process actually occurs in incremental steps (Dirks, 1997; Fullan, 2002; Marcinkiewicz, 1993). Teachers who are planning to integrate telecommunications projects in the classroom are facing more than one change. Not only do they need to learn how to use the

technology; they often have to modify the way they teach—and often even the way they manage and organize the classroom (Scheffler & Logan, 1999)—to use that technology effectively (Berg, Benz, Lasley, & Raisch, 1998; Dirks, 1997; Fabry & Higgs, 1997).

Internet projects lend themselves to constructivist teaching methods (Becker, 1998) and classrooms that are more “child centered rather than textbook-centered” (Sandholtz & Ringstaff, 1996, p. 284). Becker & Ravitz (1999) posit that educators who readily embrace Internet use seem to be:

- more willing to tackle the unknown, even when this means that they may be in the position of *learner* and learning from their students;
- able to juggle several activities going on simultaneously;
- inclined to assign long-term, complex projects;
- willing to allow students a freer range of choices in tasks, materials, and resources needed to complete their choices;
- willing to guide and facilitate, giving more authority to students (p. 284).

Those not familiar with constructivist practices may find the change daunting, because they are confronted with multiple changes at one time. Unfortunately, teachers often face more than one change at a time, which may lead them to resist technology use. DuFour (2000) describes this as the “Christmas Tree” syndrome:

This eagerness to pursue change and embrace every “new thing” results in what has been referred to as the

“Christmas tree” school. Programs, training, and initiatives are simply hung on the existing structure and culture of the school like the ornaments on a Christmas tree. Like ornaments, they never become truly organic or part of the tree. They dangle frugally without ever being absorbed into the school’s culture (p. 4).

Absorbing innovations into school culture takes more than winning over one individual at a time. True change requires whole groups of people to embrace an idea. Though individuals may ultimately make the decision about adopting an innovation, the impetus to change often comes from organizational systemic change being put into place. From the national level to state level; from region to district; from campus to grade level teams—we need to understand how to diffuse current innovations, including the Internet, across these groups and ways to win over the individual teachers who make up the groups.

***Diffusion of innovations and new ideas.*** Current research in the area of change looks at the way innovations are diffused throughout systems and how individuals adopt innovations and adapt to change (e.g., Dirks, 1997; Durrington, Beichner, Titus, & Valente, 2000; Mioduser, Nachmias, Lahav, & Oren, 2000; Rogers, 1995; Wells & Anderson, 1997; Zhao, 1998). Too often, administrators try to mandate change, expecting it to happen all at once, in “one giant step” (Dirks, 1997, p. 52). Though Robinson’s 1995 study (as cited in Dusick, 1998) claims that teachers need an

administrative mandate to compel them to change, Fabry & Higgs (1997) have found that teachers are more likely to adopt innovations from a grassroots level if they can receive administrative support, rather than having it mandated from top down. In this way, teachers feel ownership in the change and empowerment in growth decisions (Asayesh, 1993; Guskey & Sparks, 1996).

For innovations to be diffused throughout an organization such as a school or school district and to be adopted by individual teachers, as education reformers hope, change agents must examine how the innovation fits in relationship to the different contexts within the organization. However, Fullan (2002) warns that "...those firmly committed to their own ideas are not necessarily good change agents, because being a change agent involves getting commitment from others who might not like one's ideas" (p. 17). Thus, communications channels need to be in place to help disseminate information about the innovation and its use throughout the school district in order to reach individual teachers. Change agents should also look at time as it relates to introducing the innovation. What time allowances for teachers to learn to effectively use an innovation such as telecommunications projects will the district need to make? Finally, change agents in the district need to be aware of the social system at each campus level, particularly focusing on collaboration

and support systems that are in place or may need to be put in place (Rogers, 1995). Strong social networks that promote collaboration and support provide an environment that nurtures risk-taking and encourages exploration into new ideas (Chiero, 1997; Gonzales & Thompson, 1998; Porter, 2003).

DuFour (2001) has found that the days of emphasizing individual knowledge and skills are over; education reform, like that which promotes integration of Internet activities, requires that change come from an organizational level. "...[I]t is time for a profession that has been fiercely protective of individual autonomy to acknowledge that individual development does not ensure organization development. The random learnings of staff members may contribute little to a school's ability" to change (p. 4). This does not mean that teachers' voices should be ignored. Teachers should be given the opportunity to have input during the innovation adoption decision-making process and their voices need to be heard as they initiate steps to take on new areas (Hunter 2001).

Such systemic perspectives look at the process of change at an organizational level (DuFour, 2001; Fullan, 2002; Guskey & Sparks, 1996; Waugh & Godfrey, 1995) and impact individual teachers and their efforts to adapt innovations. Stages include initiation, implementation and routinization of changes and vary

according to administrative support and resource availability. During *initiation*, the decision is made to go ahead and make changes. Administrative support and resource availability at this level impact teachers' decisions to accept changes. They also impact the *implementation* and *routinization* (ongoing use) of change on the campus. The degree to which each campus administrator supports the change and the resources that each campus may have are typically not consistent district-wide. Accordingly, change agents need to realize that these stages, from initiation to routinization, may take several years (Waugh & Godfrey, 1995). Fullan (2002) calls this process reculturation.

Reculturing is the name of the game. Much change is structural and superficial. Transforming culture—changing what people in the organization value and how they work together to accomplish it—leads to deep, lasting change (p. 18).

Thus, before teachers can use the Internet, they must learn *how* to use it in their classrooms (Dusick, 1998)—making professional development an integral part of organizational change. They need to know how their classrooms can benefit from adopting an innovation (e.g., Becker, 1998; Guskey & Sparks, 1996; Ronnkvist, et al., 2000) and ways to introduce an innovation into their own particular settings. How, then, can professional development be used as a vehicle for change? What do we need to

know about teachers as learners? How can we support teachers in their efforts to implement their learning? The next section explores issues related to professional development, teachers as learners and support systems need to promote use of online projects.

### ***Professional Development***

#### ***Professional development as a vehicle for change.***

Professional development has been described as the key element to facilitating teachers' use of the Internet and other educational technologies, especially as Internet tools and resources become more sophisticated (OTAA, 1995; Ronnkvist, et al., 2000; WBEC, 2000). We must help both teachers and administrators as the educational change they face begins to "alter their jobs" (Hawkins, 1996, p. 43). As Zammit (1992) sees it, "whether the technological promise will be fulfilled depends on teachers receiving expert guidance in policy development and implementation, the essential financial support and long-term professional development" (p. 66).

This does not mean just *training*, which implies learning of technical skills. Teacher support goes beyond training (Bonk, Ehman, Hixon, & Yamagata-Lynch (2002); UNESCO, 2002; WBEC, 2000), beyond teachers learning about "hardware and software operations and applications" (David, 1996, p. 238). Professional development is a multifaceted process. It involves both teacher



education and teacher support (Asayesh, 1993; Ronnkvist, et al., 2000). This process must be ongoing—not simply a single workshop or two—and follow-up should be part of the process (Llorens, et al, 2003; Guskey, & Sparks, 1996; Ronnkvist, et al., 2000; WBEC, 2000). Professional development should be available from “workshops to the workplace” (DuFour, 2001, p. 2), from learning with experts on a district level to learning collaboratively with peers on campus (Becker, 1998).

Unfortunately, districts typically spend more on hardware and less on the design and implementation of professional development to help teachers learn how to translate their learning to practice in the classroom (Asayesh, 1993; Bonk, et al., 2003; Brown, 1999; McKenzie, 2001; Sandholtz & Ringstaff, 1996; Zammit, 1992). There seems to be an assumption that merely having access to technology will inspire teachers to use it effectively (Bonk, et al., 2003).

When the decision to adopt an innovation is made—administratively or individually—teachers first need to learn *how* to use the innovation (Asayesh, 1993; Brown, 1999; Chiero, 1997). This is the case with telecommunications-enriched learning activities as well. “Lack of adequate training” (Chiero, 1997, p. 135) is one of the major barriers to integrating technology into the

curriculum. Too often, training is primarily about developing technical skills the teacher may need and not on ways to successfully integrate technology into professional practice (Bonk, et al., 2002; Hunter, 2001; Painter, 2001). This training is typically short-term in nature (Chiero, 1997; Hunter, 2001; Young, 1991; Zhao, 1998) or, as the WBEC (2000) put it, “Too little, too basic, too generic[...]. In the business world, training is tailored, focused, and just-in-time. In the education world, it is more often one-size-fits-all, generic, and just-in-case” (pp. 41-42). Traditional “one-shot models” (David, 1996, p. 248) of professional development in which teachers sit and listen to someone introduce new ideas (Reilly, 1996) and then are sent on their way to put that new learning into practice should not be the model we continue to use. This is also true of one-time workshops designed to encourage participants to develop telecollaborative projects to be used in their classrooms. Harris (2000) warns that this type of training doesn’t “...seem as ‘real’ and ‘important’ to project participants and therefore resulting projects are at greater risk of being abandoned prematurely” (p. 60).

Professional development needs to be offered in a variety of ways in order to meet the different levels of technology skill and types of learning styles that teachers have (Becker, 1998; Berg et al., 1998; Brown, 1999; Dirks, 1997; Guskey & Sparks, 1996,

Ronnkvist, et. al, 2000). Technology change agents need knowledge about how “humans behave, as well as knowledge of how computers behave” (Willis, 1992, p. 98). Professional development needs to be supportive in nature and emphasize ways that teachers can integrate technology and telecommunications effectively, particularly given their specific strengths, limitations, and curricular needs (Brown, 1999; Guskey & Sparks, 1996; McCullen, 2002). Some teachers may prefer to have others on campus who can model Internet use; some may need one-on-one training; while others simply need time to explore on their own (Bonk, et al., 2002; Mouza, 2003; OTA, 1995a; Sherry, 2000).

Ronnkvist, et al. (2000) claim that technology-related professional development is made up of two dimensions: technical content—the typical type of educational technology training—and instructional content from professional development staff. *Technical content* includes: accessibility to hardware, software and the Internet; technical support services; computer troubleshooting services; hardware/software/Internet use; and time to practice technical skills and work with others. *Instructional content* includes: content area information; communications access to pedagogical expertise; support from people with instructional expertise; guided practice and consultation for curriculum integration; pedagogical

models; implementation strategies; and time for working on instructional content (p. 3). More emphasis in professional development needs to be put on instructional content, because integrating Internet activities is more about instructional content and management rather than on becoming proficient with the technical aspects of telecommunication tools.

When moving training from the workshop to the workplace, change agents need to take context into account, which includes the “programs, procedures, beliefs, expectations, and habits” (DuFour, 2001, p.1) that comprise the school where continued staff development will occur. Change agents need to provide onsite “classroom-based assistance” (David, 1996, p. 236), and they must understand how teachers behave as learners.

***Teachers as learners.*** The design of professional development should not be limited to structuring activities to present to educators. It also requires an understanding of the nature of teachers as learners. Those who design professional development sequences need to be aware of the needs of teachers as learners—adult learners. Understanding the differences between *pedagogy* and *andragogy* should aid developers as they design programs for adult learning. (McKenzie, 2001).

Andragogy is a term first coined by Malcolm Knowles in the 1970s, used to describe the opposite of pedagogy (Burge, 1988). Knowles (1996) explained that *pedagogy*, a word coming from Greek stems meaning *child* ('paid') and *leading* ('agogos'), means "the art and science of teaching children" (p. 82). He chose the word *andragogy* because the Greek stem ('andr') means *man*, hence the "art and science of helping adults to learn" (p. 83). The terms do not vary so much in the teaching and learning processes that go on, but rather in the social, societal, developmental, and cultural differences between children and adults (Burge, 1988; Hanson, 1996).

Adult learning involves self-directedness, rather than dependence on others for direction (Dusick, 1998; Hanson, 1996; Hase & Kenyon, 2000; Knowles, 1996; McKenzie, 2001). Adults come into learning situations with a variety of experiences already in their grasp. Their developmental levels vary extensively based on their experiential backgrounds and their social and work contexts. As with younger students, understanding learner developmental levels plays an important part in adult education, but adult developmental levels focus more on learning that pertains to the individual's particular social and work environments. Moreover, application of adult learning is oriented more to the here-and-now (Hase & Kenyon, 2000). Knowles (1996) found that while children

tend to be oriented to “postponed application of knowledge” (p. 84), adults want to know, “How is this relevant to what I’m doing now?” Therefore we should ask, “What does this mean for those of us who work with adults in professional development settings?”

Facilitators must strive to make “explicit connections to [teachers’] needs” (Zhao, 1998, p. 309) and learning should be in alignment with teachers’ particular workplace context attributes (e.g., Cuban [in Chiero, 1997]; Guskey & Sparks, 1996; Hase & Kenyon, 2000; Hawkins, 1996; McKenzie, 2001; Rogers, 1995; Sandholtz & Ringstaff, 1996). Knowles (1996) suggested that since adults are more problem oriented, “the most appropriate point for every learning experience is the problems and concerns that the adults have on their minds as they enter” into the educational setting (p. 94). By focusing professional development on the pedagogical *how* of using the Internet effectively, teachers develop the ability to adapt their learning and solve problems (Asayesh, 1993).

According to Hase & Kenyon (2000) and McKenzie (2001), adult learning is more holistic in nature than children’s learning, and pedagogical approaches are not as effective. Burge (1988) suggested that facilitators could best help adult learners by following the “Four R’s— Responsibility, Relevance, Relatedness

and Rewards” (p.10). Adults are *responsible* for their own learning. They need to know how learning is *relevant* to their current social setting and how it *relates* to prior knowledge and experience. Finally, while adults find *rewards* to be more intrinsic than extrinsic, they still need confirmation that they are correctly applying their knowledge (Brown, 1999; Daley, 1999; Knowles, 1996; Marcinkiewicz, 1993).

Adult learning is a life-long journey. Professional development is part of this journey as teachers actively participate as learners. Internet-related professional development should assist teachers in evaluating Internet activities in relationship to the content they are teaching and their students’ needs, giving teachers a chance to practice implementing changes in collaboration with others. They need “opportunities to think about instruction and learning, discuss their experiences with others, and develop alternative learning experiences for their students” (Sandholtz & Ringstaff, 1996, p. 289).

Brookfield (1990) has found that discussion is a key to facilitating adult learning, since “it appears to place teachers and learners on an equal footing, because it implies that everyone has some useful contribution to make to the educational effort” (p. 187). By providing discussion opportunities within professional

development, facilitators can address both cognitive and affective issues such as “problem solving, concept exploration, and attitude change” (p. 188). Though discussion promotes active participation—another rationale for using it as an andragological tool—Brookfield cautions facilitators to avoid playing the game of equating numbers of active participants with the success of the discussion session. Valuing discussion by the number of contributions made by participants gets dangerously close to what he calls the “cocktail party concept of discussion” (p. 190). Professional development facilitators who include discussion as a key part of their sessions need to be sure to address the needs and concerns of participants and be sensitive to group dynamics, both cognitive and affective, as they guide teachers in discussions. “Facilitators as guides” is not only a facet of group discussion; facilitators can also guide teachers on their independent learning journeys.

***Mentoring as a means of support.*** Teachers often find themselves alone on their journeys due to the self-directed nature of andragogy. Facilitators as mentors can assist them on their way. Daloz (1996) describes mentors as “interpreters of the environment” (p. 207). Mentors guide learners along their individual paths. They help learners through support of the learner’s current situation, by



providing challenges to move the learner forward on her journey, and by providing visions of what has been and what may be.

Mentors spend most of their energies helping learners balance between their old ways of “knowing” and new paths they are taking. Daloz (1996) describes this as a balance between *support* and *challenge*:

- When both support and challenge are low, not much happens—there is little motivation to do anything.
- When support is high, but challenge is low, learners experience a sense of confirmation for what they’ve been doing and continue to do it.
- When support is low, but challenge is high, learners become stressed and revert to old ways of knowing.
- When both support and challenge are high, learners feel safe to take risks and try new things and new ways of knowing (p. 209-210).

Mentors are not only useful for individuals on learning journeys; mentoring should also be an integral part of support systems that are developed to support professional development (Porter, 2003). In this way, learning that takes place in workshops is not manifested as a “one-shot” phenomenon. Instead, learning in workshops is part of a continuing and on-going process. The next section will describe other types of support systems that should be included in professional development to aid teachers as they move from the *workshop* to the *workplace* (DuFour, 2001). It also

provides examples of supports systems that are meant to enhance teacher use of technology and the Internet.

**Support systems.** As teachers continue to develop professionally, learning about Internet-based technology and integration, support will be crucial for them. This learning is not just for novices—teachers' needs for support change over time and with experience and move from basic technical support to integration support (Bonk, et al., 2002; Hunter, 2001; Sandholtz & Ringstaff, 1996). Those who develop support systems—including mentoring systems as mentioned above—need to be aware of the continuum of assistance that teachers will need to aid them in their professional growth.

Support systems are integral to professional development in educational technology, both at district levels and campus levels (Becker, 1998; Dirks, 1997; Gonzales & Thompson, 1998; Kromhout & Butzin, 1993; Ronnkvist, et al., 2000). Follow-up support by professional development staff will help facilitate the change to the workplace that occurs as a result of moving the learning from the workshop atmosphere into the classroom environment (Asayesh, 1993; Guskey & Sparks, 1996; Hawkins, 1996; NCEsa, 2000; WBEC, 2000). Administrative and campus support are also important factors in providing a facilitative environment for teachers

as they integrate Internet activities into their curricula (Chiero, 1997; David, 1996; Dirks, 1997; Durrington, et al., 2000; Gonzales & Thompson, 1998; Guskey & Sparks, 1996; Stuhlman & Taylor, 1998). Administrative support helps structure opportunities for continued professional growth, staff collegiality, access to technology, and develops an atmosphere where teachers are willing to take risks and try new things (Chiero, 1997). Campus support can be found in the “...social network of computer using teachers at the same school” (Chiero, 1997, p. 137)—providing a “comfort zone” (Gonzales & Thompson, 1998, p. 174) for teachers to explore new ideas—and in readily accessible technical support (David, 1996).

Based on experience with a long-term research associated with the Apple Classrooms of Tomorrow project (ACOT), David (1996) provides us with a model of a professional development and support structure that facilitates technology-rich learning environments for students. The model includes:

- **Support for accomplished teachers**-As noted earlier, novices are not the only ones in need of support. Support systems must be in place to meet a variety of learner needs, including the needs of more advanced learners.
- **Structured observations of accomplished practice**-Teachers learning from teachers. By having concrete models in contexts similar to ones in which they teach, learners can appropriate ideas and make them their own.

- **Reflection on and discussion of teaching and learning**-In keeping with principles of andragogy, critical reflection and discussion are key tools to help adult learners make connections and develop concepts.
- **Hands-on, collaborative learning**-This type of learning is problem-centered, offering an opportunity to “try it out,” which helps to make learning more concrete.
- **Curriculum project development**-Including curriculum development within professional development sequences stresses the need to use technology and the Internet as tools. It also provides teachers with support as they begin infusing technology within the curriculum.
- **Teacher teams and principal participation**-Teacher teams and principal participation provide the cornerstone of support on-campus. Teaming is one way to establish a social network in the school that promotes an atmosphere conducive to exploration of new ideas.
- **Commitment to share with colleagues**-Team support is dependent upon individuals’ willingness to work with others and support others by sharing ideas and collaborating on project.
- **Follow-up support**-To enhance professional development sessions, follow-up support should be available as teachers take their learning into the classroom.
- **Iterative expansion plans**- As campuses anticipate and provide for technology support and training, plans should be developed so that others can benefit from successes, taking the plans and adapting them for the new context and building upon them as needed (p. 242-244).

Jamie McKenzie (2001) provides us with another support system model that can enhance technology-rich environments. His model stresses that support should be provided on many fronts to be effective. He lists effective support strategies as:

- **Professional development plans**-A professional growth plan (PGP) is written by the teacher and shared with the principal. The plan outlines professional development sessions and learning proposed by the teacher for the upcoming year. The principal can then support the teacher's learning journey with resources and other support that might be needed.
- **Study groups**-Study groups should meet regularly to discuss PGPs and to plan for and discuss learning. These should be teacher-selected study groups.
- **Technology coaches, mentors and cadres**-As mentioned above, adult learners benefit from the assistance of skilled guides who can help them as they move along their planned professional development growth paths. As teachers gain skills and confidence, the role of the coach or mentor may change or become unnecessary.
- **Informal support groups and informal support**-McKenzie suggests that each campus promote informal support systems to provide "just-in-time support" for those who need the immediacy that informal support can provide.
- **Help lines and lists frequently asked questions with answers to each (FAQ's)**-With the rise in Internet access, help lines and FAQ's can provide quick and easy support for staff.
- **Excursions: School visits, work place visits, conferences, etc.**-Having a chance to see technology integration "in action" helps provide teachers with impetus to shift behavior and understanding.
- **Online learning**-Numerous professional development opportunities are opening up online. Teachers can take advantage of learning on their own time, gathering support from outside sources (pp. 6-9).

David (1996) and McKenzie (2001) stress the need for teachers to be able to observe technology integration in practice. For teachers who want to learn how to integrate Internet activities in the

classroom, this could mean securing release time during the day in order to visit other classes. This would point to a strong need for administrative support. McKenzie's (2001) proposal for professional development growth planning might help teachers and principals foresee the need for release time far enough in advance to plan for it effectively.

Discussion groups were also a common feature of both plans, reinforcing Brookfield's (1990) stand that discussion is an effective tool to facilitate adult learning. McKenzie provides us with a more detailed look at discussion groupings that might be provided, including teacher-selected study groups. Having a collaborative learning environment on the campus helps teachers to extend their learning beyond the workshops they take. This requires strong administrative support. Principals need to do more than just encourage the teachers to work together (DuFour, 2001). They must provide the focus, parameters and support to help teachers work together effectively. Becker (1998) found that in this collaborative atmosphere—where teachers discussed new learning and worked together—progress was achieved in implementing Internet use. Having guided practice opportunities or one-on-one consultations—with district level staff or peers on campus—helps to move teachers forward without unnecessary time taken up

floundering on their own (Becker, 1998; Dirks, 1997; Gonzales & Thompson, 1998; Kromhout, & Butzin, 1993; Ronnkvist, et al., 2000)

Another feature common to both plans is the need for follow-up support. McKenzie's suggestion for districts to provide help lines and FAQ's, as well as online professional development and support possibilities for teachers, are constructive examples of such features. With numerous delivery systems available for support, it is important to apply a wide variety of these systems in order to meet the varying needs of the teachers who need meaningful support.

Having meaningful support is a time-saver for teachers, especially as typical training models do not provide teachers with the ability to solve problems and overcome obstacles on their own. As teachers begin to integrate telecommunications projects in their classroom, they will probably face some obstacles along the way. These obstacles can be opportunities to learn by doing.

The next section describes both possible obstacles that teachers may face and the possibilities for overcoming these obstacles, so as to enjoy a successful experience integrating telecommunications projects in the classroom for the first time.

## ***Integrating Telecommunications Projects: Obstacles and Barriers***

Facing obstacles and barriers is not inevitable, but preparing teachers to handle unforeseen problems and to anticipate problems before they occur will help make the experience of integrating telecommunications projects more positive. By providing problem-centered professional development opportunities, change agents can create experiences in which teachers can practice new learning and risk facing obstacles in a safe environment (Asayesh, 1993; Hase & Kenyon, 2000; McKenzie, 2001). Once teachers move from the workshop to the workplace, timely support can help them overcome barriers without undue stress or frustration (Becker, 1998; Reilly, 1996).

Of all the factors that can inhibit successful integration of telecommunications projects, *time* issues are what teachers most often indicate as problematic for them (Chiero, 1997; Gonzales, & Thompson, 1998; Honey & Culp, 1996; OTA, 1995a; Runnkvist, et.al. 2000; WBEC, 2000). Initially, teachers must carve out a sufficient amount of time to learn and practice using telecommunications (WBEC, 2000, Zammit, 1992). However, they should not be expected to master its use prior to introducing projects to students (Hunter, 2001). Teachers often learn along with



the students (Harris, 1999, Hunter, 2001; McCullen, 2002; Riel, 1992). Administrators and change agents can support teachers by embedding time to practice new learning within professional development sequences. Later, as teachers begin to use telecommunications activities in the classroom, they also need time to adapt and refine what they've learned (Guskey & Sparks, 1996; Zammit, et al., 1999). Having collaborative support systems, as mentioned earlier, and providing teachers with models to observe will help ease the frustration teachers face as they feel time pressures during planning and implementation of curriculum-based online projects.

***Internal obstacles and barriers.*** Strong support systems, including informal support and mentoring, can help teachers with internal barriers they may face. Anxiety and fear are among the most common internal barriers to effective integration of telecommunications projects (Brown, 1999; Dusick, 1998; Fabry & Higgs, 1997; Henson, 1987; McKenzie, 2001; Sherry, 2000). Self-efficacy issues and feelings of incompetence also inhibit growth and change (Dusick, 1998; Fabry & Higgs, 1997; Henson, 1987; Marcinkiewicz; 1993; Sherry, 2000). "Lack of self-efficacy could cause people to give up trying and to cease attempting to achieve their goals" (Zhang, et al., 1999, p. 372). Typically, these internal

barriers are most prevalent during early learning. Knowing this, facilitators and mentors can ease novices through learning stages, employing the necessary balance of support and challenge to help teachers over these hurdles (Daloz, 1996). Stress and frustration are other internal barriers that can be alleviated with well-planned professional development and system-wide support available for teachers (DuFour, 2001; Sandholtz & Ringstaff, 1996; Scheffler & Logan, 1999).

***External obstacles and barriers*** Access to computers and the Internet is the most influential external barrier to teachers integrating online projects into K-12 curricula (Becker, 1998). Shortages of machines with Internet access results in teachers having to juggle activities or materials and resources as they move from the classroom to the computer lab (Collins, 1996; Reilly, 1996; Zammit, 1992). Classroom management may become an issue as teachers find themselves facing the need to modify classroom strategies to facilitate participation in telecommunications projects (Sandholtz & Ringstaff, 1996). Rogers, et al. (1990) found that once novices got over technical hurdles, they often faced frustration due to the social nature of online projects. During a collaborative project, classes are dependent upon the participation of others, and “this new social realm is vastly unpredictable and even sometimes

temperamental” (p.27). Projects that have clear deadlines and timelines for activities can help teachers to plan and prepare for the activities (Harris, 2000). Sharing ideas with other teachers and observing classrooms in action may also help teachers find answers to their particular problems.

There are additional external barriers that cannot be addressed with professional development or support, but administrators and teachers should be aware of them. They include:

- **High expectations** of a teacher’s ability to effectively integrate telecommunications may be stressful due to perceived changes in job expectations (Scheffler & Logan, 1999). “Unfortunately, people sometimes expect teachers to appropriate technology at a more rapid pace than in the past simply because the tools themselves are changing so quickly.” (Sandholtz & Ringstaff, 1996, p. 289);
- **State testing and school-wide policies and procedures** may be perceived as barriers to effective integration of telecommunications projects by teachers (David, 1996; Sandholtz & Ringstaff, 1996). For some, it is simply that time must be prioritized, and state testing and school-wide policies and procedures conflict with time needed to plan for and implement an online project. For others, state testing and school-wide polices and procedures may demand more alignment with tested skills and traditional classroom practices, making it difficult to include a project-based telecommunications activity into the curriculum, because the project may not address the same scope of skills that must be covered locally;
- **Lack of funding** directed toward professional development and follow-up support can make it difficult for teachers to access the human resources that they need (Asayesh, 1993; Brown, 1999; McKenzie, 2001; Sandholtz & Ringstaff, 1996; Zammit, 1992);

- **Outside commitments** upon the teacher's time may interfere with project integration. Zammit (1992) described these commitments as "...school-related meetings, family or other responsibilities and interests [that make] it hard to make a commitment in an already busy life-style" (p. 61).

Some obstacles and barriers are embedded within the telecommunications projects themselves. Mioduser, et al. (2000) have studied educational Web sites for online projects and found that there is high variability in the quality of projects, particularly their educational value. These researchers noted that "...pedagogical approaches favored by educators and researchers for the development of valuable learning environments are still far from being implemented on most educational Web sites" (p. 71). In addition, they determined that only 2.8% of the sites they evaluated supported any form of collaborative learning. Many of the projects evaluated in the study didn't provide for the needs of different populations or paces of adoption. Mioduser, et al. claim that adoption is more easily achieved when educational sites are relevant to the teachers' and students' academic and support needs. The WBEC (2000) reported similar findings, noting that while there are numerous excellent projects available on the Web, many of them are mediocre. The WBEC also felt that content developers face a challenge to provide "good online content" (p. 69). Therefore, project designers need to be more aware of their audience and

users. Teachers are looking for rich, productive environments for their students to collaboratively experience. They are looking for projects that offer both academic quality and the support they will need to provide a successful learning experience for their students.

Facilitating teachers' efforts as they integrate telecommunications projects involves professional development and support to assist them in dealing with obstacles. Harris (1999) sees these stumbling points as opportunities to learn by doing.

If we use these rich opportunities to help us learn by doing—as we encourage our students to do every day—the stumbling can serve a larger educational purpose. Soon we will know how to step assuredly, and together with our students, we can explore fascinating new virtual spaces for telecollaborative learning, one step at a time (p. 57).

Facilitation should also include helping teachers learn *how* to integrate telecommunications effectively (Asayesh, 1993) and what it takes to move from *promise* to *practice* (WBEC, 2000).

### ***Facilitating Integration of Telecommunications-From Promise to Practice***

The interactivity available on the Internet, connecting teachers and students with others around the world, is a strong draw (WBEC 2000). Once teachers decide to use telecommunications projects with their students, they need to discern how they can best integrate activities involving cross-classroom collaboration online. First, focus should be on teaching

and learning strategies embedded in the curriculum that incorporate Internet activities, rather than on learning technical skills involved in using the Internet (Becker, 1998; David, 1996; Harris, 2000; Hawkins, 1996; Stuhlman & Taylor, 1998; WBEC 2000) to avoid isolated learning of skills outside of the context in which they will be used. “Without a focus on sound educational principles, learning with these new technologies can induce a kind of cut-and-paste thinking” (McKenzie, 2001, p.3). Rather than sitting and listening to someone tell them how to use telecommunications projects in the classroom, teachers should have a chance to experience and discuss their learning with others and apply this new learning to their specific contexts (Bonk, Ehman, Hixon, Yamagata-Lynch, 2002; Harris, 2000; Reilly, 1996; United Nations Educational, Scientific and Cultural Organization, 2002; Yoder, 2003).

Professional development and support should assist teachers in considering alternative ways to organize the classroom in order to facilitate participation in online projects (Becker, 1998; David, 1996; Hawkins, 1996; McKenzie, 2001; WBEC 2000; Zammit, et al., 1999). Organizational issues to consider include:

- *Physical organization*–e.g. What is the best way to arrange the room?

- *Schedule organization*—e.g. When will I need to use the computer lab? How much time should I devote to the project each day?
- *Grouping organization*—e.g. How should I group the students to make best use of the computers to which we have access? How can I subdivide the class to complete project activities? How can I work with other teachers in the project to help coordinate activities?

Teachers may also need to be introduced to different forms of assessment so they can effectively evaluate student learning during the project, because their tried-and-true methods of individual evaluation may not work as effectively in measuring learning that occurs during a collaborative project (Sandholtz & Ringstaff, 1996).

Current research finds that it is easier for teachers who are *student-centered* or who use constructivist teaching methods to integrate Web-based learning in the classroom (Becker, 1998; Becker & Ravitz, 1999; McKenzie, 2001; WBEC 2000). The activities in many online projects lend themselves to this style of teaching, in which students can work in groups to learn (Becker, 1998; Becker & Ravitz, 1999; Sandholtz & Ringstaff, 1996). In these situations, the teacher becomes more of a facilitator than explainer. Online projects are often more open-ended, with no “right” answers, and frequently, students work together in groups to come up with solutions to problems they’ve been given (Becker & Ravitz, 1999; Murphy, Drabier, & Epps, 1998; Sandholtz & Ringstaff, 1996).

Teachers who employ more traditional teaching methods may find it uncomfortable to teach using constructivist methods. Therefore, facilitators should help point the more traditional teacher to telecommunications projects that are run more traditionally. In this way, facilitators can provide information and support to help novices take the plunge and start integrating interactive projects in their classrooms.

### ***Taking the Plunge—Getting Started***

Novices typically begin telecommunications projects focusing on technical and management issues, and they are not inclined to incorporate projects with content significantly different from what they currently teach. It is easier for them to integrate projects if they can make them their own—fitting them within the context of their particular setting (Berg, et al., 1998; Brown, 1999; Gonzales & Thompson, 1998; Kumari, 1998; Mioduser, et al., 2000; Rogers, 1995). Since they have “little inclination to change their instruction” (Sandholtz & Ringstaff, 1996, p. 286), working projects into known avenues helps facilitate novice users’ efforts. They often need to learn to balance direct teaching and project-based teaching (Sandholtz & Ringstaff, 1996). As they become more comfortable using telecommunications projects and the constructivist teaching methods that the projects promote, they can then take their own



“small steps of invention” (Hawkins, 1996, p. 47)—or “reinvention” in Rogers’ (1995) parlance—and begin accommodating other types of telecollaborative or telecooperative projects.

Facilitators and change agents can further assist novices by helping them find online projects that might be of interest to them. Though outlined to help project designers create telecommunications activities, Rogers, et al. (1990) provide recommendations that can be translated to help show novices what to look for in the projects they consider:

- Look for projects with specific goals, specific tasks, and specific outcomes. “The more specific they are, the better. The more closely aligned with traditional instructional objectives, the better” (p. 26).
- Look for specific beginning and ending dates and deadlines. Find out how often you will be expected to send in information. Create a timeline to help plan activities.
- “If possible, try your project out with a close colleague first, on a small scale. This can help you overcome both technical problems as well as problems with the basic project design. You will find that having a sympathetic colleague available to discuss and solve problems will be a big help” (p. 27).
- Look for contact information, should you need to get in touch with the project moderator.
- Look for “examples of the kinds of writing or data collection that students will submit” (p. 27).
- Give yourself enough lead time before the project begins to plan and prepare for it.

Painter (2001) suggests that teachers draw on what they know about best teaching practices and utilize this information when taking part in an online project.

There is no textbook recipe to follow in this kind of teaching. A teacher must draw on a repertoire of curriculum knowledge, knowledge of student abilities and needs, and knowledge of technology resources in deciding how to integrate technology into any given lesson (p. 24).

When teachers are given an opportunity to learn *how* to integrate online projects and *time* to practice, plan, and implement projects; when teachers are given support and guidance to take the plunge and get started incorporating telecommunications projects, we will begin to see more teachers using global classroom projects as part of their day-to-day curricula.

### **Summary**

At the beginning of the 1990s, we were “waiting to connect” to the world (Owen, 1990, p. 46)—now we find Internet access on the rise in U.S. schools (e.g. OET, 2000; NCES 2000a; UNESCO, 2002). If we are going to harness the educational power of the Internet, professional development opportunities and support on multiple levels will be an ongoing need as we move “from promise to practice” (WBEC, 2000, p. 134).

Only a small percentage of teachers are currently taking part in global classroom projects at this time, despite the promise that

these projects offer—a chance to interact with a wide variety of others around the world (Becker, 1998; Rogers, et al., 1990). What can be done to help bring more teachers on board?

Research can help by finding out more about how teachers integrate Internet activities into K-12 curricula, and by finding out what kind of support and training is needed (Chiero, 1997; Fabry & Higgs, 1997; NCES, 2000b; Zhao, 1998). Research on the use of technology, including telecommunications, tends to concentrate on students and what they are learning (Chiero, 1997; OTA, 1995a). Only a small portion has centered on teachers' use of education technology (Bonk, et al., 2002; NCES, 2000a). There needs to be more of an emphasis upon research about teachers and how they are integrating technology in the classroom (e.g., Chiero, 1997; Kumari, 1998; NCES, 2000b; OTA, 1995a; OTA, 1995b; Waugh & Godfrey, 1995; Wells & Anderson 1997; Young, 1991; Zhao, 1998). In its final report to the President and the Congress of the United States on December 19, 2000, the Web-based Education Commission (WBEC, 2000) stated that teachers are the key to using

Web-based education effectively.

It is the teacher, after all, who guides instruction and shapes the instructional context in which the Internet and other technologies are used. It is the teacher's skill at this, more than any other factor, that determines the degree to which students learn from their Internet experiences (WBEC, 2000, p. 39).

Teachers plan and implement the instruction going on in the classroom; therefore, we need to know more about the process of bringing the Internet into their working environments. We need to understand *how teachers are integrating telecommunications* in the classroom. We also must find out *what their perceptions are of the process* and *what their readiness to integrate Internet activities may be* (Chiero, 1997; Fabry & Higgs, 1997; NCES, 2000b; Zhao, 1998).

Research on integrating telecommunications projects in the classroom should not concentrate only on students and what they are learning. It should also attend to teachers and how they perceive the integration process. Asking novice teachers—teachers who are taking part in telecommunications projects for the first time—about their perceptions of the process may help illuminate their situations, giving us a better understanding of what they are experiencing (Windschitl, 1998).

Online project developers need to understand how teachers function as learners and attend to their perceptions of the experience of participating in online projects if they want to

encourage teachers to effectively integrate telecommunications projects in their classrooms (Wells & Anderson, 1997). Wells & Anderson (1997) stress that online projects could also provide support for users, and that gathering data about users' perceptions of a project can help correct design flaws and better assist teachers. Online support can also help to "eliminate confusion and [keep] the project running smoothly" (Stuhlman & Taylor, 1998, p.90). Developers need to provide online support and information to help facilitate the process of taking part in projects online (Stuhlman & Taylor, 1998).

We also need to understand that teachers who are beginning to use online projects in K-12 curricula are facing change. Administrators and professional development designers must make efforts to reach out to teachers, providing opportunities for them to learn, practice and plan for participation in online projects. By providing strong support systems, administrators can build bridges to make professional learning a journey that moves from the workshop to the workplace.

As teachers begin the odyssey of incorporating online projects into K-12 curricula, I feel that finding out their perceptions of the process will help us gain an understanding of what it means to be a novice in this type of instruction. As the WBEC (2000) reported, "It

is the teacher, after all, who guides instruction and shapes the instructional context in which the Internet and other technologies are used” (p. 39). It is time that we hear these teachers’ voices.

### **Chapter 3-Methods**

My interest in teachers' perceptions of integrating an online project for the first time stems from the roles I have played in educational telecommunications projects for the past ten years. My experience began as a fifth grade teacher in 1993, exploring what the Internet had to offer me as an educator and ways I could incorporate use of online tools and resources in my classroom. This brought me to KIDLINK, a global telecommunications organization for K-12 students. I began my first activities with KIDLINK as a novice in the area of telecommunications, learning from other teachers and students as I worked my way through this personally unknown area. As my knowledge of online projects increased, I moved from being a participant to becoming a designer of online projects for others. Additionally, in 1995, I began working as a freelance technology consultant, giving workshops on ways to integrate online projects in the classroom, and became the English Area manager of KIDLINK in 1998 (see Appendix A: Researcher as Instrument). As an online project designer, technology consultant, and manager, I have frequently worked with teachers beginning to integrate online projects for the first time, and I have found this group of teachers to be very diverse, particularly in background, needs, concerns, and interests. These experiences have led to my

interest in researching the topic of teachers who are novices at integrating interactive online projects.

### ***Research Paradigm & Perspective***

My first consideration after choosing the topic area of teachers integrating online projects for the first time was the research paradigm under which I would be working. The *paradigm* was the basic set of beliefs that “...serve[d] as touchstones in guiding” (Guba & Lincoln, 1989, p. 80) my research activity. It influenced my study “...by providing the assumptions, the rules, the direction, and the criteria by which” (Erlandson, Harris, Skipper, & Allen, 1993, p. 7) the study unfolded, including the questions I asked and the ways in which I interpreted my findings (Denzin & Lincoln, 2000, p.19).

I chose to adopt the *constructivist paradigm* to explore teachers’ perceptions of their experience integrating online projects. The constructivist paradigm assumes that reality is relative to the specific contexts of human action (Schwandt, 1997, p. 94)—that there are multiple realities (Denzin & Lincoln, 2000; Erlandson, et al., 1993). This is in line with my belief that teachers are a diverse group of individuals with various influences and experiences within their contexts. It also supports my belief that the role an individual plays is based upon a *contextual self*—a role based on the context and social dynamics occurring within the context that varies as



contexts change (see Appendix A: Researcher as Instrument)—what Guba and Lincoln (1989) call “created realities” (p. 143).

To explore the nature of created realities, researchers in the constructivist paradigm take a subjectivist approach. From this epistemological stance, constructivists see the study’s findings as a result of the interactions between the researcher and each participant in their co-creation of the participant’s story (Guba & Lincoln, 1989; Denzin & Lincoln, 2000). These constructions reflect the ways the researcher and participant try to “...*make sense* out of their situations, out of the states of affairs in which they find themselves” (Guba & Lincoln, 1989, p.70). As such, the story that I co-created with each participant reflects a joint construction that has emerged as a result of the hermeneutic, dialectic process of interaction (p. 180).

The next item I considered was the perspective or lens that I would be using as a philosophical orientation to the study. In co-creating knowledge, I took on a constructivist perspective. A researcher using a constructivist lens understands that there is no one *real* construct and that no construct can hold more value or weight over another. Each construct presented represents the participant’s current understanding and sophistication about the topic (Guba & Lincoln, 1989). Striving to present multiple stories

using a constructivist lens, the researcher provides multiple layers of constructs to depict the phenomena being studied.

Constructivist researchers also strive to depict participants' viewpoints through *thick description*. Thick description is an attempt to provide a detailed picture of the phenomena in context. The more detail that the researcher can provide through thick description, the more likely the reader will be able to find points of commonality thereby promoting sharing of constructs (Erlandson, et al., 1993). This type of connection—with the reader finding points of commonality with his/her own context(s)—depicts what qualitative researchers describe as *transferability*. Transferability stems from the thick description of the phenomena under study and the degree to which the reader is able to extrapolate personal applications of the findings (Patton, 2002).

These paradigmatic and perspectival considerations determined the research strategy that I used in this study.

### ***Research Strategy***

The research strategy I chose to use for my constructivist study was naturalistic inquiry, also known now as “*constructivist inquiry*” (Guba & Lincoln, 1989, p. 158). Constructivist inquiry methods incorporate a “set of specifications” (p. 173) that shape the particulars of a study.

Constructivist inquiry must be conducted in a natural setting (Erlandson, et al., 1993; Lincoln & Guba, 1985; Guba & Lincoln, 1989, Patton, 2002). This requirement stems from the constructivist belief that the participant's reality is bound to the time and context of the situation in situ. The phenomena under study should emerge naturally from the participants' real-world experiences (Patton, 2002).

Second, participants' constructions of the focal phenomena are emic and cannot be predetermined by the researcher's etic reasoning (Lincoln & Guba, 1985; Guba & Lincoln, 1989). Therefore, researchers using constructivist inquiry enter the study identifying only the study's focus and avoiding an a priori, presumptive position of knowledge about the phenomena (Patton, 2002). The study adapts as the inquiry "...deepens and/or situations change; the researcher avoids getting locked into rigid designs that eliminate responsiveness and pursues new paths of discovery as they emerge" (p. 40).

Third, due to the emergent nature of constructivist inquiry, sensitivity to the nuances of changes must be observed as constructions emerge. Thus, the researcher is viewed as the instrument of choice in this research strategy (Erlandson, et al., 1993). The researcher—as a human research instrument—uses

both critical and creative thinking in data generation and analysis. She is open to multiple possibilities; reflects on available options that can be considered; contemplates and examines patterns that arise; and makes linkages between constructs as they emerge throughout the study (Patton, 2002).

Finally, the researcher does not enter the study with a *tabula rasa*—she brings her own background and experience into the investigation. This tacit knowledge is evinced in the reflections and insights of the researcher and in the researcher-as-instrument document (see Appendix A: Researcher as Instrument). It can also be observed in the interaction between the researcher and participants as a “...sense of connectedness develops...in their mutual efforts to elucidate the nature, meaning, and essence of a significant human experience” (Patton, 2002, p. 108).

### ***The Sample***

The participants in this study were first chosen in January and February of 2002 in order to take part in the pilot study for my dissertation. The pilot study ended in July 2002 after one complete interview round. Data were generated and the initial analysis began concurrently. In the fall of 2002, the pilot study data were merged into my dissertation data in order to continue the study to its natural completion.

Participants were originally drawn from K-12 teachers participating in online collaborative or cooperative projects for the first time. I further delimited the sample to include teachers who had begun a project no more than six months prior to the first interview—teachers who were still in or not far removed from the experience of novices. The sample was made up of teachers varying in several ways (e.g. grade level, subject area, teaching experience), creating a descriptive mosaic. Six participants were included in this *purposive sample* that allowed me, as a constructivist researcher, to select “...information-rich cases for study in depth” (Patton, 2002, p. 46).

First, I sent out a general *call for participation* to the gatekeepers of the online project organizations from which I sought participants. The first volunteers who answered the call from the organizations and who met the sample criteria were chosen as participants. Each participant then received an Informed Consent form (see Appendix B: Consent Forms) that was written following the guidelines of a U.S. educational mandate for conducting research with human subjects in order to provide confidentiality and to minimize possible harm from taking part in the study (Office for Human Resource Protection [O.H.R.P], 2002). Informants were

told that participation in the study was optional and could be discontinued at their discretion.

After receiving a reply to my request for consent to participate, I contacted each informant and asked her to provide me with a pseudonym to use in the study. All names in the study are pseudonyms and locations are only generally described in order to maintain confidentiality (Erlandson, et al., 1993, p. 155). Confidentiality was maintained throughout all aspects of data generation and analysis.

Before beginning my second round of interviews (i.e. interviews conducted as part of my dissertation), I once again secured each participant's permission to take part in the study. I did this by sending out a second Informed Consent form (see Appendix B: Consent Forms) in which I stated the following:

You are invited to participate in the continuation of a study of perceptions of K-12 teachers who have joined online projects for the first time. My name is Laurie Williams, and I am a graduate student in the College of Education at the University of Texas at Austin. The study in which you participated earlier this year is now being completed as my doctoral dissertation study.

You are being asked to continue your participation so that I may complete the study. You were initially chosen because you on to took part in an online project hosted by one of the following online organizations: KIDLINK/KIDPROJ, 2Learn, ePals, Electronic Emissary, the Global School Network (Hilites Archive), or Oz-TeacherNet. If you choose to continue to participate in this study, you will be one of six people

involved. From now through June 2003, we will work together using phone interviews and e-mail to continue to develop the story that you have to tell about taking part in your first-time online project.

Once participants confirmed their willingness to continue in the study, the next rounds of interviews began. These interviews and subsequent interviews were all conducted via e-mail.

The next section describes the process I used for data generation and data analysis.

### ***Data Generation & Data Analysis***

In constructivist inquiry, data generation and analysis are not mutually exclusive phases that can be identified "...as occurring at some singular time during the inquiry" (Lincoln & Guba, 1985, pp.241-242). Constructivist inquiry is data-driven—accepting and anticipating changes based upon data as they arise. It is also inductive, with data analysis moving from simple observation and building toward general patterns and themes. Thus, data analysis begins as the study commences and, along with data generation, is an ongoing process and progression (Erlandson, et al., 1993, p.111).

In entering interaction with informants, the researcher must begin in as neutral a manner as possible, using an initial focus question rather than a pre-determined list of questions (Lincoln & Guba, 1985). I telephoned each informant for the initial interview. A sample of one of phone interviews can be found in Appendix C. I

began each initial interview with an open-ended question—“What are your perceptions of integrating an online project in the classroom for the first time?” From there, I followed the paths that the informant established through her recall of and reflection about integrating an online project as she weaved her story. This is because, as the researcher, I do not lay out new areas to explore. I followed each of my participants’ leads into “uncharted territory,” asking questions based on what the informants shared.

I assisted in the co-construction of the story by asking questions to help elucidate the participants’ descriptions. Questions that might frame answers were avoided, as they put the researcher in the “driver’s seat,” determining the course and content of co-construction. I asked questions to help expand and clarify my understanding and to encourage my informants to draw more detailed pictures. Throughout the interviews I maintained focus on my informants’ stories through the process of member checking. Member checking is a way to corroborate or verify the researcher’s understanding of the informants’ constructions. At this stage, member checking was achieved by briefly summarizing what I heard up to that point in time to be sure that what I understood was in concert with my informants’ perceptions (Erlandson, et al., 1993



The analysis of data began once the initial telephone interview was transcribed. First, I summarized the interview, using direct quotes from the participant throughout the summary. A sample summary can be found in Appendix D. This was then sent to the participant by e-mail for verification, further elaboration, clarification, and/or correction to ensure that the current summary accurately reflected her viewpoint. This was another form of member check, done to verify my understanding at another level of construction. At this same time, I began primary analysis by grouping ideas that seemed to relate to each other into named categories (see Appendix E: Sample of Categories). The categories I developed continually changed and evolved as the study progressed, emerging intuitively (Erlandson, et al., 1993). Themes in the study were thus grounded in the data and began to emerge inductively as I continually reviewed and refined categories, becoming "...models of how the phenomenon being studied really works" (Ryan & Bernard, 2000, p. 783). Some themes were evident across cases, while other themes were representative of only one case. These themes became part of the later stages of analysis.

The interviewing process continued via e-mail, a medium that the participants chose. A sample of an e-mail interview can be found in Appendix F. Questions for subsequent interviews were

derived from information gathered from preceding exchanges or other sources of information pertaining to the online projects that the teachers were helping their students to do.

Other data types and sources helped illuminate the informants' stories through triangulation (Patton, 2002). Triangulation involves examining a phenomenon from different vantage points and in varied formats from multiple sources to help expand meaning. Examining other types of data did not only help me to validate my informants' stories, but also added information that did not emerge during the interview process. Sources that I used for triangulation included: information about the project provided by the specific project's Web site; samples of student work posted on the project's or school's Web site; e-mail messages participants exchange throughout the project; digital images taken during the course of the project; and other artifacts specifically focusing on or created by the teacher and/or her class during the project. These additional data opened up other opportunities for inquiry in the co-construction of the teachers' stories by bringing to light new topics for discussion or information that required further elucidation (see Appendix H: Sample of Additional Sources of Information).

This iterative process of data generation and data analysis—a dialectic, hermeneutic cycle—persisted over a prolonged period of twelve months, fleshing out each informant’s story and providing thick, detailed descriptions of the phenomena. I also used two other techniques to analyze data and hone my *researcher-as-instrument* skills. One was *reflexive journaling*. In the reflexive journal (See Appendix I: Sample Reflexive Journal), I recorded my day-to-day decision-making processes and periodic reflections upon the process as a whole—the critical incidents, notes, and messages that I wanted to be able to recall. Another technique I used was to work together with others familiar with the constructivist inquiry process in what is called a *peer debriefing group*.

Peer debriefing helps build credibility [or truth value] by allowing a peer who is a professional outside the context and who has some general understanding of the study to analyze materials, test working hypotheses and emerging designs, and listen to the researcher’s ideas and concerns. (Erlandson, et al., 1993, p. 140).

My peer debriefing team was made up of two individuals who were familiar with past studies I had conducted, having participated in previous peer debriefing teams with me. They were also familiar with several primary issues that intersect with my field of study: telecommunications, teacher professional development, and/or use of technology in classrooms. We met regularly to discuss this study and to problem-solve around issues that developed in the

classroom-based projects and/or in the process of the study. We also communicated frequently by phone and e-mail. Team members were also working on their own research, so the peer debriefing helped them to share information about and receive assistance for their studies. Each week minutes of the meetings were recorded and then were made available for dissemination to the team (see Appendix J: Samples of Peer Debriefing Communication).

### ***Case Study Reporting & Cross-Case Analysis***

The data generation/data analysis process continued until “no new information [was] forthcoming” (Lincoln & Guba, 1985, p. 202), after a minimum of five interview/member checking sessions per participants. I wrote the initial results as in-depth case studies when each teacher’s story became redundant because no new patterns of information had emerged. The thick description I used to write the case studies “...open[s] up a world to the reader through rich, detailed, and concrete descriptions of people and places...in such a way that we can understand the phenomenon studied and draw our own interpretations about meanings and significance” (Patton, 2002, p. 438).

The final draft of each case study was sent to the teacher who helped to co-create it for a final *grand member check* to validate, correct, and then confirm that the story was indeed told correctly

from her point of view. I then used these case studies to create a final cross-case analysis of themes to report—both convergent themes across cases and divergent themes that arose within only particular cases (see Appendix K: Sample of Themes). This final analysis helps to push “...the reader to heightened perceptions” (Ely, Vinz, Downing, Anzul, 1999, p. 342), providing a metaphoric frame of reference that can aid in drawing inferences (Guba & Lincoln, 1989) and transferring results to other contexts.

Data generation and analysis that brought me to the final cross-case analysis and reporting were done using techniques and awarenesses qualitative researchers employ to ensure the quality of the study—expressed as of *trustworthiness* and *authenticity*.

### ***Trustworthiness & Authenticity***

*Trustworthiness* and *authenticity* are sets of criteria used to judge the quality of the results and processes of a constructivist inquiry (Erlandson, et al., 1993).

***Trustworthiness criteria.*** The criteria that comprise trustworthiness encompass points that evaluate the quality of the inquiry’s results. There are four “methodological criteria” (Schwandt, 1997, p.165) that must be met in order to demonstrate the adequacy or “quality” (Guba & Lincoln, 1989, p. 233) of a constructivist study.

*Transferability* is the degree to which a study can facilitate a reader's application of the findings (Guba & Lincoln, 1989). I addressed it using thick description, purposive sampling, writing the results from participants' points of view, and by providing sufficient contextual information for readers to make connections and find shared characteristics with their own experiences.

*Credibility* is found in the degree to which a study demonstrates its "truth value" (Erlandson, et al., 1993, p. 29). By following member checking procedures during interviews, after summaries were written, and in a grand member check with each informant when each case report was finished, I was able to ensure that my understanding was consistent with my respondents' perceptions and experiences. Persistent, prolonged engagement and triangulation of sources and data types helped to bring more depth to the cases.

A third criterion is *dependability*. It addresses the reliability of the process the inquiry follows, "...ensuring that the process was logical, traceable, and documented" (Schwandt, 1997, p. 164). I have kept logical, traceable documentation of my study by keeping thorough records of data categories and sources, providing coding definitions and noting creation dates, and documenting links to other sources and modifications made as they arose. This *audit*

*trail*—an organized form of record-keeping—helped me manage information and also provided a traceable record to be used for a possible third-party, external review (Erlandson, et al., 1993). My reflexive journal and minutes from peer debriefing team meetings also aid in documentation of the study’s process, and have become part of the study’s audit trail.

The final trustworthiness criterion is *confirmability*, which seeks to find evidence that data generated and collected can be traced directly to their sources, rather than to the researcher’s beliefs and expectations. For example, to meet this criterion, I kept careful documentation of data analysis through databasing categories and themes, linking chunks to lines in transcripts and recording each chunk’s link to assigned codes. This assures that an external reviewer can inspect my data and interpretations, tracking them back to their sources rather than to my biases and preconceptions.

***Authenticity criteria.*** Like trustworthiness, authenticity is a way to evaluate the goodness of a constructivist inquiry study. While trustworthiness focuses on methodological goodness, authenticity criteria focus on the study’s “outcome, product, and negotiation” (Guba & Lincoln, 1989, p. 245) and deals with the treatment of the participants’ concern for what they gain by

participating in the study. The criteria included under authenticity are: fairness, ontological authenticity, educative authenticity, tactical authenticity, and catalytic authenticity.

*Fairness*, the degree to which informants are treated equitably, is the one point of authenticity that can be planned and "...is readily documentable when it has been achieved" (Guba & Lincoln, 1989, p. 247). It is evident in three particular ways in this study.

First, I documented the informants' voluntary choices to take part in the study by obtaining informed consent in the ways described earlier. Second, at the end of each interview, I reconfirmed that the informants wish to continue taking part in the study by discussing upcoming interviews and contacts and securing their agreement to participate in the next step in the study. This was important, because researcher/informant relationships "continuously shift" (Erlandson, et al., 1993, p. 153), and the informants' participation needs to remain openly negotiable. I tried to provide easy access by setting up initial interviews at times most convenient for my informants. E-mail interviews were completed giving the participants a reasonable time period in which to respond. For example, in December, a month's time was given between the question and response periods to account for busy



school schedules and the upcoming holiday season. Some exchanges occurred with only a week between question and response periods, as participants' schedules allowed. If participants needed more time to formulate their responses, they were free to do so. Finally, I began the second round of interviews by reminding the informants of the nature of the study and the process for the upcoming interview. During e-mail interviews, I attached the previous interview summary for the participant to review (see Appendix D: Sample Summary) and then discussed the procedure for the next round of interviews.

The other points of authenticity are less straightforward and clear-cut (Guba & Lincoln, 1989), but can be seen in the dialectic interactions between the researcher and informants. They encompass "raised individual awareness" of participants (Lincoln & Guba, 2000, p. 180) and their decisions to take action that may emerge from participation in this study.

*Ontological authenticity* can be seen in the informants' raised awareness of the growing sophistication of their emic constructions. This criterion can be demonstrated by informant reports of improved understanding and by documented evidence of improved sophistication of the individual's constructs over time (Guba & Lincoln, 1989).

*Educative authenticity* becomes evident as individual informants expand their own constructions of the phenomena, learning through the hermeneutical process of reflection and dialog that are inherent in participation in constructivist inquiry. It is evidenced in both the informants' testimony of the change and by documented "...entries related to the developing understanding" through interaction with and understanding of others' constructions (Guba & Lincoln, 1989, p. 249).

*Tactical authenticity* becomes evident in participant testimonies. It refers to "...the degree to which stakeholders are empowered to act" (Erlandson, et al., 1993, p. 154). These testimonies may arise during the course of the study. Another way to determine if tactical authenticity has taken place is to interview informants after the study in follow-up sessions to document actions that informants have been empowered to take as a result of participating in the study.

*Catalytic authenticity* is revealed when informants make decisions to act based upon their new knowledge gained as a result of taking part in the study. It can be documented in informants' expressed resolutions to act (Guba & Lincoln, 1989) and actions taken that are directly linked to study participation.

During the course of the study, I kept the authenticity criteria in mind, documenting evidence as it arose. Raised awareness and decisions to take action are not limited to informants and authenticity criteria, however. It may also occur as readers make connections with elements of the study. This leads to discussion about the study's intended audience.

### ***Intended Audience***

This study's focus on teachers integrating online projects for the first time might be of interest to those who are stakeholders in this topic area. For instance, online project managers and project designers might be able to use the information to help them evaluate their own programs, either through constructs developed in the study, or by using a similar process to find out what their participants' impressions are of the organization or individual project designs. Technology coordinators and trainers might find the information helpful for designing workshops or support systems to encourage teachers to include online projects in their classroom instruction. Teachers interested in incorporating online projects might be interested in the stories that others in their position have to tell about the experience. For example, the stories might validate their own beliefs or give them ideas to try to incorporate themselves. Because the number of teachers integrating online projects into

everyday teaching and learning is still relatively small (Harris, 2002), researchers interested in collaborative and cooperative projects becoming more widespread might also be interested in experiences teachers have to relay.

The next chapter is made up of the case studies of each participant's experience integrating a telecollaborative or telecooperative project for the first time. Participants shared a rich source of information in the telling of their stories, providing experiential data that can be used for a variety of purposes. In our efforts to encourage more teachers to take part in interactive online projects, we should listen to what novices have to say about the process.

## **Chapter 4-Case Studies**

### ***The Participants***

This chapter presents the stories that six elementary and middle school teachers told about their experiences and perceptions of integrating an online telecollaborative or telecooperative project for the first time, using pseudonyms for the teachers and any other people or places they mentioned by name. Story generation began as part of the spring 2002 pilot study for this dissertation and involved one interview with each teacher. In the fall of 2002, and continuing through the spring of 2003, four more interview sessions—including member checking summaries after each interview—were conducted with each participant. The stories told by the teachers vary in depth and type of information due to the emergent nature of constructivist inquiry. Each participant's story began when she had been participating in an online project for no more than six months. The stories follow the progress and processes involved in project work during the 2001-2002 school year. Each participant took part in a project hosted by a different educational telecommunications organization, though two of the teachers also participated in the same secondary project.

During the interviews, each teacher shared information about her school, class, and community to some degree. Two of the

participants are fifth grade teachers, two are sixth grade teachers, one is a first grade teacher, and the sixth participant is the computer lab teacher who did projects with second and third grade students in a K-5 school. Each teacher also explained how she got involved in the project, how it ran its course, and how the project ended. The participants told of the excitement and energy that the projects promoted, as well as the frustrations and obstacles they faced when things went awry due to technical difficulties or time constraints.

### **Anise**

Anytime there is an opportunity to expand your horizons, I think it is worth the time and effort, especially when it benefits the students. It is great to open their eyes to the world outside of the classroom to new experiences and adventures.

**The teacher and her students.** Anise teaches sixth grade in a middle school in Missouri. The community where she teaches is in a suburb of one of the larger cities in Missouri with a population of approximately 30,000 people. Anise stated that the town is undergoing a change a change in the age make-up of the citizens. She explained, "The community is an older community but is going through a turnover with the older residents moving out and younger residents moving in." The school where Anise teaches has "over 1000 students." She described the school's ethnic breakdown as

“5% Hispanic [and] Asian, 30% African American, and 65% White,” which Anise said matches “[the ethnic] make up of the community.”

Students at Anise’s school go to seven classes a day, seeing seven different teachers. Anise works as the science teacher on the sixth grade team, with other teachers on the team teaching “social studies, reading, math, and English.” During the 2001-2002 school year, the sixth grade team worked with 130 students. Anise said that she only saw the students once a day, making it difficult to “really get to know them on a more personal level.” By participating in an interactive online project, “I’m getting to know them a little bit more, what their lifestyle is, what they do in the evening.”

***The project—Travel Buddies.*** *Travel Buddies* is an Oz-TeacherNet project for elementary and middle school-aged children (see Figure 4.1).

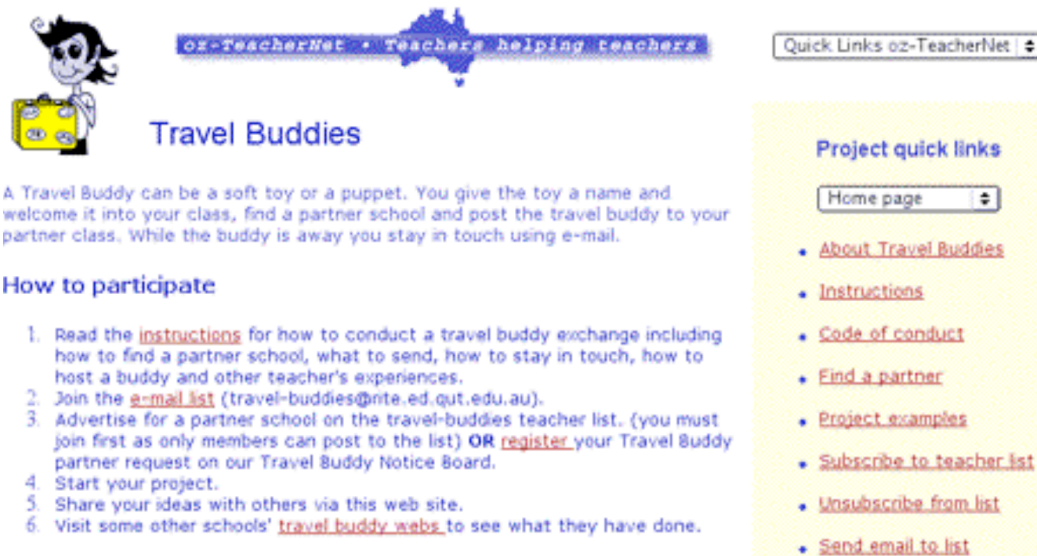


Figure 4.1. Travel Buddies opening page provides teachers with information and links to help them get started.

In this ongoing project, stuffed animals, soft toys, or puppets are used as class ambassadors in a cultural exchange. Each class packs its representative into a box along with regional items of interest and sends the box to its designated partner(s). Classes can choose to partner with just one school in a simple one-for-one exchange, or they may partner with multiple schools, rotating boxes among the partner classes. Through participation in the project, classes receive a box containing representative items from each partner class.

Teachers in the project can use travel buddies in different ways. Oz-TeacherNet staff members are available as mentors when



help is needed, or participants can ask more experienced project participants for help on the e-mail list. To begin participating, teachers subscribe to the *Travel Buddies* list and can post requests for partners. They can also register their buddy partner requests on the Web at the Travel Buddy Notice Board.

**Getting started.** In early 2002, Anise subscribed to an e-mail list for Australian teachers hosted by Oz-TeacherNet. She found out about the *Travel Buddies* project through news on that list. In February, “I posted an ad that I was looking for Australian Travel Buddies, and I got all of these replies back.” Since she worked with a large group of students, Anise decided not to get “just one travel buddy.” Instead, she got one for each of her classes with one partner for each, so that each class could “have a chance to have a buddy.” She eventually had six travel buddies from Australia, with one of her classes having two buddies come to visit them. The Australian classes they partnered with were either sixth or seventh graders in “primary school.” All of the classes were “pretty much in a self-contained type of classroom.” One teacher, Jay, had a self-contained class, but he teamed with another teacher, dividing up the subjects to be taught. His focus was on math, science, and technology. When speaking about Jay, Anise commented,

In a way, too, it makes me wish that I was in a self contained classroom because of all the ways that you could integrate it into different subjects...I don't see how you can survive otherwise, working all the subjects and not have a common theme.

Once her partners were chosen, Anise had more decisions to make in order to get started.

The next decision to be made was what items would be sent out to represent her classes. A former student had designed a cartoon character based on a stick figure named Mikey that Anise had developed "to introduce the rules to sixth graders because they are brand new coming into middle school." Earlier in the year, Anise had used Mikey as a character in learning stations she had around the room.

I had stations set up in my classroom to deal with measurement, and Mikey was packing his bags getting ready to go to Australia. He had to think about the temperature and calculate the temperature between Celsius and Fahrenheit, because we use Fahrenheit. He had to measure the distance in kilometers, because they use the metric system and we don't use that as much. There were some other stations, but I can't remember right off hand what they were. He got to chew gum and decide how many pieces of gum it would take for the trip between [our] city and Australia based on mileage and everything.

She decided to send Mikey as a laminated cartoon character, along with a little stuffed dog. "At the time, I thought that ...[the travel buddy] didn't have to be a three dimensional stuffed toy."

Along with the two characters, Anise's class added items of regional

interest to the box. Included in each of the six boxes was “information about our school, a book about Missouri, some postcards, a small flags, pencils, some stickers, some candy, and a journal” that Mikey (and their partners in Australia) would keep, documenting his adventures at each school that he would visit.

Anise felt that this project was something that her students could relate to, “like taking the little stuffed animals home and showing them around as if it were a real person.” As she communicated with the six different schools at the start of the project, Anise “didn’t know [how] the time frame would work, how long the Travel Buddy could stay, and I wanted the opportunity for all the kids to be able to take home the stuffed animal if they wanted to.” This was the reason that she made the decision to host more than one travel buddy. She was hoping that the project would last until the end of April or the beginning of May, since her school year ends at the end of May.

Once she had determined *who* her students’ partners would be and *what* they would be sending to them, Anise had to decide exactly *how* her students were going to communicate with their partners.

Our school district does not have a separate account for the kids to use, so I set up e-mail accounts just through Hotmail. I didn’t really like that, but that’s the only alternative that I had at the time. So I have a different Hotmail account for

each one of my classes... I call it Mikey, Second Mikey, Mikey Third, and Fourth Mikey and so on.... Our school district just did this bond issue and we just got new technology this year, and so I'm not real familiar with what their policies are at this time. But they are concerned about kids going to inappropriate Web addresses and that kind of thing, and I monitor that.

Because she was "afraid that they might type in something that was inappropriate," Anise paid close attention to what her students were writing, monitoring them closely. "I type in all the address stuff, and then they type in the message and then I have to proofread it before they can send it, and I correct errors. I just want to make sure of what they are sending too because I don't want to get in trouble."

She looked for errors in grammar and punctuation. She also monitored the content of the message to be sure that the students didn't write "something that was inappropriate. For the most part, they are okay, and they haven't done anything that is inappropriate or anything. I was just concerned about that at first." She didn't particularly like using Hotmail, because she didn't like

some of the advertisement stuff that comes up on there, but I've got the junk mail thing set. And I always preview everything before the kids get to it, too, because I'm the one who opens it and deletes anything I need to delete.

Unfortunately, Hotmail was the only account alternative that she could discover at the time for handling e-mail between her classes and the Australian classes.

Once the project got started, her students were eager to receive their partners' travel buddies. "They [kept] asking everyday, 'Is our travel buddy here?'"

**Getting involved in the project.** As the travel buddy boxes finally started arriving from their partners, the students went through and analyzed what they found in them. Travel buddies that came for a visit from their partners included various stuffed animals: a cow, a bird, a kangaroo named Macca, a kookaburra named Kookie, two koalas that Anise's students named Kyle and Kylie, and Bilby, named for the endangered Australian marsupial it represented—the Bilby.

When we first started the project, the fact that Australia's on another continent on the other side of the world, and they knew nothing about it, and the time difference has been something that has opened their eyes. When we are starting our day, they are ending their day.

The students really enjoyed learning about their partners' cultures and comparing it to theirs. Anise found it to be very enriching to have her students share information about their different cultures, learning to be "understand[ing] and be more tolerant of other people," and learning more about the geographic and environmental differences between Missouri and different regions in Australia.

We were trying to compare the weather from here to the weather over there and we pretty much have four seasons, and they have the four seasons, only it's warm all the time

and it doesn't get as cold as it does here...We're still learning things about them, and it's just a real fascinating experience.

In one of the boxes that arrived there was a popular Australian teen magazine. Anise commented, "The things that were in the magazine were very similar to what the kids have in the teen magazines here." Yet her students found that even though food items might be the same, "[they're] called something different there." They also learned that Australians use a different type of "hello" than we do in America—"G'day."

One area in which Anise's students were particularly interested to investigate and compare was schools. They discovered that one of the schools had a swimming pool with "swimming lessons for their gym classes." Another difference unveiled was that school days are shorter in Australia than in America, with the Australian students getting out an hour earlier than the students in Missouri. Another time comparison that made Anise's students "want to go over there *now*" was that the Australian students have a 45-minute lunch period "compared to our 20-minute lunch." Comparing school clothes, Anise's students found that their partners had to wear school uniforms, including "hats when they go outside and proper shoes" for playing on the playground. If they don't wear their hats outside, "they have to go to a safe spot" or "thinking bench"—like "time-out" areas here. Anise said that

although the terms might be different, “the whole philosophy of the discipline is the same as the discipline here that we use.”

Besides analyzing what was in the box that in which their travel buddy was packed, students in each group treated their buddy like a member of the class, and had opportunities to take the buddy home with them. In some classes, students were able to take the buddy home more than once. As the buddy experienced school days and evenings at home with the students, the class kept a journal of the buddy’s activities. Anise was surprised to find that “the little boys in my classroom want to take the koala bear home and...show it around.” She really hadn’t expected boys to take this kind of interest in the stuffed animals in the project. However, it was boys in her third period class that came up with the names for the two koalas they had as buddies. They had chosen the names Kyle and Kylie by going through a baby name book, “which I found...fascinating, because I didn’t think I could get sixth grade boys to go through a baby name book and look for names.”

Anise was a little hesitant about allowing the buddies to go home with her students, “because they are notorious for not turning in their homework...and I was just really skeptical about as to whether or not it would work out.” She thought that students would forget to bring the buddy in each day, “and we would just be

up a creek.” Students alleviated her doubts, however, because they always brought the buddies back to school each day to be able to review “what the travel buddy did for the evening.” Anise was pleased with the efforts the students put into getting the buddy back, as well as their efforts to keep up with their journal writing.

[T]hey are writing in the journal and being very detailed, so detailed that it gets boring. At the beginning of the school year, it was difficult to get them to write a complete sentence, and then they are writing pages and pages in these journals that they are keeping. Then the fact that they get to do the e-mail the next day, too.

Anise’s students couldn’t wait “to share what the travel buddy [was] doing here.” At the beginning of each period, Anise had a sharing session to discuss what the buddy’s activities had been. Some of her students made clothes for the koalas, and one boy “brought in a car this little koala bear would fit in. They [were] just treating them like real little visitors, and I just [thought] that’s really fascinating.”

During the sharing session, Anise also read aloud any e-mail that had come back from their partners. Her students liked hearing about “what Mikey [was] doing over there and what his adventures [were] and what their lifestyle is like compared to our lifestyle.” Having shared in their e-mail about what Kyle and Kylie were doing here, telling the partners that the two koalas had gone out for pizza and shakes, Anise’s students received information that prompted comparisons between omnivores, herbivores, and carnivores. The



partners warned Anise's students that since the koalas were herbivores, having pizza and shakes tampered with their diet. As a result, the Missouri students became very conscientious about what the koalas were eating,

making sure that the koala bear is eating lettuce and that type of thing. It's a stuffed animal, but they are making sure that when they write back in the e-mail, they pretend like it's eating the lettuce or whatever an herbivore would eat. So I just thought that was really something that they can apply the situation to something in real life.

Early on in the project—and prior to sending out some other boxes— Anise and her students also got word from Jay, the teacher in one of her partner classes about his class' reaction to the box they had received from Missouri. Anise explained that “Jay didn't tell me what they said, just that they were disappointed that [Mikey] was [a] flat, [laminated character,]” rather than a stuffed animal or toy.

So I apologized and everything because I felt bad, but at least we sent a stuffed toy, too. But one of the parents went ahead and made the Mikey doll and I was just impressed. And it's so cute. They sent pictures of him and it's really a cute little doll that she made. I thought that was really fantastic.

Anise hoped the partners would send the doll back in the Mikey box so that she could use it again. Some of her students took this to heart and went home and made their own Mikey dolls, one of which was included in a box they sent out to another partner. Anise was pleased with the efforts her students put into making their dolls:

“they did their very, very best, but the one that the parent made over in Australia was just adorable. It makes me feel like wanting to go market it or something.”

**Communication between participants.** Anise felt that this communication between the students—talking about what their buddies were doing and comparing lifestyles—was “the biggest factor of the whole thing.” Communication varied, however, among the various schools that participated in the project with her. At one extreme, there was a teacher who very rarely communicated with Anise and her students:

After the first couple of weeks, she (the teacher) and I didn’t communicate by way of personal e-mail. I thought it was coincidental that we shared a common interest. Then at the end, I e-mailed that we were wrapping up our year and she didn’t e-mail back to say good bye and simply mailed the package back, which was waiting for me when school resumed in August. We e-mailed a few times at the beginning and she sent photos, but after a couple of weeks, I didn’t hear from her.

On the other end of the spectrum, the students that Anise’s third period class communicated with e-mailed regularly each week. Anise was able to make a connection with the other teacher—Jay—because she found that they shared many of the same ideas about teaching. Jay also was able to help her with the project, because he had participated in *Travel Buddies* previously. What Anise particularly liked about working with Jay was that he

kept up communication with her about the project and other issues. “[H]e called on the phone a couple of times so we could know each other better, and we corresponded with personal e-mail.” She felt that this willingness to take part in more communication and dialog between participants made the project “more successful.”

It was during this communication that Jay and Anise, both science teachers, decided to tackle two more projects, expanding upon the *Travel Buddies* project.

***Expanding on the project.***

[M]y third hour class is the most involved, because the teacher that we are corresponding with is more involved than the other teachers are. That’s why it’s being so successful is because of the communication between him and between me, and the other things that we’re expanding. We’re trying to expand our project to more than just the *Travel Buddies*. We’re trying to do some other collaborative projects.

As communication between Anise and Jay continued, they began to consider working together on projects that incorporated science curriculum objectives. Jay proposed that they work on developing animal trading cards, while Anise proposed developing a hollow egg project.

Jay’s students had already begun to think about animal trading cards that described different animals and their habitats. “He focus[ed] on the ocean habitat and the rainforest habitat, and I...focus[ed] on the prairie, the forest, and the river.” The two

teachers planned to have their students compare the habitats of Australian and U.S. animals, thereby becoming “more familiar with habitats.” Jay’s class offered to make a trading card “to send over here” as an example. It was being developed by one of the students, and Jay planned to “refine it” prior to sending it to Anise.

Anise outlined the basic information that would be required on her students’ trading cards, including characteristics of each animal. She also had them “choose an interesting fact [about the animal] to add.” Anise considered taking it a bit further and looking at food chains.

The students in Missouri chose their animals from a list of regional creatures Anise provided: deer, several types of snakes, “squirrels, raccoons, fish, wolf, fox, [and] birds.” Her students used computer paper to write the facts in freehand. They then drew a picture of their animal on the back of the card. “I laminated them to send back to Australia.” Jay’s students made computer-generated cards that he laminated and sent to Missouri. Anise commented on them, saying, “They were very keen cards.”

Next, Jay and Anise discussed the hollow egg project that Anise wanted to do. Unfortunately, due to time constraints, both classes couldn’t participate fully in the project. The two teachers modified Anise’s expectations so that they could still work on this

collaborative project in a shortened timeframe. The project involved development of packaging that “would protect a hollow egg from the handling of the post offices between here and Australia.” Since Jay’s class didn’t have time to develop and send eggs, they opted to report on the conditions of the eggs they received. They would also choose the best packaging design from among those that Anise’s students developed. Five groups of Missouri students developed packaging strategies.

[T]hey have a size requirement that a parcel can be no bigger than six inches by six inches, and plus they have to have a low weight because of the cost of postage and everything. They cannot use any commercial packaging, bubble wrap, or any of the stuff that you would buy.

Anise explained that a student in each group first hollowed out the group’s egg by poking a hole into both ends and then blowing on one end to empty it of its contents. Next, the eggs were packed into small boxes padded with things like cotton, tissue, and beeswax. Unfortunately, not all of the eggs made it through Australian customs. Four of the five made it to Jay’s school without breaking. Jay’s class received a letter from the Australian customs department informing them that if they wanted the package containing the fifth egg “they would have to pay \$40.00 to get it released from customs.” Anise said that Australia has laws prohibiting transportation of poultry products into the country “for

fear of disease.” Of the remaining boxes, none of the eggs were broken in transit. The Australian students chose the beeswax packaging as the winner “because of creativity in packaging.”

***Mikey returns and the project ends.*** Anise’s students enjoyed the different activities in conjunction with the *Travel Buddies* project in which they participated. As the school year drew to an end in May, they eagerly awaited return of the various Mikeys they had sent out. They also began sending back their partners’ boxes. The boxes coming in from Australia didn’t all arrive at the same time. Four of them returned prior to the end of Anise’s school year. Anise tried e-mailing the other two partners to get them to get their Mikeys back to Missouri, but as mentioned previously, one didn’t get back until August. However, the students enjoyed finding things in the return boxes that did come in. Among the items they received in return were: stickers, candy, postcards, pictures, small toys, flags, pins, bumper stickers, “a mini surfboard (Mikey went surfing),” information about partner schools and attractions in their cities, and a Steve Irwin poster. Each Mikey also brought back his journal that the partners completed, detailing Mikey’s adventures with them. Said Anise, “Mikey has had quite the adventure going to all of these different places,” and Anise’s students had quite the

adventure as their horizons expanded, “opening their eyes to the world outside the classroom.”

**Anise’s reflections.** Anise felt that participating in the project was “really enriching” and “worthwhile.” The most important aspect of the project for her was that her students were able to “learn more about other people and other places.” Besides being enriching and worthwhile, the project was also fun for both Anise and her class. “I would like to take things further in the future with more collaborative projects and visits to other classrooms that I might collaborate with.”

Anise was surprised to find the interest that parents had in the project. This surprise was first evident when Anise learned that one of the Australian parents had made a Mikey doll. This had led Anise to think about marketing the character. Evidence of parent interest on her side of the world was that parents began collecting “pop top tabs to help pay for postage for Mikey to travel again.”

While participating in the project, Anise began to consider different ways that she might incorporate the *Travel Buddies* project into her curriculum in the future. One consideration is based on the

impact as far as Mikey and the kids being involved with this Mikey character and so, next year, I want to start off at the beginning of the year sending him some place, and maybe try not just one country but several different countries.

Anise would also like to get other members of her sixth grade team to join her in the project. She wants to make it a “whole team experience” rather than “just a science experience.”

I don't know if they just don't want to work it into the curriculum or what. I know the English teacher is pretty set in her curriculum and what she wants to do. The social studies teacher, I got an e-mail for a Travel Buddy in Argentina and so I gave it to him. He did e-mail back, so I'm hoping that he will be able to follow through with it, too. We have already talked about ideas like making Mikey a whole team thing and not just in my classroom. So he's been a little bit more willing to participate with it. He's a math teacher. He should sit down and get it all organized for next year.

In the meantime, Anise is now waiting for her team to join her. Instead, she already made plans to work with Jay again. She felt she had been lucky to work with him on her first project, since he “knew the ropes,” and she also has “really enjoyed working with him.” She contacted him by e-mail to discuss collaborating with him in the fall of 2002. They also considered having him come to Missouri to teach with Anise and Anise going to Queensland to teach with him.

That would be really fascinating. You have to find, I guess, the right person. Because, like I said, there are six other people that I've collaborated with, and he is the one that I have corresponded with the most and have had the most success with so far.

Taking part in *Travel Buddies* has opened new vistas for Anise and her students. As Anise put it,



I am really enjoying it, and I think it's a real worthwhile type of an activity to participate in. I think it's really enriching.

In the next case study, another teacher shares her experience of integrating an online project for the first time. Elaine, a fifth grade teacher in a suburban Texas school, chose to participate in the Electronic Emissary project to “enhance” a unit in her social studies curriculum.

## **Elaine**

I think it is important when you are a teacher to go in with more of a constructivist outlook, or persuasion, where you realize that things are going to build as you are going along, that you're not going to be able to have this set plan. I think that even if I were to do the exact same project with very similar students, with another subject matter expert (SME), I think it would turn out totally different.

***The teacher and her students.*** Elaine works with fifth grade students at a suburban elementary school in Texas. Like Anise, Elaine's school is in a town near large metropolitan area. During the 2001-2002 school year, Elaine had 24 students in her class. "[T]he school is middle to upper-middle class. We have no low SES students in the classroom," and her students have had little contact with "minority students." Continuing to describe her class, Elaine said that she had four students who didn't fit in the Caucasian category like the others did. Two are African American, one is Hispanic, and one is Greek. The child who is Greek "lived in South Africa for a long time before he came over, but he's not an American citizen." His family moved to the U.S. approximately four years ago. Seven of the students in her class are labeled "gifted and talented, and are actually pulled out for a pull-out program approximately about five hours a week." There are also several students "who are on medication for attention deficit hyperactive disorder."

Elaine teaches in a self-contained classroom. “I have the students all day. I teach them all the core subjects: social studies, math, English, language arts, reading, and science. Every other day, they go out for enrichment, which is Spanish.” Her students also go to P.E. every other day and have either art or music on the alternate days, depending upon the semester. Computer lab access is also on a rotating schedule. Elaine has access to the lab in alternate nine-week slots. She also has two computers in her classroom, both connected to the Internet. “So the students have been going to the lab, most of them know how to type, they are pretty computer literate.”

***Preparing her students to become “leaders.”*** Elaine said, “The students read fairly well. They are all on grade level, if not above grade level.” Elaine uses novels as a vehicle to teach reading, but when the students first come to her, they are not accustomed to the method she uses to teach reading through novels: literary circles. Working in groups of six to eight, each student takes on a responsibility in the group. The “group leader” is responsible for leading the group discussions. A “summarizer” usually goes first, helping the group to understand the key ideas, conflicts and characters in the story. Elaine has the “literary luminary” take charge of “bringing out any literary elements that

they want to speak about.” The student taking on this role reads aloud—or has others read aloud or silently—sections of the story that he feels are important, intriguing, funny, thought-provoking, or well-written, and worthy of discussion. “Vocabulary enabler[s]” take note of how the vocabulary is used in the text, specifically pointing out “rich vocabulary.” A student taking on the role of “connector” is to attempt to make connections between the story and real life and to share these insights with the group. Literary groups may also include “investigators,” who are in charge of locating information or additional sources that might relate to aspects of the story.

Obviously when they came to me, they weren’t aware of any of that. So at the beginning of the year, I did a lot of modeling. I started out, today I would say, “Today I’m going to put the hat on of a discussion leader,” and of course we’d all read something.

Elaine would then take on the role of “discussion leader” for a group of twelve students, leading the group’s discussion about the different novels they were reading. The next time they met in reading groups, Elaine would call on a volunteer to share the role of discussion leader with her. Once students became comfortable with what that particular job entailed, Elaine introduced the next literary circle job, repeating the process.

Once the students...understood what they were doing and what I was expecting, when they form groups, I just move from group to group. When I move, I just move as a participant. I do not take my teacher role again, or I try not to.

Once her students became accustomed to working in literary circles—also known as book talks—they began using literary circles for the novels they read.

When student group members got together to discuss a book, the group leader led the discussion, focusing upon topics that he chose. The students asked questions of each other and learned from each other. Elaine observed, “Rarely do the students sit there and work on a worksheet. It’s pretty interactive.” Elaine wants her students to learn to be discussion leaders, assuming the responsibilities that being the leader entails. “I’m not saying that sometimes I don’t ask a question to point them in a direction, but I really would prefer for them to do that themselves. I think that whole learning environment goes very well with the project.”

***The project-Electronic Emissary.*** The Electronic Emissary began in 1993 as a service to match K-12 teachers and their students with subject matter experts (SMEs) in different discipline areas (see Figure 4.2)

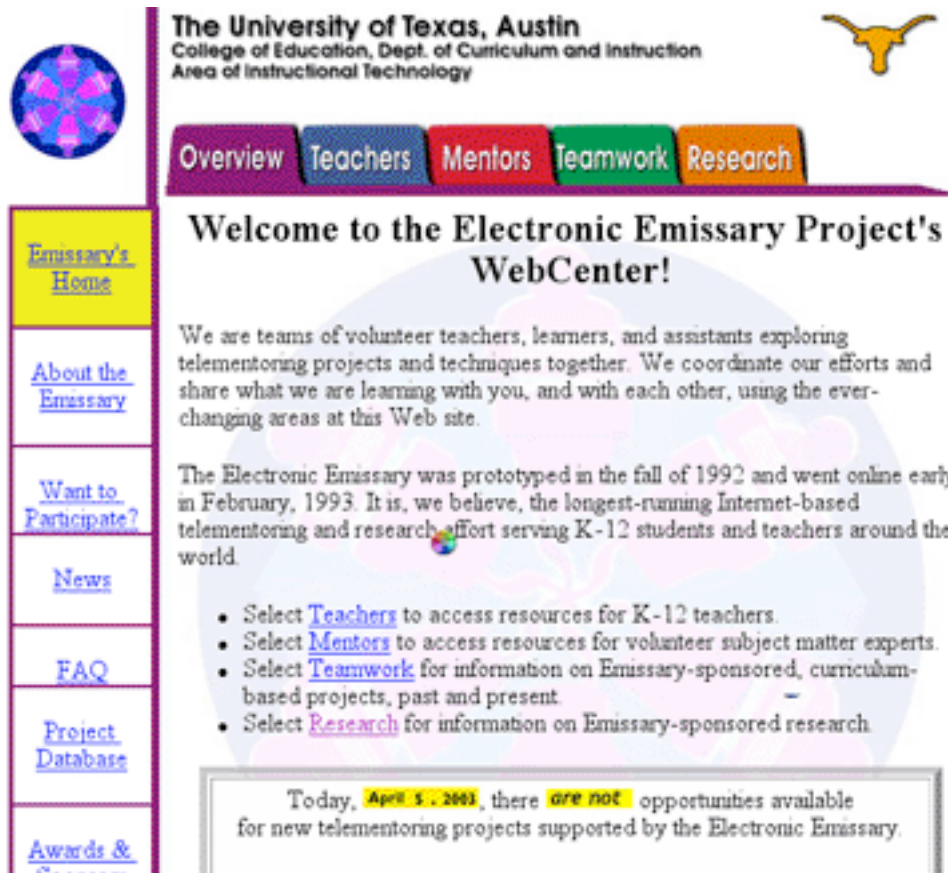


Figure 4.2 The *Electronic Emissary* project's opening page suggests links for various audiences and types of information.

The matches are set up in order to enrich and enhance curriculum-based lessons for which the teacher is seeking a SME. The telementoring exchanges occur via e-mail interaction, and a facilitator is provided to assist each project as needed.

The type of project and the extent of interaction are dependent upon the teacher's desires for the project. When a teacher is interested in securing a SME to work with her student(s), she looks through their online database of mentors to find a match, and contacts Electronic Emissary personnel requesting a particular SME. Once the match is secured—with both the teacher and SME agreeing to take part in the project—a special e-mail list is set up for communication among parties in the project. Initial communication between the teacher, SME, and facilitator is intended to help establish the boundaries and expectations of the project. For example, in October 2001, in a first message to the list, Elaine's facilitator wrote:

Hi Elaine and Josh!

Your e-mail list is ready to go! (I bet you could tell that from the subject line, huh?) This is a good time for the two of you to introduce yourselves a bit and start talking about how you want to "do" the project. I'm here to help along the way, but one of the best things we can do to make things run smoothly is to clarify at the beginning what each of you is expecting to happen. (This is a great time to talk about how often you plan to e-mail each other.)

You will use the [Electronic Emissary assigned e-mail address] address to communicate with each other. The only people who have access to this list will be the two of you and myself (a copy of the messages also goes to the archive on the *Electronic Emissary* server computer).

If you have any questions, please feel free to message me either through the list or at my [facilitator's e-mail account] address.

Have fun!!  
Kristen

After tackling initial steps like these, the exchange of messages could begin.

**Getting started.** Elaine first found out about the *Electronic Emissary* project through an e-mail message sent to her from the University of Texas at Austin. "I thought about it and thought, 'That would be a neat thing to try with our classes or with my class.' So I responded and decided I wanted to do a project centered around the Civil Rights Movement." This was a topic that she had to address in social studies. Like Anise, who felt the *Travel Buddies* project would help to enrich her science curriculum, Elaine felt that a unit developed as an *Electronic Emissary* project would help to "enhance the [civil rights] unit from what I had done in the previous years." She then went online to fill out the application to request a SME whose realm of expertise lay in the area of the Civil Rights Movement. She said, "I guess using that information, they must have matched us."

While Elaine was waiting to hear about being matched with a SME, she considered different ways that the project might work for



her. The first option she considered was interweaving the exchange with an online mentor into a research project she had planned for her students. They would choose a person or event from the Civil Rights era or connected to the topic of civil rights and use various sources to write a research paper. "I was expecting to teach them how to take notes, and then once they got their notes, how to organize them, and then to eventually write that into an essay." The second thing she wanted to do was to have her students take what they'd learned, selecting "the most pertinent events or information and do a PowerPoint presentation." She was hoping to be able to have the students share their presentations with the school in February 2002 during Black History Month. She was also hoping was to have her *Electronic Emissary* SME help her and her students get in contact with people "who had either lived through the events, saw the events," or who were aware of the events going on at the time. She wanted her students to interview these witnesses as primary sources.

However, getting started with this project was difficult for Elaine. Several issues arose that deterred her students from proceeding as quickly as she had hoped:

It took a lot more time getting started, and initially, I thought this project was going to take place during our enrichment time. That just never occurred. There were just a lot of distractions, and finally, I just made it part of the actual

language arts and social studies curriculum and we got it done. All of that is concerned more with timing on my part.

Being on a nine-week cycle to use the computer lab also became problematic for Elaine. In October, when she and her students began work on the project, she had had lab access. Since the project launch took longer than she had planned, she found herself in the next nine-week cycle—when her class couldn't use the lab. This meant that her students had to work from her room, “and only one or two students could get on the computers at a time.”

Elaine also had to consider how her students would maintain contact with their SME. “I was hoping that they could just directly contact him with each student initially having their own e-mail.” However, like Anise, her district's policy does not allow students to have individual e-mail accounts. Elaine decided instead that she would use her own e-mail account to communicate with Josh, her SME. “I would go ahead and address it, and add the subject, and then the students would just type it and sent it...I would then proofread it and send the message. It was not a big deal.” Thinking about this in retrospect, Elaine realized that using this process allowed her to monitor students' messages. It also allowed several students to post requests in the body of the same message. “The mentor probably appreciated not getting 25 messages every day.”

Another type of problem also arose during the project's initial stages that had to do with communication. It was not lack of communication, such as Anise faced with her Australian partners, but levels of dialog and finding common ground on which to begin an interchange of ideas that challenged both the SME and the students.

Maybe I expected too much. I think at the beginning, the SME wasn't sure how to help the students. I don't think he realized what fifth graders were capable of. Several times we wrote him and asked him for resources. This was during the research period.

Elaine described the process as "back and forth," trying to get Josh to understand the levels at which her students functioned. Elaine believes that when she told Josh that her students were reading *The Watsons Go to Birmingham*, he finally "realized the level of the students."

So initially, I think we were a little bit off-track, and then it took us a few times of communicating back and forth before we were both on the same track.

### ***Getting the project going.***

Throughout the entire time we were working on the project, I read probably about six to eight different picture books [to the students] that were related to the Civil Rights Movement.

As the project began to move forward, Elaine and her students incorporated novels and picture books into their study of the American civil rights movement. Students kept journals while they

were reading, and they used their literary groups to discuss the stories. Elaine also assigned various additional activities for students to work on in conjunction with the stories.

Some of the activities that went along with the readings of the picture books and the novel, *Watson's Go To Birmingham* were Literary Circle discussions. Initially the students did a *KWL* chart, (what you know, what you want to know, and what you learned) about Civil Rights, and we added to the chart each time we read a book. [The students kept] literary journal responses, [completed] inferencing activities, wrote point of view papers about a civil rights incident of their choosing. [The students also rewrote] scenes from the books, focused on civil rights' leaders, and talked about [why] they were heroes.

The first book that they studied in their literary groups was Christopher Paul Curtis' Newberry Honor book, *The Watsons Go to Birmingham – 1963*. Curtis blends a fictional coming-of-age story with the factual 1963 tragic bombing of the Sixteenth Avenue Baptist Church. The story focuses on Byron Watson, a young African American boy from Michigan—who is at risk of becoming a juvenile delinquent—who travels with his family to the racially tense Southern city of Birmingham, Alabama. The reader sees the story of the bombing through the Watson family's viewpoint.

Elaine and her students first discussed Curtis' literary style. Then they extended the story by following a current court case that was tied to the 1963 event in their local Texas newspaper.

There were articles in the newspaper about the case last year at about the time we were reading the book. The students couldn't believe that a person could be brought to trial almost 30 years later.

Elaine also was able to take her students to hear the author, Curtis, when he came to town as part of a Barnes & Noble event. They got to "speak with him and meet him."

Another book that Elaine and her students read about and expanded upon was the picture book *Freedom Summer*, by Deborah Wiles and Jerome Lagarrigue. It follows the story of two young boys who are friends during the time of desegregation in the South. One boy, the narrator of the story, is white, and his best friend is African American. The focal point of the story, as Elaine described it, is on the desegregation of the local pool.

They were really good friends, did a lot of things together. The African American's mother was actually the housekeeper for this other little boy. But they used to play together all the time and go swimming in the river or the lake or something. Then a law passed that African Americans could now swim in the city swimming pool. So the boys were really excited and they went to swim in the swimming pool, and the swimming pool had been filled up with cement. So they were so very saddened but decided that's okay because now they can go get ice cream, which before, the little white boy had always gotten the ice cream for both of them. They both walked into the ice cream parlor, and that's how the book ends.

Elaine had her students write an alternate ending for the book, asking them to describe, "How did it happen? How did it

finish?” In discussions surrounding the book, students related incidents during which they had experienced discrimination.

I remember that one boy in particular related an incident that happened when he moved from a foreign country to our school. Boys in the classroom were making fun of him...Students made fun of his accent and the way he spoke. Even after being in the country for several years he still had several distinct phrases...I can't recall anything exact except that I believe he would use the word *tissue* instead of *Kleenex*. He also would use the word *lad* instead of *boy*, phrases like that.

As they were reading and discussing various books that touched on the topic of the Civil Rights Movement, students began working on their research projects. Elaine planned it so that two students would work on researching the same individual or event. Elaine explained, “they were to each write their own first draft” explaining the significance of the event or individual. The feedback the class provided to each pair helped them to refine their work before turning in their final drafts. Elaine posted a note to the list to involve Josh in this planning process.

I am going to list a few events that I thought the students could research. Being more familiar with the topic, if you think that there are other events that would be more pertinent, or if you know that an event that I selected will be hard to research, let me know. My goal for this week is to nail down the research topics.

Elaine sent Josh her next message in the form of a timeline. Each entry in the message detailed the year that the event occurred or the person became significant. This was the list from which she

proposed to have the students choose their topics. Josh looked it over and added information that he thought was pertinent. Students then chose the foci for their research. Elaine designated one of the two investigating each topic as the “lead researcher” and sent the students’ topics to Josh. Her list included the following people and events that she and her students were considering:

- 1954 [Brown v. Board of Education]
- 1955 Rosa Parks
- 1957 Central High—Arkansas
- 1957 Garfield High—Seattle
- 1960/1960 Protests—Sit in Movement/Freedom Rides
- 1962 James Meredith—University of Mississippi
- 1964/1965 bills—Civil rights 1964/ Voting rights 1965
- Riots: Watts 1965/ Los Angeles 1992
- Ralph Abernathy
- Black Panthers
- Dr. Martin Luther King, Jr.

**Communication during project activities.** Students then began researching their topics, looking through sites online and through sources in their library. Josh said that he would help students if they had questions as they went through their primary sources. He asked that they “write an e-mail to me and also you indicating the topic. Then I can get a feel for what they are doing. I could then send each a brief response back.” As they worked on their drafts, students e-mailed Josh with their questions. The following is an example the exchange that occurred between the students and their SME:

(student message to Josh)

Dear Dr. K,

I have been researching the L.A. riots and I don't understand why the African Americans destroyed their own neighborhoods. Can you explain that to me?

(Josh's response to the student)

You have identified one of the major and most difficult questions from this and other riots. It does seem that anger and frustration just overruled common sense. This is true not just of LA but of other riots that have occurred.

The students continued working on the research, and when they had their first drafts ready, each pair gave a presentation to the class. Elaine commented, "One of the most useful things is that we all got together and brainstormed, 'Well, what are we going to do—Let's think of questions [for each researcher pair] as a group.'" This was not intended as an editing session. It was a way to disseminate information to the class and to bring up further questions that might need addressing.

They were giving background information, explaining to the other students who their person was, why they were significant, and what occurred. Then as a group, we all brainstormed on what else we wanted to know and how [Josh] could help us with that.

Elaine felt that Josh's help during this stage was "phenomenal." Elaine felt that Josh shared information from perspectives that she and her students would never have considered.

We had always thought that probably the racial discrimination was in the South because of some of the racial



laws that were being passed. But he gave us a whole other perspective and explained that a lot of the reasons the South didn't want to pass some of the laws [were] because they were so adamant about states' rights. Well, that was something we had never thought about...So he shed light on perspectives that I, as a professional teacher, nor the students, through their research had found and so it was really exhilarating as far as that's concerned.

There were times when Elaine's students asked Josh questions to which he didn't have answers. Either he didn't know the answer, or "the kids asked trivial things. For example, one of the students wanted to know why Rodney King was stopped initially and he didn't know. So I think that probably isn't a significant piece of history. That was just something that fifth graders were curious about." Elaine felt that it was a good experience to have someone who is an expert in the field say "I don't know," showing the students that no one has all of the answers.

Because he didn't know all the answers. I think that explained to them that when history is recorded, that's what it is. It's a recording of history, and when people research; they are just researching things that have been recorded. Sometimes in retrospect, what we think is important, or what we want to know wasn't what the people who recorded history at the time thought was important. And so that was a real big thing with those kids. They realized that.

Elaine's Drug Abuse Resistance Education (D.A.R.E.) officer was able to tell the students why Rodney King was stopped initially: a traffic violation. This made Elaine and her students realize that as researchers, we can't "go back there," we have to rely on "documents

that were already written” and that these records may have differing or limited information.

Though there had been times when Josh’s suggestions were too advanced for Elaine’s students, there were other times when his responses to the students’ questions were on a more appropriate grade level and very detailed. In one example, Elaine presented two questions that a student wrote:

This morning the class listened to [2 students’] report on [Brown v. Board of Education]. After much discussion, the class came up with several questions. If you can answer any of our questions, or give us ideas where to look for the answer we would appreciate it.

Question # 1: Was there a pattern to how the states reacted to the new law? Did the large states like the ruling and the small states didn’t?  
Was there a north/south pattern? Was there an east/west pattern?

Was there a pattern at all?

Question # 2: What was the calming [sic] act/bill/law that made people actively stop protesting?

I’m looking forward to hearing from you!!!!

Josh gave a lengthy, detailed reply to this question. Elaine responded:

I am so excited with your answers. I will share them with the students on Monday. I want to thank you once again. You have made an impact on the unit because the students really had to understand in a more in-depth way their topic in order to formulate their questions. I really liked that the students also worked in pairs. It was fun to see one student find out information and share it with his/her partner. It will be good

for them to see that even an “expert” does not have all of the answers. Learning is a lifelong pursuit. I think that is an important lesson to learn. I hope we can do this again next year.

**“Wrapping things up.”** Elaine was hoping to have the students put salient points and facts from their research essays into PowerPoint presentations to share with the rest of the school in February. When she told her principal about this, he asked her to limit the slideshows so that they wouldn’t be too lengthy. Unfortunately, due to the length of time it took—getting the project started, getting the SME to understand her students’ abilities levels, getting the research done and completing the PowerPoint slideshows—time slipped away from them. They were unable to finish by the February deadline.

The students eventually turned in completed written reports and “drew a picture of either their person or event.” Elaine then displayed the reports and the accompanying pictures in the hallway, titling the display “The Civil Rights Movement.” When the PowerPoint presentations created by each pair were completed, they were shown to the parents “during Public School Week in March” of 2002.

**Elaine's reflections.** Elaine described the process of participating in an online project as one that could vary given the situation:

It's not like we had a worksheet and expected the SME to fill it out for us. I think the students were comfortable with not knowing exactly what he was going to answer, and realizing there was more than one answer. I just think it fit into that philosophy.

In my evaluation that I had to fill out, I said, "If I had gone in with the mindset of a positivist that everything had to be set exactly, I would have said that it was a failure, because things didn't work out the way that I initially perceived them."

Elaine considered a constructivist approach to projects the best way to tackle an online project, because a constructivist teacher is willing to let things emerge and takes advantage of those serendipitous moments.

Elaine felt that a variety of factors could have changed the process in many ways. For example, if the SME had had more experience working with younger students, the initial back-and-forth juggling, trying figure out ways to dialogue online may not have occurred. "I should have sent work initially, [saying,], 'This is what they can do. This is what we are looking at.'" She also felt that the way she "tackled questions" might be different than someone else trying a project like this or might be different with a SME familiar with fifth grade students. From Elaine's perspective, Josh didn't seem to want to lead the students in any particular direction.

In one instance, Elaine asked for specific assistance, and Josh merely agreed with her suggestions without offering any of his own.

In retrospect, I was sorry he didn't because as I, along with the students, learned more about the events and people, I would have definitely chosen different people and different events for them to have researched.

Overall, however, Elaine felt that participating in this online project helped to add another dimension to her unit. She felt that the chance to have another perspective, especially one by someone deemed to be an "expert in the field," was worth the effort.

The experience brings the world into the classroom....The learning experience for the students was well worth the time that we invested in the project.

The following case study describes a Canadian teacher's story of the telecooperative project in which her students took part. Like Elaine, Kate teaches multiple subjects to her sixth grade students. However, instead of integrating the *Active Living* project into just one subject—as Elaine did with the *Electronic Emissary*—Kate chose to integrate her 2Learn.ca project into several of the subjects that she teaches.

**Kate**

Without the support of the staff working together on the online project, I feel I would not have learned as much about the programs available and the things that could be done with the programs. It was an incentive for me to learn more and to encourage my students to learn more.

**The teacher and her students.** Kate is a Canadian elementary teacher in the province of Alberta with fifteen years experience in teaching as the 2001-2002 school year began. Her initial training was in special education. For twelve years, Kate taught special education classes at a nearby school. She switched to teaching “regular education” during her thirteenth year of education, and was a fifth grade teacher during her last year at that school. Kate described it as a small school—200 students—and said that the use of technology “wasn’t really a big thing” there.

At that time, I was simply learning how to use programs like Word and how to do individual program plans for high-needs students. I had been introduced to GroupWise [an integrated collaboration software application providing e-mail and real-time communication services], but I hadn’t learned to use it. There wasn’t as much emphasis on it there. It was a small school. We were in the same division and we had the same outcomes, but there just wasn’t the personnel there, and there wasn’t the time to get much involved in it.

Kate came to Cinnabar Elementary two years prior to the study. Her interest in technology grew due to the change of school assignments. There was more of an “opportunity here to learn how to use some of the different [computer] programs” at her new school.

The assignment that Kate has at Cinnabar is two-fold. Her primary role is as a sixth grade teacher. She also teaches social studies in a first/second grade combination class three times a week. Her combination class is made up of 6-, 7-, and 8-year-olds, while her sixth grade class is made up of 12-year-olds.

They are definitely pre-adolescent students. They are keen to learn. They definitely like to talk and be active. They are a good bunch, for the most part. You have one or two that are a little off, but the majority of them are good kids. They have a lot of enthusiasm for things they are interested in. They really go for it and get excited about it, so you still like to see that thirst for learning. They are a handful some days. It's the sheer dynamics of having 30 kids, and if someone is having an off day, it affects ten other people. You'll get somebody going the right way one day, and then someone else is off.

In her primary role teaching sixth grade, and unlike Anise, who is also a sixth grade teacher, Kate is responsible for teaching "language arts, math, social studies, science, health, art, computers, library." The students have another teacher who teaches them French and music, and a third teacher responsible for teaching physical education. When her students are in physical education class, Kate teaches her 1<sup>st</sup>/2<sup>nd</sup> combination class. Her preparation time occurs when students go to music. The students also have another class called "outdoor education."

Outdoor education, it's an optional class that looks at living outdoors, being safe outdoors, being able to identify some of the plant and animal life you may find. Living actively outdoors, what are different things that you can do when you are out. I know they did some animal tracks, looking at

different ones, and whether they are running or walking, how they are moving, that kind of thing. Basically teaching a respect for the environment and for nature around you and learning games like Flying Dutchman, Swedish Dodgeball, Capture the Flag, Shadow Tag, etc.

**The school.** Cinnabar is a K-6 school with an enrollment ranging between 375 to 390 students. Each of the primary classes has approximately twenty students, while upper elementary classes—grades four, five, and six—”tend to have twenty-eight to thirty students in them.”

We have 61 students now, and there are two of us that teach grade six. There are two grade five classes, two grade four classes, one grade three/four combined, and two grade three, a grade one/two combined, two grade two classes, and two grade one classes.

Included among the staff at Cinnabar are French and music teachers for grades four to six and physical education teachers for grades three to six. Grades one and two have a part-time early literacy teacher.

Then we have various teacher assistants...They are assigned to some students [such as] a student who is identified as high-needs. Even though they are assigned to that student, they will help with the whole class where possible. If it's not, then they work directly with a particular student.

In 1997, Cinnabar was wired to provide a computer network in the school. In 2000, one to two networked computers with access to the Internet were installed in each classroom. The school also has a networked computer lab with thirty-five computers. The



teacher's computer is hooked to a projection device so that "whatever I do on the computer, the students can follow because it's projected up onto the wall on a screen. So I can go through something with them step-by-step to show them what to do." Students can use classroom computers—with permission—to complete any projects begun in the lab.

***Professional development—working with Super-Users.***

In Kate's first school, GroupWise was available for teachers and students to use, "but there just wasn't the personnel there, and there wasn't the time to get much involved in it," so Kate had not learned to use it. Then, when Kate came to Cinnabar, she found they also used GroupWise—but there was a difference. Kate explained,

When I came here, it was actually quite a treat to have people who knew how to use the program, and who could take some time, and walk you through the program if you needed it. I'm not one of those people who can just do a program. I have to go through it a few times before I can actually know enough to teach it to the kids themselves. So it was nice to come here and have the people who were available who could say, 'This is what you did.'

These classroom teacher leaders are known on Kate's campus as Super-Users.

The Telus Learning Connection, an alliance of educational entities in the province of Alberta, was designed to promote technology integration in provincial schools. With this purpose in

mind, 2Learn.ca was developed as part of the Telus Learning Connection to provide professional development in the area of technology use in the classroom. Super-Users chosen from designated campuses are provided with training at

higher level[s] than what your average teacher is. They are the ones who know the programs inside out, and if you are having problems with it you can ask those people. They have been given time to coordinate some of these projects, and to bring them out and talk to people about them.

Two Super-Users are part of the staff at Cinnabar—one a third grade teacher, the other a fourth grade teacher. The Super-Users attend workshops and seminars and return to the school to disseminate “great ideas” about how computers can be used in the classroom and about online projects that are available through 2Learn.ca.

Super-Users work with teachers during traditional professional development blocks of time, as-needed inservice sessions, and informal, impromptu individual sessions. Kate has attended several sessions to learn the technical aspects of such programs as Inspiration, PowerPoint, and Netscape Composer. Inspiration was presented to teachers two days before the 2001-2002 school year began.

They had some gentleman from somewhere in the States who came down and did the inservice for two days...We came back for two days at the beginning of August to be inserviced on

how to use the Inspiration program. We made our own webs and that kind of thing, and we learned the ins and outs of the program. That was really good because in September, you could see all the places you could use it. So that was very useful.

Kate went to training sessions after school to learn how to use PowerPoint. She had tried to learn how to use Netscape Composer the previous year, “but because I didn’t use it, I didn’t know how to do it.” During the time of the study, Kate’s students were learning how to design Web pages in the lab, so Kate was “learning it at the same time,” and it was making more sense to her.

The Super-User shows the class show to do it, and I help the students do the activities that she talks about, and then I get one period a week, as part of my preparation time, to use the computers to sort of solidify the knowledge she’s showing me. That is working quite well. I’ve learned how to make the links on the Web pages, and how to get all of the students’ names into the Web page itself, and I didn’t know how to do that before. It’s a good learning tool. Hopefully next year, with just a little reminder, I’ll be able to do it.

Kate can then use the computer on her desk to refine and apply her skills. She felt that she needed the time to work on skills she had learned “before I tried to show the students those.” Kate described times she worked with Super-Users as “incidental,” with the Super-User available to give just-in-time support.

If I get stuck somewhere, I go to my Super-User and get help. If they are in class, then I will go at recess or after school, whatever times work. And we try and figure out what it is I messed up on.

**The project-Active Living.** The *Active Living* project was designed by one of the Super-Users at Cinnabar as a 2Learn Collaborative Learning Project (see Figure 4.3).

The screenshot shows the project preview page for 'Active Living' on the 2Learn.ca platform. At the top, there is a logo for 'Search for and/or Join Projects @2Learn.ca' and a header for 'Active Living'. Below this, there are several sections: 'Language of Instruction' with 'English' selected (checked) and 'French' unselected; 'Date Entered' (10/25/2001 4:53:04 PM) and 'Last Updated' (8/28/2002 11:28:09 AM); 'Scope' with 'Alberta', 'Canada', and 'Global' options, where 'Global' is selected; and an 'Archived' checkbox which is checked. A URL link to the project is provided: <http://www.cinnabar.edu/~ActiveLiving>. The 'Time Frame' section shows 'Start Date: October 25, 2001' and 'Completion Date: June 25, 2002'. The 'Participants' section shows '# of Classes: 6 - 100' and '# of Participants: 180 - 1000'. The 'Grade Level' section has checkboxes for 'K-3', '4-6', '7-9', '10-12', 'Post Secondary', and 'Professional', with '4-6' selected. The 'Subject Areas' section lists three options: '1. Health and Physical Education', '2. Computer and Information Technology', and '3. English Language Arts'.

Figure 4.3 The 2Learn Collaboratory Project preview page for the Active Living project.

Using 2Learn.ca's project development guide, the Super-Users outlined different aspects of the project to be posted on the Web and in the Collaborative Learning Projects database archive made available for viewing.

Students participating in the *Active Living* project were to explore ways that physical activity can be valuable to people of all

ages and how it is essential for a healthy lifestyle. They also were to examine different physical activities and the forms they took during various seasons. Specific project activities were to be designed by teachers participating in the project so that they could be integrated into several subject areas, including language arts, social studies, art, math, and physical education.

**Getting started.** For Kate, “getting started” entailed collaborative design of the proposed project on active living. At the beginning of the school year, the Super-Users on Kate’s campus approached the staff with an offer to participate in this telecollaborative project. “A group of teachers that were interested got together and worked on it to come up with what each grade level would do around the active living theme.” Six teachers in grades four, five and six came together to brainstorm possible activities centering around the theme of active living, including the integration of software for the students to use, such as the programs to which teachers were introduced in August.

Basically, the project was, “Let’s do active living as a theme, and these are some of the programs we want to use. Try and incorporate it into your program.” When we met at the beginning of the year, we tried to brainstorm some things that we could do, like to do an essay in Word. That was one of the things we thought would fit in with what were already doing in the classroom. We knew Excel would fit well into the graphing assignment that is part of math.

They decided that each grade level would look at a different facet of active living. Then it was up to each classroom teacher to determine how she would manage the project with her students. The teachers also called upon the fifth grade teacher in charge of physical education to help them get a better understanding of what was involved in the notion of *active living*. “His perception of what was needed was reported to us at staff meeting and we agreed.” The physical education teacher decided that he “could incorporate...the physical education part of it. That’s how he became involved in this one.”

Once decisions had been made at the initial collaboration meeting, the 2Learn Super-Users drafted the project proposal to turn in to the 2Learn Collaboratory Project site. Kate explained the reason for the approval process by saying,

2Learn approved our project and granted us the money we applied for. The money was then spent to buy physical education equipment and equipment for students to use at recesses.

***Exploring Active Living.*** Unlike Anise and Elaine who were the only teachers in their schools who integrated online projects, Kate was able to work collaboratively with members of her staff in the design and implementation of her project. Once the overall project had been designed collaboratively among a large group of teachers, Kate and her teammate who teaches sixth grade decided

to incorporate use of several software programs into the various subjects they would explore during the activity with their sixth grade students. They planned to explore the Olympics—both present-day Olympics and the Olympics during the time of the ancient Greeks—by integrating the topic of active living with both current events and their study of history. Their students used their social studies textbooks as one source of information for the assorted projects they would be doing and Encarta (an encyclopedic software program) as another source. They also went online to gather information from Internet sources. To help students learn how to evaluate the quality of information on the Web, Kate had them consider two questions: “Is this a good source of information? Is it a reliable source?” Unlike Anise and Elaine who had to find alternative methods of sending e-mail due to district policies, Kate had access to an e-mail software program, GroupWise, that her district provides. Using GroupWise, Kate e-mailed students their assignments with specific directions, a practice she found to be “very efficient.” She also used e-mail to maintain contact with students throughout all of their project work, helping them with questions “that didn’t need an immediate answer.”

Students worked together as a class, with partners, and individually to complete the various activities that comprised the

*Active Living* project. Kate “was able to give some one-to-one assistance at times and partnered these students with students who finished early when it was feasible.” Kate’s students who were on individual program plans for learning were not given grades for their work. Instead, “they were evaluated on the work they completed and the effort they put into it...using anecdotal notes and observation.”

***Creating category webs.*** The first project that Kate and her students tackled was brainstorming ideas around the theme of activity living:

“What are some of the components of active living?” They come up with things like fitness. Then another part of that might be eating healthy, leisure activities. Then off of those, they would brainstorm some things that would be healthy with regard to nutrition, for example. They could generate it into a living healthy report from the information that they had.

In the directions for this project, Kate explained that students would take the lists they brainstormed and organize the information by category, using the software program Inspiration. This provided the students with category webs as a final product. “Also, with the Inspiration, once they have categorized, they can take that, and there’s a writing component to it. We didn’t get to the writing component, but that would have been a natural next step to do with that program.” Kate explained that the students could have taken



their webs and transformed them into outlines to help students “write good paragraphs.” Unfortunately, Kate felt she didn’t understand Inspiration’s full potential because she was new to it. She spent a lot of the initial time with this project training the students to use the program.

It took us quite a while to use. It has a lot of links and different things you can use in it. So it took quite some time for them to figure out how to get the brainstorm into the program, like to get their ideas in the proper places where they wanted them. So we didn’t want to spend any more time on that particular part of it because we had all these other things we wanted to be doing as well.

The basic goal that Kate felt that her students achieved though development of category webs was to show them that they can “pick a topic and then expand on it with points from ideas,” setting the stage for the other projects they would be exploring under the umbrella topic of “active living.”

***Writing reports and journaling.*** Kate and her teammate chose social studies as the class into which to integrate the use of Word, helping students to learn the features of the program and ways to apply its use in class projects and activities. She explained, “We wanted to use Word to do some sort of project for this, and I knew that would fit into the other parts of the curriculum.” The research reports helped to enhance her class’ study of ancient Greece—as Kate said, “[It] worked in the component of the Olympics

as well.” The technology components of the project involved use of the Internet for resource information and using Word to develop an end product.

For the Word part of it, we were working on active living and we incorporated it into our social studies in that they were studying the Ancient Greeks, and how did the Ancient Greeks remain active. And they did a research project on the Ancient Greeks and the activities that they did. A lot of it focused around the Olympics because of course the Olympics was big this year.

Students used the Internet to explore sports in both current-day Olympics and ways that different Olympic events originated. They went to different Olympic Web sites such as those developed by NBC and Canada’s CBC. “They did some research into them, as well as using programs like Encarta to look up things for their report.”

As they worked to develop their reports using Word, students applied aspects of the software program that they were learning about. “They learned how to cut, copy, and paste, and how to save and use the spellchecker.”

In physical education classes, the sixth grade students incorporated what they had learned using Word in order to keep activity logs for the Active Living project. Students kept a daily journal of physical activities in which they participated “just to monitor how active they were in their living.” Students then

organized the data in their journals into tabular form for presentation to “show how active they were.”

**Multimedia reporting.** “With...PowerPoint, that was left to the discretion of the teacher.” She had the students use their social studies textbooks as sources of material to use in their presentations. She didn’t have time to for students to do another research project, so she had them adapt one of their previous projects for presentation. Just as Elaine had students develop multimedia presentations from topics they had researched, Kate had her student use the information they had gathered in their research reports to develop PowerPoint slideshows. They transferred the main headings from their reports and summarized the data for the presentation.

The students had done research, and were to use the information to make a PowerPoint. Students could go to the Internet and get clipart to use. They learned how to use the different sounds, colouring and animations...and how to import pictures from other areas such as Internet sites or from our network site, and they learned to import those into their PowerPoint. They learned how to work with the sounds and the colors, adjusting all of those.

Kate added another dimension to the project by having students submit their completed projects to her by e-mail. “So then they learned how to do an attachment to an e-mail message, and also how to use e-mail to send information.”

**Surveying and graphing.** In math, Kate's class explored active living by interviewing other students in fifth and sixth grade about their favorite sports and/or favorite extreme sports. This dovetailed into Alberta's curricular requirement for math that students learn to develop a plan to collect, display, and interpret data that can be used to answer a question. Another curricular objective this activity met was for students to display data in several forms—by hand or computer. Kate's students

chose five sports, and wrote up survey slips which were then copied and distributed to the other grade five and six students, so they would have enough students, just to get a larger sample, I think. Once the surveys were completed, students tallied the results. Then they put them in a tally chart, converted it into a table of information with decimals and percents.

First, Kate had them draw graphs of data by hand. Then, they could use Excel to graph their data. “[T]hey learned very quickly that the computer will convert all of that information for you.”

**Art and Active Living.** Kate also used the active living theme for several projects in her art classes. The first project centered on the new playground that the school was getting. “The students made a model playground. The kids worked collaboratively on that.” They discussed how the work could be done collaboratively with

thirty students and decided to assign different parts to each student.

They did this from the pictures of the playground because the playground hadn't been built yet. From those pictures, they got materials, and they chose what materials they thought would work. Basically, it was mostly recycled materials. They made a model of the playground.

Another art project the students worked on was the development of a mural around the theme of active living. Using digital cameras, students took pictures of their peers posing in a position that represented some facet of active living. They also drew and painted scenes and some students created collages depicting active living. Kate said, "Then we took all of the artwork they had done in relation to active living, and we made a mural on our bulletin board. The students decided how it would look."

The third art project was the creation of mosaics. First, students found magazine pictures of people living actively. These pictures were traced onto acetate so that they could be projected onto a larger sheet of paper. "Then from there, they would cut little pieces out of coloured magazines to get the right colors that they wanted. Then they took those little pieces and made a mosaic of people living actively."

**Creating Web pages.** Using Netscape Composer, students developed three different Web page projects, incorporating their learning of Web design. The first project was to create an active living poem to be posted on the Web. During this project, students learned “how to set up the Web page, how to change the font, change the color combinations so that it looks good and how to put clip art into their page.”

The second Web page the students designed involved math word problems. Each student was to create five word problems, applying what they had learned in math about “good” word problems. “I’ve asked them to try to somehow get active living involved in there, but that’s a challenge just to get them to write a good math problem.” Students designed each page with a problem, its solution, and how they reached the solution.

The third Web page had students using the “pictures of themselves and a group of friends” they created in their Art class for the mural project mentioned above and incorporated them in pages they designed for the Web. Students also took pictures of each other in the gym demonstrating different activities they could do for active living. “It does keep them motivated, and they do really quite enjoy it. Using the digital camera is quite the thing. It helps too

when you tell them the digital camera is worth \$1200 and they better be careful.”

Students in the sixth grade computer club helped to design the school’s Active Living Web site. Names of students who had completed all the projects for active living were put into a random drawing to choose which projects would go online to demonstrate what the class had been doing. The computer club helped to organize each class’ contributions.

***Developing Cinnabar Olympic events.*** Students completed a second research project with a different type of end product.

“Students were given a research assignment using the Internet and their learning from class to find out more on what was involved in training for a particular Olympic event and becoming an Olympic level athlete, to coincide with the Active Living theme.” Once they had completed their research, students got together in groups to share their findings and then each group designed their own Olympic event.

“Students then nominated their peers to be athletes for each event based on their physical skill,” and the class chose the students who would compete, limiting each event to four to five contestants. On the day of the competition, each group set up their events outside with whatever materials they had gathered and made

at home or in the classroom. “The contestants competed as the class looked on,” and winners received olive wreaths that had been created by other members of the class.

With this project, Kate said that the students learned what athletes must go through to participate in the Olympics.

They became aware of various services offered by sports organizations to help athletes train. For some Olympic events today, students discovered what individual athletes did to train from the time they were young. Students learned that in both ancient Greece and today athletes needed to train to become good. Students learned that in ancient Greece athletes trained in a gymnasium much like they do today. The students learned to use search engines and to be critical of sites with regard to reliable information.

***Kate’s reflections.*** Kate felt that the *Active Living* project was worthwhile for both her and her students.

The growing pains, of learning new software, were worth going through as I now know more programs and feel more confident in presenting them to the students.

Doing an online project ensured “that the Information and Communication Technology Outcomes set out by the province are fulfilled.” The project also integrated the information and communication technology outcomes into other curricular areas like science and social studies, math, health, and language arts.

Kate believes that an online project like this provides incentive for both the teacher and her students. “It increased students’ awareness, interest, and knowledge of different programming....It



was an incentive for me to learn more and to encourage my students to learn more.” Kate found this to be true each time she sat down to work on her computer. She said that, “[w]ithout the support of the staff working together on the online project, I feel I would not have learned as much about the programs available.”

One major drawback for Kate was time—a drawback for both Anise and Elaine, as well—especially the time it took to learn programs and the time it took to complete each product. However,

[t]he tradeoff for that is the student motivation and that they have a polished product for everyone. Everyone gets a product that looks really good at the end of it all. So it was a very worthwhile project to do.

The next case study details the experience of another Canadian teacher. Kelly teaches fifth grade in Ontario. Like Elaine, Kelly chose a telecollaborative project to enhance her social studies curriculum.

## **Kelly**

I guess good news travels fast. My kids are talking about it all the time. They're e-mailing each other at home. They have friends in the other classes and when their friends are over they're wondering what they're doing, or when they walk by the computer lab they can see us being engaged in this.

**The teacher and her students.** Kelly teaches fifth grade in a K-5 school that is in the province of Ontario, Canada. She describes the school's community as being "very homogenous." Her 2001-2002 class was made up of twenty-six full-time students and two students who went to special education classes for part of the day.

They're all white 10- to 11-year-old students, and that's pretty much all they know, so anything that's outside of our community is really unknown to them, especially something in another country in another part of the world.

Kelly described the group as low-average academically and "fairly good" behaviorally.

In 2001-2002, Kelly's school had three teachers working at the fifth grade level. One teacher was in charge of the French immersion class that spent one half of the day being taught in French and the other half being taught in English. The two other teachers taught in English and teamed to teach the various subjects at their grade level, with each subject's curricular goals for students mandated by Ontario's Ministry of Education. Kelly taught science and social studies to the two groups, while her partner taught math to both groups. Each teacher taught language arts to her own

class. “We do a lot of moving around,” because, besides switching between the two fifth grade teachers, the students also rotated going to a French class and a music class. Kelly has a large room that she and her team partner use to “do a lot of large group instruction where we have all 68 kids together.” They work on language literacy in mixed ability groups, but also group students by ability as needed to give them support.

We’ve tried to integrate all three of the grade five classes, so there’s 78 that are together. We meet once a week as mandated by our principal to do what we call class council.

During the class council sessions, students discuss issues facing them. Topics have ranged from getting to know one another to handling bullying.

Kelly felt that it was important for students at her grade level to rotate from class to class in order to prepare them for a similar experience in middle school. While Kate’s students remain at the elementary school for sixth grade, Kelly’s students go on to middle school when they complete fifth grade. She explained, “[It’s] unusual for fifth grade [to rotate classes], but the kids really like it. When they move to middle school next year that’s all they do is go to rotary. So, it helps to prep them.”

When Kelly worked with her students on computer technology, she had the school lab with twenty-four computers available for use.

There are only 24 computers in a central computer lab in the school and 40 periods per week in which to use it. The Junior students (grades 4-6) get priority over the primary students (K-3) and therefore, not many younger kids get access to those computers, or not as much as the older kids.

Kelly felt that computer use among teachers at her school varies. Certain teachers were not as comfortable using the technology available to them, others might have been too busy to “try new things,” and some may have had problems accessing the lab due to the restrictions mentioned above. Kelly tried to expose teachers to different ways to use technology through district workshops that she has given. In 2001-2002, Kelly ran a workshop for eighty teachers in the district.

I created a workshop for teachers [about] integrating technology. At the end of my discussion or workshop, I give 50 really easy ways for teachers to integrate technology—and this is one of them—to create the global classroom is what we call it, and this is one way through ePALS to communicate to students.

**The project-ePALS.** ePALS is a classroom exchange program that began in 1996. It provides a venue for teachers interested in having their students participate in class-to-class partnerships or open discussion forums (See Figure 4.4).



Figure 4.4 ePALS' initial page provides a portal to various areas within its site, with version of the portal page being available in multiple languages.

Teachers and their students can also join one of many collaborative projects designed by others, or they can start one of

their own. Teachers who would like to make contact with others can fill out a class profile that is entered into the ePALS database, making it easy to find partners to work with. Each profile follows the same format: name of school; teacher; language(s); grade level; age level; type of class; city; state/province; country/territory; and a basic description of the type of exchange in which the teacher is interested. Other options allow participants to elaborate on their profiles, adding the school's name, the age of students they want to work with, and the technology options available (e.g. chat/IRC software, audio/voice software, video software). The profile also lets the reader see when the submission was first made, and when it was last updated. Each time a new profile is added, an announcement is posted on the ePALS initial page.

Teachers interested in finding matches can look through new profiles for recent submissions or search the database for specific types of matches. There is also an option of locating partners with a map if partners from specific geographic areas are desired. When a partner is found, ePALS provides options for contacting the partner by e-mail or e-card. ePALS offers Web-based mail for its participants to use. Participants can also choose to e-mail each other directly once contact has been made.

**Getting Started.** In technology workshops that she presented, Kelly frequently brought up ePALS as a possible program for teachers to take part in with their students, but she didn't try it herself until early 2002. Just as Anise was able to post class information to secure a partner class in the *Travel Buddies* project, Kelly entered her ePALS profile in March of 2002 in order to find a partner class for her students. In her profile, she said,

Our class is located just north of our country's largest city, Toronto. We are going to be studying about ancient civilizations and would like to have ePALS from either Egypt or Greece! We have access to our school's computer lab at least 3 times a week so we would like students who can respond to us often – until June if possible!

Like Elaine, Kelly opted to design her own project. She was hoping to communicate with participants in Egypt or Greece “to link it to our curriculum was what my idea was,” but unfortunately, there were no classes available for exchanges from those countries. She tried contacting a class in Australia when her first option fell through, but they weren't available to work with her. Then a teacher in Spain ran his own search for a partner and found Kelly's profile. “He approached me via e-mail and asked if we'd be interested in being matched up with them. We said sure.”

Even though Spain was not a country she was looking to connect with in order to make a social studies curricular link, she found that she would still be able to work with them. She realized

that communicating with students from Spain would help her students see what a rich history Spain had and that their history went far back in time.

We were studying ancient civilizations at that time, and although Spain was not one of the topics, I was still able to make some connections with the Greeks and the fact that they inhabited the land that is now Spain.

One of the first steps that the two teachers in the project took was to determine how they would communicate with each other. Rather than using the ePALS Web-based mail system, Kelly decided to use the e-mail system that was being piloted by her school division. It was Web-based and therefore could be accessed from both school and home. Kelly had administrative rights as the class teacher to monitor her students' e-mail. In the case studies above, only the other Canadian teacher—Kate—had access to a district approved e-mail system (ie. GroupWise).

Once Kelly got the list of students in Spain who would be participating, she took it and matched those students with students in her classroom, giving her students the contact information to start communicating. Initially, Kelly's students were worried about communicating with students whose first language was not English. "[T]hey were happy to learn that the Spanish students could speak English as well as or even almost better than some of my students."



Kelly's students had access to the computer lab three times per week for a half hour at a time to work on whatever assignments they had that included using computers. "Usually there is an assignment that they're working on, and when that's complete they have the opportunity to go to their e-mail." The students who had online access at home could also post messages to their Spanish ePALS from there.

The Web mail that Kelly used allowed her to post bulletins, so she made a bulletin called "E-Pals." Like Kate, who posted assignment directions and expectations in GroupWise for students to refer to, Kelly said, "I have all of the expectations in that bulletin, so they can always go back and check what my expectation of them is and what they should be writing." She also provided students with examples of questions they could ask and a suggested way to introduce themselves. She suggested that they not just talk about themselves in their messages, but that they use questions to help prompt return messages from their ePALS. She came up with this idea because many of her students "need some visual reminders; it's not enough for me to tell them orally what to do." She thought the bulletin would come in handy for students to review when accessing their e-mail from home. She felt that the bulletin would also help parents "have a better understanding" of what she expected in the

project. In addition to the bulletin, Kelly sent a letter home to the parents telling them about the ePAL project the students would be working on until June.

As Kelly got her students ready to send out their first messages, she announced that she would be monitoring what they sent prior to the e-mail going out.

I did tell them that the very first message that they sent to their pal I wanted to read it and check it and made sure that all the spelling is correct. That's one thing that we're focusing on was because English wasn't necessarily their first language that we weren't using slang and we weren't using colloquialisms—that we were fairly straight forward with the English language, and even as far as contractions, I wanted them to spell the words out and stuff.

However, monitoring the class' first set of messages, proofreading content and grammar for all twenty-six of her students, was a challenge for Kelly. It took her a lot of time to read through each message prior to sending it out.

When the first few messages came back from Spanish ePALS, Kelly said the “kids [got] really excited.” She was pleased that the time required for monitoring of student messages eased up as the time between posting and responding varied among the ePAL partners.

***Taking on the project.*** Once the students made initial contact with their ePALS, project work began to commence. As Kelly looked over the messages that her students were sending out at the beginning, she felt that what they were asking their ePALS was rather naïve. Kelly said that they were asking “whether or not they have TV, whether they listen to music, whether they have hamburgers, which are really innocent childlike questions.” Even though they seemed naïve and childlike, Kelly enjoyed reading them and was pleased to see the students enjoying comparing lifestyles, “which I think is great for this age group, because the Internet does allow them to communicate with different kids from around the world.”

As communication continued, Kelly noticed several changes taking place in the writing the students were doing and the types of questions they were asking. This was especially true of students who received replies from their ePALS. The level of questions her students asked moved from naïve to more “thought provoking.”

They asked questions like “What are your favourite subjects in school?” “How many brothers and sisters do you have?” “Do you have any pets?” “What do you do in your spare time?”

While Anise discovered that her students who were sharing cultural information with their partners in Australia were more interested in comparing schools, Kelly found that her girls were especially

interested in information about their ePALS' families, customs, and hobbies. As the questions became more thought-provoking, her students began to learn more about their ePALS. Kelly said that they asked questions "like, 'What do you want to be when you grow up?' or 'What jobs do your parents do?'"

The replies the students received from their partners in Spain helped them to elaborate upon their comparisons of Spain and Canada. For example, whereas more Canadian students like to play baseball and hockey in their free time, the majority of Spanish students preferred to play soccer. "Also, the students noticed that their families were bigger in Spain." The students were surprised to find out how different the Spanish students were from them, especially in social and cultural differences such as "music and clothes."

Another change that Kelly saw among her students was that as they became more accustomed to using e-mail in day-to-day messages to friends and ePAL messages, "they became more apt to use slang terms [such as] *cya* [i.e. *see you later*] as well as cute e-mail terms [such as] *l8r* [i.e. *later*, or *see you later*], and *brb* [i.e. *be right back*] which I told them they couldn't use in their ePAL letters." Kelly had asked students to avoid this type of language, because she didn't feel that the Spanish students had as much exposure to the

Internet and Internet slang. She also was using the exchanges as part of her language lesson, and she wanted her students “to write to their ePALS as if they were writing to me (proper spelling and punctuation too).”

Trouble arose in the project when Kelly had to discipline students for inappropriate use of e-mail. She explained that she first became aware of the problem when “I overheard some talk in the classroom and figured that there may be something said in their e-mail (teachers’ intuition) :o) ” Kelly had to step up her monitoring activities to be sure that she could trust her students to use appropriate language in their e-mail messages. Using her administrative rights to access student e-mail accounts, Kelly discovered the problem.

I had two students that were “involved” and were using their e-mail to talk to each other at home...The other student was only the recipient of the e-mail - she never actually wrote any herself....Eventually they began writing about sexual topics and some derogatory terms came out about another student in the class. I wanted to make an example out of them for the other students to learn from and to understand that I was in fact reading their e-mails! [I] informed the principal and [the student’s] parents that he was removed from our student e-mail program. He was very upset.

In further monitoring after the incident, Kelly found that none of the other students were writing inappropriate messages. “[T]hey were pretty scared after that.”

**Word spreads about Kelly's project.** News about Kelly's ePAL project and the communication with students in Spain began to spread around the school. Students in her class talked about it with students in other classes and they saw Kelly's students engaged in composing and sending e-mail in the computer lab. The students in other classes began to wonder why their teachers weren't doing something similar. Kelly decided to share news about her project in a staff meeting. She was hoping to get other teachers "on board," because she thought it was something that they could do themselves.

Kelly told the staff how she had learned about ePALS and how easy it was to get started. She told them about the learning experience her students were having and the ways she was tying this learning into her social studies curriculum. She explained that she was piloting the program and encouraged them to join ePALS. Although Kelly's peers were "amazed that we were able to communicate with students from another part of the world...[t]hat we could talk to and learn about kids in another part of the world," no one chose to participate. Kelly felt that the lack of interest in trying ePALS might stem from her peers' discomfort with technology, problems with accessing the lab, or current work demands.

They know I'm doing it, and they just sort of hushed the kids down and told them to wait. So that's fine. My kids, I call them guinea pigs. They do a lot of stuff like that. They're enjoying it. And this ePALS is also kind of a guinea pig thing too, to see if it's working.

***The project comes to an end.*** Kelly's class continued corresponding with students in Spain until the end of the school year in June. Her students posted messages and eagerly waited for replies. Unfortunately, some students had to wait longer than others, and some students never received any e-mail from their Spanish ePALS. This was very disheartening for them. Kelly tried to explain what she thought might be the problem.

I tried to explain to them that the education system was different in Spain and that they may not have daily access to computers like we do in Canada.

She said that her students understood, but they continued to "wait anxiously" for e-mail to arrive.

Approximately half of Kelly's students were able to maintain an e-mail relationship with their ePALS though the "last few months of school." Once school ended, all contact with their Spanish ePALS ceased, and Kelly said, "As far as I know, none of them are still corresponding with their ePALS."

***Kelly's reflections.*** Kelly's initial reactions to the project were all very positive, stressing the learning that was occurring and awareness about others that arose during the project. Management

issues and communication issues influenced her overall reaction to the project. Her Spanish ePALS had not been able to communicate as regularly as Kelly had hoped, and she also felt that "...it would work better in a smaller group so I could better monitor them and ensure that the students were in fact responding to their ePALS." She felt that working with a class of twenty-eight students made it difficult to be as "diligent with their e-mails as I would have liked." She also thought that working with a smaller group of students, she could have them search for an ePAL of their own choosing, "from an area of the world that interests them."

Kelly also thought that timing was a factor. She would prefer to have started earlier, "September or February," so that students would have a longer period than two to three months to communicate. She felt that she started this project too late.

In expressing her final thoughts about participating in an exchange like ePALS, Kelly said, "I still think it is a great program, however, and would be very excited to try another online project."

The following case study chronicles a K-5, New Jersey computer lab teacher's view of incorporating telecollaborative projects into the classroom. Unlike the previous stories of regular education teachers working with one grade level of students on one



online project, Rachel chose two online projects—one for her second grade students and one for her third grade students.

## **Rachel**

Well, it started out with one little idea, and what I had envisioned was maybe one little topic that the kids would like it, and then we would move on. But one idea lead to another, and the idea grew bigger and bigger and bigger, just as you roll a snowball in the snow when you are making a snowman. You start off with a small one, and you roll it along and it gets bigger, and then you have the snowman head, and so on. So, yes...one idea has lead to another has lead to another, and the project has taken on a life of itself.

**The teacher and her students.** While other teachers in this study are classroom teachers, Rachel is the “computer teacher” at Benson Elementary, a K-5 school in suburban New Jersey, “celebrat[ing] its 40<sup>th</sup> birthday” in 2003. Rachel describes Benson’s community as being “extremely supportive.” She stated that though the township is large, “spanning nearly 30 miles and a population approaching 40,000, the community surrounding the school has a very ‘small town’ feel...[where] everyone knows everyone else.” This “close-knit community” supports each other, as Rachel explained, “If one neighbor is ill the rest of the block sends casseroles to the house, or takes the kids in, or runs errands, or something neighborly.” This supportive atmosphere can be seen in the way the PTA plays a role in her school. Rachel observed, “They help in the classroom and often provide assistance in helping teachers with after school clubs. They help with the running of many special events too.”

Rachel works with students in “first grade through fifth, 540 students altogether, [and] I see them each for 40 minutes per week.” She described the students as being middle class, “generally well-behaved, and eager to learn.”

Rachel also said that Benson is her district’s designated school for students who are learning disabled (LD) and require self-contained, special education settings (i.e. attending special education classes for all subjects). Approximately “thirty-two percent [of the student population] are classified ‘LD’.”

In her role as a teacher in the computer lab, she believes that what she does with students in her classes should dovetail with what students are doing in their other classes, helping to enhance those curricular areas. Rachel tries to work with the other teachers when planning her lessons, sharing what she would like to try to accomplish and trying to get an idea how she could incorporate what is going on in the other classes.

As a district, we are trying to improve the writing of the students, and that comes out with faculty meetings and things. These are our distinct goals for the year. We would like to improve our students’ writing, and there are going to be district writing samples, and we want to do such and such. But I also talked to the classroom teachers, and asked them if there was any particular subject they would like the children to focus on.

For example, during the 2001-2002 school year, fourth graders at her school were studying units on volcanoes and the solar system.

Rachel developed projects to help augment those subjects integrating use of technology. Using the Internet to do research on their particular classroom focus, students met Rachel's goal of learning to use multimedia programs by developing a presentation around the topic they had researched for class, just as Elaine's and Kate's students did as mentioned early. Rachel's fifth graders were expected to learn to write persuasively as a goal in language arts. Rachel took this goal and goals in their math classes and combined them with her technology curricular goal of learning to use spreadsheets and developed a project in which students would research, plan and price a vacation, writing up the final product using descriptive and persuasive writing techniques, and when the project was completed, giving a presentation to their parents.

When students came into her lab as a class, they work on the project they have been assigned, and Rachel helps them as needed. Typically, classes don't use all thirty computers available during their time in the lab; for example, second and third grade classes are fairly small in number. Rachel explained, "The only class where I'm always using every computer all of the time is the fourth grade. Fourth grades are huge, and I'm using all of the computers all the time." At the beginning of class, Rachel goes through the directions for the day and then she circulates through the lab, working with

her own students and any students who have come in from other classes to use the computers that are available.

[W]hat happens a lot of times is a teacher will say, "My child is finishing up this writing project. Can they go sit in the back and use one of the extra computers? Can they get on the Internet to look this up, or get on the Internet to look that up." So there's always a few extra from somebody else that are there as well. Although they are not really part of the class, inevitably some of them will need help with something...If I'm not busy with the other children, I will help them. Otherwise, I'll say, "I'm sorry. You'll have to come back when it's your class time. I can't answer your question right now." The children are really pretty good for the most part.

Rachel sometimes feels very rushed getting around to everyone, but this system of working with students functions "pretty well" as long as students use their "whisper voices" when getting help from peers.

Rachel described technology access in other parts of the school, saying that "most classes have at least two" computers, with one computer connected to the Internet and hooked into the school's network server. The number of computers in classrooms varies, however. Some classes have just two computers, and others have up to four available for use. Rachel said that though these computers are available for students to use to complete unfinished lab projects, that rarely happens. "Usually, the classrooms themselves are so very busy that anything they start in the lab, they just never have time to go back to in the classroom."

***The projects-Grandmother and Me and Monster Exchange.*** When considering projects that incorporated writing skills and technology skills for her second and third grade students, Rachel decided to look for online projects that she could use. She found two projects that she wanted to run concurrently. Rachel chose KIDLINK's *Grandmother and Me* project, offered by KIDPROJ, for her second graders and *Monster Exchange* for her third grade students.

KIDPROJ is KIDLINK's forum for global K-12 classroom projects online. *Grandmother and Me* began as a KIDPROJ project in May of 2000 (see Figure 4.5).



Figure 4.5 The opening page of KIDLINK's Grandmother and Me project explains how the project will be carried out and provides links to the other pages within the project.

The project is described as an opportunity for students to use writing and art to explore and share information about past generations of their families. Participation in the project begins when students join KIDLINK, answering the four KIDLINK Response questions: 1.) Who am I?; 2.) What do I want to be when I grow up; 3.) How do I want the world to be when I grow up; and 4.) What can I do about this now? Project activities include taking part in online

discussions via the KIDPROJ e-mail list and developing artwork to go on KIDSPACE, the KIDLINK Web site that KIDPROJ participants use to publish their project information. Project managers also provide numerous optional activities from which classes can choose in order to individually tailor their experiences in the project.

The *Monster Exchange* project first came online in 1995. It provides an opportunity for K-8 students to develop their descriptive writing skills and critical reading skills through a collaborative project.



Figure 4.6 The Monster Exchange opening page is a portal into the site's various pages of information and project activity.



Teachers interested in participating in the project select the criteria to describe their preferred partner class. These criteria structure a search through the *Monster Exchange* database of registered classes. Teachers can then review the results of the search, choose a class with which to partner, and e-mail their partner to set up the exchange. Then, the project activities can begin. Each class works to design their own original monsters—either drawn by individual students or groups of students within the class. Next, students create descriptions of their monsters, written so that their partner can re-draw the monster only reading the description. The final products appear in the *Monster Exchange* Gallery online, including the original drawing of the monster, the written description, and the re-drawn monster.

**Getting started.** In one of her interview, Rachel postulated, “If you name the topic, there’s a collaborative project that will deal with it.” She said this as she described her search for a project to do with her second and third grade students. In her hunt for projects, Rachel found projects dealing with several subjects that could be incorporated to match curricular studies that her students were studying in their homeroom classes. However, since this would be her first time to try working an online project into her computer lab classes, she decided to “start small [and] just focus on one topic

area,” writing. Looking through what the two projects had to offer, Rachel found that “[b]oth the *Monster Exchange* and *Grandmother and Me* seemed ideal for what we wanted to do.”

One of the major considerations that Rachel had to weigh was how she would handle her district’s policies about Internet in their schools.

[T]hey have allowed the kids to have access to the Internet along with parent permission. Since not every parent has agreed to allow their child’s picture to appear, or their name to appear, or their work to appear, they decided rather than have us teachers say, “Okay. We can put this child’s name on, but not this child’s name,” they just made it a blanket policy to strip all the names before you post the work on the Net.

Some of the parents at Rachel’s school didn’t want students to have access to the Internet even with supervision, so Rachel had to carefully plan how she would handle the project activities and e-mail communication that would occur. Rachel described her plan,

I was going to have them do the project anyway, but I wasn’t going to post their information to the LISTSERV or KidSpace. When I realized that some children didn’t get permission, I changed the nature of the assignment.

Everyone still gathered information, but instead of writing directly to the listserv or KidSpace, I turned the lesson into a word-processing lesson, and had them write all their information in a word-processor. They learned how to change fonts, and to adjust alignment, and save a file to the server. I posted the work of those students who had permission, but I did it myself.

Rachel also went online and found a free e-mail service, Gaggle.Net, which allows teachers supervisory controls and provides e-mail filters, similar to the district-approved Web-based e-mail system that Kelly used.

I needed district permission to go ahead...and I did go ahead and set up these e-mail accounts for the students, knowing full well that there is complete teacher control over them, and anything they get, I get to see first, and therefore the parents were okay with that.

Rachel decided to use the Gaggle.Net service with her third graders as they worked on *Monster Exchange* and—like Elaine’s decision for handling e-mail during the *Electronic Emissary* project—her own e-mail account to have her second graders participate in *Grandmother and Me*. “I had them put all of the stuff that they wanted to e-mail into a word processor, and then I just copied it and pasted it all into my e-mail, and sent it out myself.” Once parents realized how their students would be supervised and communicating with others during projects, all of Rachel’s students were able to participate in the project she chosen for their grade levels. Rachel explained, “Later in the year[—]when everyone did get permission[—]I taught the children how to post their own work, and they wrote comments [on the KidSpace Web pages for the *Grandmother and Me* project], too!”

The district Internet policies also created the first “stumbling block” for Rachel.

When the projects began, I had thought I would have to cut corners with the second graders. Due to our district policy of no names I feared that we would not be able to post our work to KidSpace [KIDLINK’s interactive Web site for creation of project Web pages], but instead be limited to e-mailing to the KIDLINK LISTSERV only...I know there is supposed to be a lesson where you do the four questions all together, and it actually is quite a nice lesson, and here is one area where I did take a shortcut. I photocopied the four questions and sent them home for the parents to review.

She thought that sending home the four questions would help streamline the process, since she only meets with students for forty minutes per week. “Most of the forms came back empty with an attached note from the parents saying that their child wasn’t permitted to submit any type of personal information over the Internet.” The turnaround came when her students started interacting with their grandparents and working on the project—work that could be seen online—and then parents began to feel more comfortable with the project. “They even sent in photographs from home to put with their children’s work. I was even allowed to use names as long as I limited it to first names. In the end, I didn’t have to cut corners at all.” Rachel did have to “cut corners” and add extra lessons with the *Monster Exchange* project, however.

One of the reasons cutting corners was necessary with the *Monster Exchange* project was because student names could not be posted along with their work. Rachel solved this by posting the work along with the creature's name. She also faced another obstacle that required cutting of corners because, as Rachel explained, "I could not allow them access to the Internet to do the actual uploading of their pictures. I had to do that part myself when the class was over, and I think they lost a little bit of that experience."

Rachel chose to include some pre-project activities to help her students hone their descriptive writing skills. She looked through past *Monster Exchanges* work and found examples of both good descriptions and poor descriptions with which students could practice.

I read the one monster description, and I said, "Okay. I want you to draw this monster as I'm doing this." And they would say, "What am I supposed to do with this? What am I supposed to do with that?" I would say, "It doesn't specify that, does it? That's something to keep in mind when you are writing your own description. Then we read the other description, and, "Oh, yes. This one has good detail. I can really pick out the monster from this." So we did a few practice lessons.

Once these preparations were complete, the students in Rachel's classes could begin to participate in their projects.

***Second graders and Grandmother and Me.*** The

*Grandmother and Me* project started out “very simply” for Rachel and her students. At first, she thought they would work on it for only about one month, but as the project began to get going and the student excitement level rose, Rachel decided to continue it for the remainder of the year.

The initial stages of the project took a while to work though, and Rachel was “disappointed for the children.” She was only able to show her students what other participants in the project were doing, publishing work for the few students “who did return their four questions, but ...I would be the one doing the uploading.” She felt that it wouldn’t be appropriate to teach a full class lesson on “sending the information to the LISTSERV” if only a portion of the class was able to participate. However, once the parents realized what the project entailed, they were no longer reluctant to have their students participate and were willing to have the children share family information.

Even parents who had initially been reluctant to allow[ed] their children to send in personal written information began sending in family photographs to be placed on KidSpace pages.

The first activity the students did was to discuss what names they used to address their grandparents. From polling just one class, they found out “that there wasn’t a single second grade

student in that one class who actually called their grandmother 'Grandmother' and their grandfather 'Grandfather.'" When that one class found this out, they became curious about what other second graders called their grandparents. This snowballed into an extension of the activity when they decided to survey the entire second grade, similar to the survey Kate's students completed around the topic of favorite sports.

[W]e got into some surveying, we got into a little bit of percentage, but not much because that's a difficult concept for them. But we got into graphing. So we did a bit of math with that.

Rachel had originally planned to have each class develop their own graph of information, but when the interest among students to discover what the second grade trend was for grandparent names, Rachel realized that an across-class graph would be more appropriate. They posted the graph they had developed online and attached the following written summary of results:

The most popular name for Grandmother amongst the second graders here was Grandma, followed closely by Grandmom and MomMom. However, there are many names that we call our Grandmothers. Some of the names that got placed in the Other category include: Oma, Savta, Bocie, Yaya, Nonnie, Madear, Memere, Ganama, and Busha. Whatever name we use to call our Grandmothers, we all love them very much!

Rachel's students then interviewed family members and shared stories about their grandparents that were published on KidSpace. They contributed special memories they had of their

grandparents, plus cultural and traditional information connected to their grandparents. For example, one student wrote:

Opa was my grandfather. He was special to me because he played with me. He taught me to love and help others. My Opa celebrated Christmas in Holland on December 7. That is when St. Nicholas came with presents. The kids would leave carrots in their wooden shoes for the horse that St. Nicholas rode on. On Christmas Eve they would have a big dinner and write letters or poems about the year. They would get little gifts. They lit their tree with real candles.

When students posted their information on the Web, there would often be comments from others visible at the bottom of the page, providing feedback about what Rachel's students had shared. For example, when one of Rachel's students told about her grandmother being Irish and telling tales about leprechauns, she received the following comment from a grandmother in Iceland.

On Saturday May 04, 2002, Eyglo from Iceland said:  
HI L.! I have been three times to Ireland and I absolutely *love* Ireland. Irish people are so nice and kind to everybody.... Give my greetings to Ireland next time you visit. A granny in Iceland.

From activities such as these, simple and straightforward as Rachel found them to be, she soon realized that, little by little, "just as you roll a snowball in the snow when you are making a snowman," the project activities began to expand into other activities and other curricular areas.



***Expanding on Grandmother and Me.*** Rachel described the process of activities branching out into other areas as “snowballing,” something she found happening first as she worked on the *Grandmother and Me* project. The beginning event that triggered the snowballing effect was students’ interest in finding out what other second graders called their grandparents. What originally began as a project to enhance student writing began to bring in math and social studies. As Rachel stated, “We’ve gotten into some social studies, we’ve gotten into some creativity with stories, and we’ve even done math with this.” The students also thought of other activities they wanted to do.

Of course, we got into some stories, because everyone has their own name for their grandmother or their grandfather, and of course they didn’t just feel satisfied saying, “I call my grandma ‘Nanny’.” They wanted to say why they called their grandma ‘Nanny’ and we got to hear the whole history. Then they liked being in touch with their grandparents and writing their grandparents back and forth, and they liked the idea of being able to put their work on the Internet.

Another activity that sprang from participating in *Grandmother and Me* was an end-of-the-year party that Rachel and her students planned, bringing the project to a close and celebrating the work they had done with their grandparents’ and families’ help. “Families were also asked to share any stories, photographs, special items, or traditional recipes (and provide samples of these recipes, for tasting if they wished).”

The students learned how to design invitations using several different pieces of software, and Rachel showed them how to use a scanner and upload their pictures to the Internet. Lessons and activities also included how to plan a party and carry out a party. They planned their budget for expenses using spreadsheets “as we planned menus and activities.” They also had to determine the best time to have their party. Rachel gave them a list of dates to choose from, beginning in April 2002 and ending in June 2002. There were several factors that each class considered as they formed their plans, including the 40-minute time limit for each party, such as

- a) School calendar – what other events might interfere with a party?
- b) When could most invitees be likely to attend?
- c) How much time would we (hosts) and they (guests) need to prepare the best party?

Rachel was quite pleased by the response that students had to the invitations that went out. When the party days arrived, family members took off work to attend, several coming from long distances such as Arizona, Florida, Maryland and Michigan.

One grandmother even brought her cell phone, because her forty-sixth grandchild was due to be born at any moment! There had been a terrible storm the night before one of our parties. Trees were down, roads were flooded, and power was out. The grandparents came anyway...The grandmother from Arizona took me aside and told me how her grandson had called her on the telephone sounding so hopeful, that she called her travel agent and booked her flight that very evening.

Guests told Rachel that they “wouldn’t have missed this for the world,” that they had enjoyed interacting with their grandchildren during the project and had looked forward to attending the event. They came bearing food, stories, “old photographs, family treasures, and boundless enthusiasm.” Stories included tales of their own youth and stories about their children—Rachel’s students’ parents. “Some grandparents had tales to share of how their parents came to this country, or the circumstances of how they met their spouses.” Photographs included old family photos and photo albums. “One family brought in genuine Irish linen that had been made by a relative in Ireland.” Rachel felt that enthusiasm for the project and “strong family ties” both helped to make the parties successful.

***Third graders and Monster Exchange.*** As Rachel worked with her students to learn the best way to write a description that someone else could use to draw a picture, she had to spend “a great deal of time” doing “a lot of practice” with them. “When we first talked about descriptive writing, they would say, ‘Oh, my monster is mean. My monster is scary. My monster eats people.’ But, I couldn’t draw their monster from that.” After practice sessions, Rachel had the students begin working on their monsters and writing their own descriptions, “letting their creativity fly.” First,

they used Kid Pix (an educational multimedia art program for children) to draw their monsters, saving their pictures onto the school's server. She didn't have students draw monsters by hand and then scan them because she had only one scanner available in the lab. When students finished their pictures, Rachel printed them out so the students had something to refer to when writing their descriptions. Rachel replied, "The children worked very hard to make their descriptions clear and easy to understand."

Rachel found her students coming into the lab very eager to work each week. They would arrive asking, "Are we going to work on our monsters today?" When students' descriptions were finished, it was time to send them to their partners—third graders in California—so that they could try to draw the monsters.

For example, one student described his "Triple Evil Tree" as

My monster has three green round heads and is shaped like a tree. It is a little different from a real tree. It has 2 blue spikes on each head. The spikes meet to form a V. His has 2 red circle eyes on each head. Inside each eye is a black dot pupil. His hair and ears are solid black. His mouths are red Vs. Each head has a bray(sic) beard. My favorite power that he knows is "Bloody Eyesight." It lives in the U.S.A. in Montana, I'm not really sure where. Can you make me one?

At the same time, Rachel's students were waiting to get their partners' descriptions e-mailed to them. It was at this time that problems with the project began to arise.

Rachel was using Gaggle.Net as the e-mail program for her third grade students, because she could preview their messages prior to sending them out. However, as they sent out descriptions and waited for their partners to send them monster texts in response, Rachel noticed a problem. She realized that the mail they were sending and receiving was becoming “lost.” Sometimes, when the students thought they sent messages, they would find out later that they had never been sent. To resolve the situation, Rachel had her students regularly check their “Sent” folders to be sure messages had gone out.

Many times, they would have to send something again. I don't know what happened on the receiving end. I can't say for a fact that all our partners sent us e-mail. I can only state with firsthand knowledge that some students never received e-mail from their partners.

Another technical problem caused difficulty for students as they participated in the project. Rachel found that when she had the students in the lab and they tried accessing Gaggle.Net or *Monster Exchange* concurrently, they were unable to get the sites to download. “Neither the Gaggle Net server, nor the Monster Exchange server could handle all of us being logged on at the same time.” She found that if more than two or three students attempted to use Gaggle.Net or go to the *Monster Exchange* sites at the same

time, the computers “would simply not be able to make the connection.”

Size of drawings became a problem for Rachel, too. The *Monster Exchange* had listed specific dimensions for posting to the site: 200 pixels by 200 pixels, or 2.78 inches square. The students didn’t have a software application available to them that allowed them to resize their drawings. This meant that Rachel had to resize all of their pictures, “which placed a delay between the time the children finished their work, and it could be uploaded to the Web site.” When at school, Rachel used a program called ImageReady to resize pictures. She also e-mailed pictures to herself so that she could work on them at home using ImageFolio, rather than staying late at school to do the work.

***Expanding on Monster Exchange.*** Originally, Rachel had planned to expand upon the activities involved in the *Monster Exchange* project, similar to Anise and Jay’s development of additional projects (i.e. the hollow egg project and the animal trading card project). Rachel had planned to keep communicating with her California partners to help the students “to learn about each other.” She and her partner teacher were thinking of either keeping communication at a basic level (e.g., keypals) or to go ahead and try to “develop other collaborative activities for us to do

together.” Rachel had thought that they might try developing a social studies or science project. “Sadly however, this never came to pass.” To her dismay, Rachel had not done much advance planning on expanding the project.

I just saw this as a potentially powerful educational opportunity. I figured the other teachers and I would mutually decide upon the topics. Being a computer teacher, I can be more flexible in my curriculum than other teachers might be, so I only had some general notions in mind. I thought about weather comparisons, state information exchanges, maybe conducting a science experiment in tandem, or even simple [keypall] exercises, but these were only undeveloped ideas.

Rachel said that her partners had shown interest in this type of exchange initially, but she never heard back from them when she sent e-mail inquiries about it. She hypothesized that the problems they had had with Gaggle.Net might have been responsible for the breakdowns in communication.

***Rachel's reflections.*** Rachel found the *Grandmother and Me* project to be particularly rewarding. “Well, you always want something that’s going to excite your students and get them involved. These did. They were enthusiastic about what they were doing.” The *Monster Exchange* project started out with high enthusiasm levels with her third graders, but the technical problems that plagued the project, causing the breakdown in

communication between Rachel's students and their partners, detracted from the success of the project.

The project itself worked just fine, but we had some trouble getting our e-mail set up, and then once we did get it set up, we didn't always get responses back right away from our partners, and it kind of lost its steam and went away. So it started out great, and we started out with a big, "Yahoo!" And it kind of ended with a whimper. While we were doing it, we had a great time.

Rachel was pleased, however, that both projects had "the snowball effect," spinning the projects into other curricular areas.

In the final case study Stephanie, a first grade teacher in New York, shares her perceptions of integrating telecollaborative and telecooperative projects into the curriculum for the first time. The online projects that she chose were *That's What Happens When Its Spring*, a Global SchoolNet project, and *Monster Exchange*, the same project that Rachel chose for her third graders.



## **Stephanie**

[I]t's just always exciting to have something new and different that's valuable, and it's not just bells and whistles, that's brought into the classroom, and it was really something we were able to use. So it's been exciting, and I've really spiraled out into the curriculum.

**The teacher and her students.** Stephanie teaches first grade in a K-5 school in New York, about 35 miles away from one of New York's major cities. The school district "encompasses several small towns," and in Stephanie's town there are five elementary schools, one middle school and two high schools. Stephanie explained, "Our population is economically diverse, drawing from areas of \$500,000 to 750,000 homes as well Section 8 or subsidized housing. A number of parents work in [the nearby metropolitan city] as professionals, firefighters and police officers." Stephanie's K-5 school is made up of three to four heterogeneous classes at each grade level. Stephanie described it as,

Our school has three to four sections of grades K (half-day) through five. Classes are grouped heterogeneously, and Special Education classes are incorporated as inclusion classes with the non-classified students.

There are typically twenty students in first classes. Stephanie said, "Approximately 1/5 of my class receives Speech and Language services due to articulation and/or language processing difficulties." Reading abilities in her class range from kindergarten to third grade level and "[m]ath skills also cover a large span."

Stephanie has been teaching for over twenty-five years starting as a “special education teacher” and moving into regular education classes after fifteen years of experience. She remarked, “[W]hen you’ve been teaching for 25 years, you tend to have certain things that you use...we have the same old curriculum...the same standards that we teach from.”

Stephanie feels that her background in special education has had an impact on the way she teaches her students. For example, during the 2001-2002 school year, Stephanie’s class of nineteen students included several who were “language delayed.” Due to her background, she knew it was important to make every attempt to get each child to contribute to class discussions, “draw[ing] everyone out so that everyone can take part.”

***The introduction of technology in Stephanie’s class.***

When computers came into Stephanie’s school, she was “one of the ones saying, ‘Could you please just get us a spelling program? Don’t put three computers in my room. Could we please just have some new books for reading, please?’” A bond issue had been passed to fund the initiative, and Stephanie was “flabbergasted” that an extra bond would be passed “solely for these computers.”

The district sent out a group of technicians to install the computers and Stephanie had no idea how to use them in her

classroom. She felt it difficult to connect with these technicians because they “couldn’t even relate” to her questions and concerns.

They didn’t understand the ramifications of taking away a coat rack in a first grade. They were like, “Why can’t [the computer] go there?” You know, where are they going to put their coats! Kids come to school with coats.

Reflecting on her experience, Stephanie realized that it is important for districts to determine how to help teachers integrate technology. “If the aides in the other schools aren’t quite as dedicated or as enthusiastic as [our] aide, then are the teachers not using it as much?” She felt that the “huge turnover of teachers” has brought in numerous new teachers who are computer literate,

but they’re coming in computer literate in terms of doing papers, making banners, but not necessarily knowing how to incorporate an online project. They hardly know how to do a project in class, much less incorporate one.

Instead, she felt that teachers should focus on curriculum first and get assistance integrating technology into the curriculum.

During the 2001-2002 school year, Stephanie’s school district asked each principal to choose one teacher at each grade level to meet twice with other teachers on the same grade level to learn how to use technology in the classroom. These people would be “turnkeys,” bringing their learning back to their own grade level teams. They would also ask all K-6 teachers to incorporate “at least one [online] project.” When Stephanie’s principal approached the

four first grade teachers at his school, the designated role fell “by default” on Stephanie’s shoulders.

There are four of us on the first grade team, and one has been teaching for many years and is having a major health crisis right now, and I wasn’t about to dump it off on her. She’s also like PTA rep. and does other things. The other two are 22, just out of school, teaching for the first time, and they’re there until 6:30 each night just getting it together for the next day. So kind of by default the principal said, “Will you do this, or take this to the team and see who will do this?” And nobody said anything and I said, “Okay, I’ll do it.” You know, a big sigh. “I’ll do it, I’ll do it.”

**Formal training.** Stephanie’s interest in becoming involved in an online project emanated from a workshop she had attended about designing online projects. Her district technology coordinator led the workshop as part of the district’s initiative to incorporate online projects in all classrooms, and Stephanie had been chosen to represent her grade level. Over the course of two days, teachers chosen as school representatives were to learn about online projects and then design a project that all grade level teachers were to implement in the fall of 2002. As Stephanie explained, “We [were to] develop...one project for the district-wide first grade to do next year.”

Second grade teacher representatives had already been called together and had developed a project that revolved around their science curriculum. Next, the first grade representatives were called in.

I was a little daunted because they wrote their own project, and I thought, “Whoa!” I was thinking, “I’ve got to go in there and write a computer project? You’ve got to be kidding me. I barely know how to turn the thing on.”

Fortunately, the technology coordinator alleviated their fears, telling them that the second grade group had been made up of representatives who were more “comfortable with technology.” She told the first grade group that they could do things differently, giving them “lots of options.”

Stephanie’s first take on this idea was that the project they developed should be “something substantial,” not “just a game or a puzzle.” If this change was going to go on in her room and take up her classroom space, “the kids aren’t going to just play games, we’re not going to sing songs and read a book together with bells and whistles, it’s not going to be that.” She and the other teachers went through examples of online projects suggested by the tech coordinator during the morning session of one of their workdays. In the afternoon, they were to develop their own project. However, Stephanie felt that they had been through too many sites in the morning and were tired of sitting in front of their computers. “We were all kind of feeling overwhelmed, like ‘How do we write up a computer project?’ ‘We don’t have a clue how to do this.’” The technology coordinator suggested that they take one of the projects they had “really liked” and adapt it to fit their “own curriculum” and

their “own needs.” She then hunted down the curriculum guidelines for first grade so the teachers could refer to them as they adapted their project.

I think we were operating from a set of assumptions. We had all just been to the site. We had different ideas about what would come out of the site, how it would work with our class, and we were all talking theoretically because we hadn't done it with the children.

Stephanie also felt that “interpersonal dynamic[s]” came into play in the design of their first project. The range of experience among the representatives ran from older, more experienced teachers to younger, less experienced, “but very enthusiastic teachers.” She thought that this caused people to hold back, avoiding critical remarks. “When you are doing a group lesson plan, I'm sure the younger teachers think, ‘Oh, that old fuddy-duddy. This is exciting.’ And it is, and I value that. On the other hand I'm thinking, ‘This kid is crazy. That will never work.’”

Luckily, the technology coordinator was “gracious,” listening to the teachers as they worked. She explained that they would continue to work on the project until they “got it right.” This is an example of the kind of support that Stephanie felt helps promote acceptance of new ideas. The coordinator acted as an intermediary between the Superintendent of Instruction who wanted a project developed at each grade level by the end of the year and the

teachers working on the development, between, as Stephanie phrased it, “teachers who know nothing” and those who “know everything” in terms of technology.

She had to stand up to that person and say, “Here’s what we came up with, but we think we need to change it.” She’s willing to do that. I think that’s wonderful, and that makes me feel like if I make a mistake it’s no big deal.

The technology coordinator typed up their project ideas that emerged on the day of the workshop and printed them out to send it to each representative. Several days had passed by the time Stephanie received hers. She looked it over and felt rather dismayed—the plans didn’t “make sense to me anymore.” She was afraid that if she took it to her team, it would “panic everybody... everybody was going to burst into tears.” Looking over their ideas, Stephanie decided that what she needed to do was to try a project out: “I have to see how I can do this with my own class...and see what happens.” She also felt that her teammates were too busy at the moment, and it would start the project off on a “bad foot,” if she didn’t test out the ideas first in her classroom. She wanted to wait, giving them “a little time to get it straight first before we present it, so we don’t just shoot ourselves in the foot and they hate it all. Then we’re having to back pedal and say, ‘But come look, it’s a great project.’”

The response from her coordinator was very supportive and “affirming.” The coordinator listened to Stephanie’s concerns and agreed with her. She told Stephanie that there wasn’t a need for her to rush. They would have time to “digest it” before they met again, and she thanked Stephanie for her suggestion about waiting before presenting it to anyone. The coordinator appreciated Stephanie’s idea to test a project in the classroom, and “[she] e-mailed me about the *That’s What Happens When It’s Spring!* project,” one that she recommended Stephanie try as her first project.

Stephanie started working on the *That’s What Happens When It’s Spring!* project and looking into the *Monster Exchange* project. She was able to take a different look at the work she had done with her grade level group during the all-day workshop after only initial project steps. “I was understanding it at a different level than just sitting in a lab with five other adults working on it that way.” It helped to see what students in first grade could and could not achieve while working on a project.

***The projects-That’s What Happens When It’s Spring & Monster Exchange.*** *That’s What Happens When It’s Spring!* was created by a first grade teacher in New Jersey and was announced on the Global SchoolNet Hilites e-mail distribution list. It was



designed to give students a chance to share signs of spring where they live through writing and illustration (see Figure 4.7).



Figure 4.7 Like the Monster Exchange project, That's What Happens When It's Spring opens with a portal into other areas of the project.

Each teacher interested in participating sent the project organizer her name, grade, school, town, state/province and country information. Registration was open until twenty-five K-4 participants registered and the project was scheduled run from February through April 2002.

In this project, classes read about spring, picking their favorite books and/or *That's What Happens When It's Spring* by Elaine Good and illustrated by Susie Wenger. Next they identify events that let people in their geographic area know that spring is arriving. Materials that are posted on the Web include: 2 poems or descriptive paragraphs about events that signal the oncoming of spring, ending with "That's What Happens When It's Spring!"; one to three illustrations and/or photographs relating to spring; the title of the class' favorite spring book; their state's curricular and technology standards that represent what the class did for the project; and links to any class Web pages created for the project.

Like Rachel, Stephanie and her students also took part in the *Monster Exchange* project. Stephanie described the *Monster Exchange* as:

...a very different kind of project, very language based. What that one is, is you're buddied up with a class—we're buddied with a class in Canada. Basically someone asks you to be a buddy. You put your stats online, and I teach first grade, I have 19 students, I'm located wherever, then someone says, "Do you want to be my buddy?" and you buddy up that way.

And then the kids in each of the classrooms each draw a picture of a monster, then they write directions for how to draw that monster. So let's say the monster was a big blue circle with a red head and black arms and green claws. They write down, "Draw a blue circle for the body. Draw a red head..." write down very simple directions, and then the directions are e-mailed to the buddy class. Then the buddies draw from their directions what they think the monster looks like. Then on the site they pair up and in the end they put the directions, and they put the original monster and then the response monster that's been drawn following the directions. And the site has examples, because it's been going I think like over 120,000 kids have used the site since it's been going for quite a few years.

**Getting started.** Stephanie took what she called "two small projects" and adapted them to fit her students' needs. She feels that having curricular connections makes both of the projects she incorporated "very real." She said that she just looked at the project's Web sites and said to herself, "I like that project. I'll do it." Rather than taking them on concurrently as Rachel did, Stephanie decided to do the projects consecutively.

Looking over the pages online that supported the *That's What Happens When It's Spring!* project, Stephanie was pleased to see the resources the developer provided. "She has basic information on the sites, then there are tons of links that are available for use. And each teacher is submitting lists of books that they read...a wonderful resource there for next year because all these teachers have listed these books."

It was during the initial part of the project that the technology aide on Stephanie's campus, Becky, found out about Stephanie working on an online project. Becky heard about it through an e-mail message she had gotten from the technology coordinator.

The technology aide ran right down to the classroom, "I'm so excited! This is fabulous. How can I help you? What can I do?" Periodically she would e-mail me back and forth and say, "What are you doing?"... She is just a lovely person. Instead of saying, "I'm free at..." she would say, "When are you going to do it?" And I would say, "I can do it,"—because I'm first grade and other than specials we just have lunch and recess, so I would say, "I can do it between so and so, when are you free?" We'd flush out a time together, because that's just the way she is. And I'd say, "Okay, we'll do it at a certain time."

They worked together closely throughout the projects, and—like the Super-Users on Kate's campus—Becky checked in periodically to see how things were going and offered to help Stephanie with any technical aspects of the projects. Stephanie felt this was particularly encouraging and supportive.

As Stephanie considered the various activities involved in her first project, *That's What Happens When It's Spring* (TWHWIS), she was faced with a few barriers. One was a conflict between project expectations and her district's acceptable use policy for Internet use in school. The project suggested that teachers post a class picture online. However, Stephanie's district doesn't allow pictures of students to go online. In thinking about the conflict, Stephanie

determined a way to circumvent it. She thought, “[W]hat if each family at home, as part of a homework project, researched a spring flower native to New York, then the children made it on paper plates, very simple, brought it in, [and then] put the paper plate in front of their face when we took the picture of the class for online.” Another conflict that occurred was difficulty in finding one of the resources suggested by the project designer, the book *That’s What Happens When It’s Spring*. “She just said in her list of things that she would like submitted she said, ‘I suggest that you read this book. It’s fabulous.’ I couldn’t find it, the library didn’t have it.” She next tried locating it at bookstores in her vicinity, but was still unable to find it. Stephanie solved this problem by going online and ordering the book for herself. They have also ordered it for the school library now.

Once Stephanie had the book, she read it to her students. She felt that it fit right in with the kinds of repetitive reading her students were doing.

We watched the pollywogs turn into frogs because every page ends in ‘that’s what happens when it’s spring.’” So of course by the fourth page they were all reading and shouting out loud, ‘That’s what happens when it is spring.’

### ***Integrating That’s What Happens When It’s Spring!***

Stephanie began the project just before spring arrived in New York and achieved her goal to “end it by Open House.” When Stephanie

became involved in the project, one of the first steps she had done, as described above, was to take a class picture with each child holding a “flower” up to hide her face. The students had done a lot of the work involved with this step at home with family members, “research[ing] a spring flower native to New York.” Stephanie was really “energized” by the parental feedback on the project; and like Rachel’s parents and family members who took part in her end-of-project activity for the *Grandmother and Me* project—they were excited about it. When the students came back to class with results of the work they had done, they would say things like, “Look, this is a real, live buttercup.”

While students were researching flowers, Stephanie also brought in live flowers for them to look at. The idea came to her as she was walking through the grocery store and saw flowers on sale. She brought them in to show to her students. The buds of the flowers were closed at first, and Stephanie asked, “Okay, what are these? What flowers are these going to be?” The student couldn’t tell. “We watched them bud, and the children were just electrified. Every morning or in the middle of the day they would go, “Look, they’re opening right now!”

In the classroom, Stephanie continued reading spring books to her students. They read four other books besides the one

suggested for the project: *Planting a Rainbow* by Lois Ehlert, *Swamp Spring* by Carol and Donald Carrick, and *Ducklings and Pollywogs* and *My Spring Robin*, both by Anne Rockwell. She felt that the activities involved in the project were taking them all into new areas of learning, “and yet they’re all tied to the curriculum, being aware of the world around us, and the children are writing about these things.”

Next, Stephanie took her students out for a “spring walk” on a very “cold, blustery day.” Though Stephanie has a digital camera of her own that she know how to use, Becky volunteered to come along and take digital pictures. Stephanie explained that Becky’s assistance was valuable.

While Becky was taking pictures I was teaching or interacting with the children in some way. As children’s faces are not allowed to be on the Internet due to district policy, I am usually the one identifiable face in the picture.

Stephanie felt that this assistance from Becky helped her project to “evolve.”

]And also the excitement and enthusiasm of these other two people, the two technology people, that also kept me from saying, “Oh, I’d love to take this picture, but I don’t know how to do that.” They would say, “That’s okay, I’ll do that. I’ll take care of the technical part.

During the walk, student discussion brought up ideas about spring, such as “It was really windy out. I can’t wait to fly a kite! That’s right, we do that in the spring.”

When they got back to the room from their spring walk, Stephanie presented the next project activity to the students—writing two-stanza poems about signs of spring, which “the kids just loved.” First, she read a story to the students that was formatted like their poem stanza might be, even though it was a book about “waiting for Halloween.” She told the students that they would be writing about “waiting for spring,” and the words just flew out of them. She found that she had to work a little more to draw out her language-delayed students, however.

I said to one child, “Is there a sport that you like to do? Is there some game that you like to play in the spring?” And he said no, that he liked soccer and that was the fall. I said, “What about your clothes?” And he said, “I get to take my jacket off,” because he hates this jacket that he wears. So that was his line, “We’re waiting to take off our jackets.” That was his contribution.

She said that by listening carefully and “evaluating” students’ responses, she could be better able to productively prompt students for a contribution. The collaborative two-stanza poem they created was entitled “Waiting.”

### *Waiting*

We are waiting...  
for caterpillars to change into butterflies  
to pitch a baseball  
for spring vegetables to grow  
for buttercups to tell us who likes butter  
to throw a Frisbee  
for the birds to chirp  
for the warm sun



for eggs to hatch  
to take off our coats  
because...

That's What Happens When It's Spring!

We are waiting...  
for hyacinths to bloom  
to hit a home run  
to see fluffy, little bunnies  
to go fishing  
for my birthday(!)  
to play soccer  
to see buds turn into flowers  
for birds to build their nests  
for purple crocus to pop up  
because...

That's What Happens When It's Spring!

The group writing process also evolved into a group art project. They determined what should be in the picture and who would be responsible for what part. Then they discussed size relationships of objects in the picture. For example, "we got in size and how we would measure, [asking] 'How many centimeters should the bunny be?' Because the bunny was 4 centimeters and the sun was 2 centimeters." Stephanie thought that rather than just an add-on, "we're just going to do it" project, the learning that occurred was "very real learning."

Stephanie's class was the third class of the twenty-five participating to enter their information. Becky assisted in the development of the Web page that was posted online for the project.

Stephanie said that there was a “part of me” that wanted to wait to see what others had posted in order to verify that they had done things correctly. Yet, she decided that they would go ahead and not wait for others. Then, as more classes posted their work online, Stephanie shared the information with her students. She described how she incorporated this as:

Now we have all these people from all around the world—from Ireland to Missouri to Oklahoma and New York, all these people are putting on “That’s What Happens When It’s Spring” and in their location. So now we’ve got this whole social studies thing that we’re doing where we have this map in the classroom where we mark where children have been or where they’ve lived, and now we’re marking in this is Mrs. So-and-So’s class, look at that poem, that picture, that robin, this is where that happened and we mark it on the map. So that’s just another spin-off.

Reflecting on the activities in the project, Stephanie thought that her students were able to “really experience spring” in a way they hadn’t before, similar to the findings of previous participants who thought their projects were “enriching” or “added new dimensions.” Prior to the project, her students understood “spring” as a period of time, or that this season could vary in many ways. She found that participating in the project helped students understand the changes that take place, an “example of that power that has been exciting and energizing.”

Stephanie had originally hoped to finish the project by the school’s scheduled Open House so that she could show the

students' parents the things that they'd been doing. She said, "It was helpful that, in terms of my scheduling, the project had a beginning and an end." To prepare for the Open House presentation, students put their flower projects used in the class photo on their chairs, creating a classroom "garden." The parents were able to see productive use of computers—something Stephanie felt was important—and they were "thrilled" to see what their children had accomplished.

Stephanie's students were also "thrilled" to see their own work go up on the Web site. As she went through the site with them one day, they saw their own page on the Web. The students screamed, "That's us!" Stephanie noticed that seeing their work on the Web motivated them to request other, similar activities to do. They also revisited their work often and "[w]e continued to check the site for new listings, enjoyed seeing spring emerge around the world and entered each location with a dot on our World Map."

***Getting started on Monster Exchange.*** As Stephanie examined the *Monster Exchange* project, she thought, "So... how am I going to do this with my class? I'm going to forget about the lesson plans that we developed and see with these children what's the best way to do it." Like Rachel, who decided to start with pre-writing activities, Stephanie began by slowly reading stories about monsters

to her students. One story she found particularly effective had a mouse telling other animals in the forest about monsters they will see, describing it in detail. After introducing the monster theme to the students, Stephanie took them to the project's Web site and "of course they loved it because first graders love monsters—at that age they're fascinated by them because part of them still believes they're real, but really in their minds they know they're not."

Stephanie used a projection device to allow the whole class to see the Web site together, and as they looked on, she covered up the monster graphic drawn by a young girl in Canada—the Purple Flee Monster. She read the description to the class so that each student could draw his own Purple Flee Monster. Using skills they'd been taught under "Standard 3 in New York"—a language arts standard that critical analysis and evaluation (New York State Education Department, 1996)—students applied critical thinking and analysis skills to compare their monsters with the Canadian girl's monster.

It was so funny because they were indignant, "Well she didn't tell us where to put the yellow curl. She just said the yellow curl there." I put it down. I said, "Oh, so when we do our monsters and give our directions, we really want to be sure that we include the location and the direction of the item on the body part." They said, "Oh yeah! That's not fair!"

Next, they compared the way directions were written for several monsters, trying to determine which method of writing a description got the idea across best. The students decided that, rather than

writing their descriptions in a “story format,” they would do them “in a logical sequential way.”

***Integrating Monster Exchange.*** Stephanie’s class was paired up to work with another first grade class in Canada. After practicing writing descriptions, the class was ready to begin the actual project. Stephanie saw that the project requested class sizes to range from eighteen to twenty-five students, which worked fine with her group of nineteen. She thought that the fact that students could draw monsters by hand also fit her students’ abilities, “[b]ecause the grapho-motor skills of some first graders are still evolving, I try to give the children as much space as possible in which to work.” She wanted her students to have enough space to be creative without worrying about size. Some of her students used the entire 8 1/2” x 11” paper they were given, while others “drew small figures.” Stephanie put no limits on monster size other than the paper size limit. When each drawing was completed, it was ready to scan to create a digital image to post to the Web site. She didn’t work on this every day with them—she decided to “spread it out over time.” Completed drawings were scanned and edited using PhotoShop to make them “Internet friendly.” Stephanie’s husband helped with the preparation of the digital versions of the pictures.

Stephanie noticed her students voluntarily accessing the project's Web site during their "center time." She was pleased to see the interest level the students had as they sat reading what was on the pages they had accessed. As Stephanie noted, "They were clicking on the pictures and they were reading together this blurb that was really written for adults because it was on our school site, but they were reading away because it was about them, and they were so excited to read it."

Next, Stephanie had her students write the directions for drawing their own monsters. Her partner teacher was also working on directions, and both felt that it was difficult to do with their students. "They are high level thinking skills to be able to look at a picture and say what you draw." Stephanie decided to do an intermediary lesson to help scaffold her students' learning.

I divided them into four groups and I just said to work together and draw a monster. So I gave them 5 minutes to work together and gave them a bunch of markers, and they all made this monster all drawing together. Then I said, "Okay, you're going to tell me how to draw this monster and I'm going to draw it here." So they did it orally, practicing giving me the directions, and you could see the frustration on their faces when they wouldn't tell me where to put it, so I put the head down underneath the feet or something, and they would laugh. Then as we went on, each group got better at saying, "When you draw the head, it goes on top of the body, and it is 6cm tall," so we got better and better at it.

Stephanie felt this was a "wonder project," because her students were "using centimeters, they're measuring, they're

learning how to be more focused in their language.” In first grade, they learn basic shapes and she thought the project helped to expand their vocabularies. They also learned how to do a “how-to drawing and a how-to explanation.” When her students had finished writing their own descriptions, Stephanie conferenced with them individually “to see if it is the way they want it to be” before sending the e-mail messages to Canada. Stephanie found Keith’s directions exemplary, for example:

Woo

1. Woo is 8 cm tall.
2. He has a black outlined, square body. It is colored in black, orange and green.
3. He has three, triangular ears on the top of the rectangle and between 2 ears is a piece of yellow hair sticking up that has a blue snake on top of the piece of hair.
4. Woo has 2 tails that are orange and yellow and are 13 cm for orange and 16 cm for yellow. The orange tail is straight and the yellow tail is an arch.
5. Woo has the word “Boo” on the snake.
6. Woo has two, green spikes on the right side of the square. The spikes have blue lines and brown dots on them. They are 7 cm long.
7. Woo has one, black eye 1 cm from the top of the square body.
8. Woo has an elephant trunk on the other side of the square. It is 12 cm tall and 6 cm going diagonal to the ear.
9. Woo has six, oval legs on the bottom of the square. They are outlined in black and colored in orange.

Yet one of the final phases of the project—the same phase that added extra work for Rachel—was unexpectedly challenging for Stephanie. She explained, “As the creative part of the project came

to a close, we were beset with tremendous technical difficulties as we attempted to submit our monsters to the Web site.” Stephanie didn’t think that she could have finished the project without her husband’s help. His Internet access made transfer of data happen much faster than they could have done on the school’s system with help from Becky. She had not anticipated problems like this from her initial experiences doing the project. She and her husband tried “several variations” on the directions for uploading the monster drawings before they found one that worked.

Another problem that occurred was the “long turn-around time” to see their partners’ interpretations of the directions they’d been sent, which Stephanie’s students found “frustrating.” Stephanie learned that her project partner was not as lucky as Stephanie in terms of support—she had very little. She “described her school as ‘years behind’ my district in terms of technology equipment, training and support. She persevered and her students’ versions of our monsters were finally loaded onto the site.”

Though frustrated, Stephanie’s students “were very patient with the delay.” They frequently checked the site to look for results, and they developed their own local version of monster exchange that they called *Monster Madness*. The students did exchanges with



classmates and friends and took the activity home to do with their families.

At home, some of the children drew monsters, wrote directions, and had their parents or siblings follow the directions to draw their version of the monster. The children loved to bring in what their parents had done and show how they had or hadn't followed the directions! They also invented games to play during indoor recess or at home where they gave oral directions for drawing a picture and a classmate or sibling had to follow their directions. Several parents also reported that their children asked them to give more specific or sequential directions when asking the children to do something at home!

When all the data were published online, Stephanie's students could accomplish their last task in the project—comparing monsters. “Educationally, the final steps...were incredibly exciting.” Stephanie described the activity they engaged in as more “sophisticated higher thinking.” The students engaged in discussions about the differences that were apparent, evaluating the directions. They found that the errors usually occurred from unclear directions or unsuccessful following of directions by their partner.

At the end of the year, Stephanie's class was invited to give presentations at a school district Technology Night. Stephanie didn't want to make this mandatory, and so just “six or seven” of her students attended the showcase.

They sat at computers at our middle school and explained their projects to adults who came by. They were incredibly poised and knowledgeable because they were speaking, not

from what they had been told by a teacher, but from what they had experienced.

One of the students who talked about the class' participation in the *Monster Exchange* was particularly "proud" of the description she had written, especially because the monsters drawn were almost identical.

She pointed out that, although her directions were long for a first grader to read, she had numbered them and that made it easier for her Buddy to follow them.

Stephanie was pleased with what she learned as she took part in the project. She felt that it would "inform" the group designing a similar project for first grade in their district. She thought that adapting the *Monster Exchange* project and making it "less daunting" would "make communication easier" and increase the "critical mass of enthusiasm" about "learning via technology" district-wide.

Having done the projects myself, it was very clear that we needed to do for the teachers across the district what had been done for me. We needed to remove, or make as simple as possible, the technical part of the project, therefore allowing the teachers to focus on the creative, educational piece.

Stephanie believes that teachers might be more likely to be excited about this "new way of learning." if they could have a chance to see the level of learning that is possible in an online project, and if they are not "weighed down by technical aspects."

**Stephanie's suggestions.** Stephanie had originally joined the two online projects to help her determine how to design an online project along with a team of other first grade representatives. Participating in *That's What Happens When It's Spring* and *Monster Exchange* helped to give her insights about ways online projects could help first-time users.

High on the list of insights she had was the kind of information provided by the site to assist teachers in integrating the project. "Clear concise directions" was one of the requirements she felt projects should follow in design. Knowing exactly what was expected in terms of tasks, time, and the type of equipment she might need would have been heavily influential in making a decision about participation.

It is best to go into a project knowing how long the project will take in student contact hours and in terms of additional teacher time...Had I known the hours of work it would take, I probably would not have chosen this project as a newcomer to online projects....I think a "rating" system...where sites qualify their project as "for beginners/little technical knowledge required, advanced technical knowledge needed, etc." would be a help to teachers as well.

One caveat she had was that directions should avoid being too technical. "[I]t would have meant nothing to me because I don't understand the mechanics of jpeg files, etc."

Stephanie also continued to emphasize the need for projects tying into curricular needs.

It was also evident that any mandatory project needed to be something that enhanced our present curriculum rather than having the teachers feel that the district was just “adding another new thing to teach.”

Another aspect of participation that Stephanie felt was “powerful” was the “interchange among teachers” in the project. Both projects she worked on had information provided by project participants that others could refer to as they took part in the projects. Stephanie particularly found multiple examples productive in helping her decide what to do, such as “ways to introduce poetry to the elementary student.”

Finally, Stephanie noted the importance of having assistance available, saying that this helped her to make it through the projects successfully.

If a teacher feels that she or he has technical support from the Site Master, a knowledgeable Technology Assistant, colleague, or even a family member, then the teacher can concentrate on connecting a project to her children and the curriculum.

***Stephanie’s reflections.*** The year before Stephanie had attempted to integrate an online project into the curriculum, she “grouched about loss of classroom space when the computers arrived.” Now, she says, they are an “integral part” of her program and the way she teaches. Her teammates and principal have noticed the difference, remarking on the project activities evident in the classroom.

They know I was not Ms. Technology by any means. So they're going, "Why are you doing all this stuff?" and I say, "Because it's really exciting, and different and new." You know, when you've been doing something for 25 years it's like shoot me, please.

She feels that being the "turnkey," and providing an example of change is one way to "bring them along." She is hoping that their excitement in seeing what is happening in her class will positively impact her role in helping her peers integrate online projects.

Maybe next year, when I have to look them in the eye and say here's the project we have to do, maybe they won't be so "oh my gosh" about it. They'll be like, "Oh, that's what you had on the [bulletin] board. Is that what you're talking about?" Like Anise, participation in the projects "stimulated"

Stephanie's teaching, because it was "enriching," though "somewhat overwhelming." She felt the stimulation of her teaching process was evident as she presented the *Monster Exchange* to her students.

She was amazed at the higher level thinking skills they demonstrated, and their excitement was "contagious."

The project impacted my curriculum in many areas as we located our partner school on a map, practiced "how to" writing, followed written and oral directions, measured monsters in centimeters, and compared and contrasted drawings. The project "took on a life of its own" as it spread across our curriculum.

The energy and excitement radiating from the children as they participated in the project was also evident in their parents' reactions to project activities. Stephanie kept parents updated in her newsletters and talked about the projects during Open House.

Parents were “thrilled” when they got to see what was going on, both in class and online. “One dad said to me, ‘I went on the site last week and I was so impressed.’”

Summarizing her experience, Stephanie said,

This whole thing I think has been so much fun for me, and so [meaningful] from the kids’ response. Anytime the kids break into applause over something, you know you’re doing something right.

The six participants in this study shared the stories of their novice experiences of integrating collaborative or cooperative telecommunication projects into the classroom. The preceding case studies were designed to provide readers with thick descriptions of the phenomena under study, thereby helping them to understand the contexts in which these teachers’ project stories were situated. Considering this rich contextual information helps teachers to draw conclusions and make inferences about how this study’s results relate to their own classroom experiences. The next chapter looks across the six case studies, examining the common themes that they shared.

## **Chapter 5-Themes**

The case studies in Chapter 4 provide the analyzed data for cross-case analysis and the development of themes. As described in Chapter 3, data analysis began during the data generation stage, with inductive analysis helping themes to emerge. The recursive process of data generation and analysis also supported the refinement of emergent themes. The themes presented here represent models of constructs (Ryan & Bernard, 2000) raised in the case studies that were either evident across the cases, or were derived from a single case.

Themes that emerged in this study fell into one of three areas:

- issues raised around the idea of online projects being integrated into the curriculum;
- issues raised about the benefits that communication with others during online projects had on the study's participants and their students; and
- issues about various influences upon online projects.

These concepts represent the perceptions of teachers involved in this study and are not necessarily generalizable to other settings. Rather, they provide a frame of reference that promotes drawing of inferences and transfer of these inferences by readers who connect their meanings to other contexts (Guba & Lincoln, 1989).

### ***Online Projects as Part of the Curriculum***

The three themes in this section share a common thread that touches on integration of online projects in schools. The various concepts described in these themes include curricular considerations, learning that occurred, and ways that others found out about what was happening in the projects.

#### ***Theme 1: Interweaving Online Projects into the Curriculum***

OET (2000) found that online activities should be an “integral part” of the curriculum (p.2). Similarly, as participants in this study shared their perceptions about integrating a telecollaborative or telecooperative project in their classrooms for the first time, they indicated which types of projects were worthy of their consideration. A strong concern was that projects should not be add-on activities to an already full curriculum. The participants in this study wanted projects that focused on curricular requirements appropriate to their particular students’ age levels. An added bonus that several teachers discovered was that projects offered more opportunities for learning than they first seemed to suggest, mushrooming into other curriculum areas and creating more activities that they could do with their students.



**By design and intent.** When the teachers in this study made the decision to attempt the integration of an online project, they purposely searched for projects that matched their curriculum designs. Some teachers—such as Elaine, Kelly, and Kate—had specific goals in mind, while the other three planned more general goals. The common denominator was their concern that projects would be real learning and not simply add-ons or, as Stephanie described it, “not just bells and whistles.”

Elaine wanted to “enhance the [civil rights] unit” that she had taught in previous years by combining that topic with an *Electronic Emissary* project. The *Electronic Emissary* asked Elaine to decide which curriculum concerns she wanted to address. She planned to have her students read civil rights related books and participate in “literature discussion groups.” She wanted her students to learn how to ask questions that “point them in a direction” that would bring them a more in-depth understanding of the topics being studied. She wanted the students to use what they had learned to prepare a class presentation via PowerPoint as well as to “eventually write [what they’d learned through research] into an essay.” The project met her goals by providing her with a subject matter expert who could address student questions, bringing more to the unit than she had taught in previous school years.

Like Elaine, Kelly had specific input into what her ePAL project would entail. Her original plan was to incorporate the activity into her social studies class, with her students communicating with “kids who were in present-day Egypt” as her class studied about ancient Egypt. She was not able to find an Egyptian class with which her students could correspond. Next, since her students were studying ancient civilizations, she thought that contacts with students in Greece would work as well as Egypt. She finally found a partner in Spain and decided to continue communication with that class, as its country had “a richer (and much longer) history than ours.” Kelly also wanted to use this opportunity to have her students improve their writing skills.

Kate was another teacher who began her project with specific goals in mind. First, she wanted to merge the *Active Living* project with her class’s study of ancient Greece. Next, she worked with her grade level team to determine specific goals and activities that would allow them to address, both curricular standards and technology standards.

Anise, Rachel, and Stephanie had more general ideas about the types of projects they wanted. Anise is a science teacher, and was therefore interested in bringing aspects of science into her project. As a computer lab teacher, Rachel designs her class

projects so that they incorporate skills that “[go] on in the classroom.” She wanted to start her experience with online projects using just one curriculum connection, “starting slow,” so she chose to look for projects that would focus on writing. Stephanie simply was looking for “legitimate ways to incorporate” an online project. She had no particular academic focus in mind. Instead, she only required that the projects she would work into her classroom activities have strong curricular ties. She wanted “real learning” to occur, and she wanted to analyze the process as it happened.

***As a serendipitous outcome of events.*** While working on their various projects several of the teachers realized that there were curricular connections occurring that they had not anticipated. They became aware of these connections as they were working on the steps and activities required for participating in the projects.

Anise's experience with the *Travel Buddies* project and the spin-off projects that she and her partner teacher Jay created demonstrated her perception of how projects could bring “some information...that [the students] can apply...to something in real life.” Anise found the project not only applying to her science curriculum, but also to language arts, social studies, and math. In science, Anise observed students going beyond the standard curricular expectations for sixth grade, finding out more about

various “types of animals and whether they [were] omnivores, herbivores, or carnivores.” For example, through their discussions with their partner class in Australia, they learned more about what koala bears were like in real life.

Like Anise, Elaine was surprised to see how students learned to accept “different perspectives” that were brought to her project by both her SME and her D.A.R.E. officer, who helped to clarify the student-suggested Rodney King arrest issue. The students learned about history and how it comes to be recorded as well as ways that civil rights issues have evolved from the Civil Rights Era and continue to be played out today, even in their own classroom. Also, two unforeseen events occurred that catalyzed discussion among Elaine’s students. First, their local newspaper carried a story that was related to the book they were reading, *The Watsons Go to Birmingham –1963*. One of the men responsible for the bombing of the Sixteenth Avenue Baptist Church had finally come to trial. This event helped to initiate discussion about the U.S. legal system and ongoing prejudice in the country. The second unforeseen event arose when the author of the book came to town, giving Elaine’s students “the opportunity to hear Christopher Paul Curtis, the author of *The Watsons Go To Birmingham, 1963*.” This raised questions about how the author wrote the book.

Rachel had begun with the plan that she would focus on writing skills in her two projects, *Grandmother and Me* and the *Monster Exchange*. Yet, she found her projects addressing math standards as her students chose to graph results of a survey of what names their classmates called their grandmothers. Students also became interested in finding out more about the places their online classmates were from, branching the project, as Rachel said, “into some social studies.”

For Stephanie, the curricular connections were “very exciting and very real.” Not only were the students working on writing skills—such as their descriptive writing in the *Monster Exchange* project—she found them using “critical analysis and critical thinking” as they compared their monsters with partner class’ monsters. The *Monster Exchange* process also tied into Stephanie’s math curriculum as students decided how to describe the measurements of their drawings.

***Snowballing-Projects-become more than expected.***

“Snowballing” is a concept that Rachel described as a growing and cumulative effect—that more activities and more connections to curriculum emerged while her classes took part in her online projects. Five of the participants—Anise, Elaine, Kate, Rachel, and

Stephanie—felt that the projects they initiated had developed into more than they had expected.

For example, the students in Anise’s class were pleased to hear that a parent in Australia had made a Mikey doll. Anise’s students took the idea and “made Mikey dolls, too.” Snowballing also occurred during the interaction with Jay’s class that led to the development of two additional collaborative projects. Each teacher chose an activity in which both classes would participate. Jay implemented an activity involving “trading cards of different animals and habitats.” Anise chose to implement a “hollow egg project,” having students develop different packaging schemes to transport a hollow egg to Australia without damage. Jay’s class “didn’t have time” to create packaging or ship their own eggs, so they modified the original plan. His class chose to evaluate and “report back” on the effectiveness of packaging as the parcels from Anise’s class arrived in Australia.

In Elaine’s class, students had been working on research reports and “journaling” about topics that arose through their reading and discussions. While reading *Freedom Summer*, Elaine decided to take the ending of the story as a prompt and asked students to create a new, alternate ending. Thus, students worked on both factual writing and creative writing.

Kate decided that she could expand the *Active Living* project not only in her academic classes, but in her art class as well.

We moved into art. We started out the year...we were getting a new playground outside, so we started trying to get this involved with the new playground. What we had them do was to do a model playground. The kids worked collaboratively on that.

Students used recycled materials to build their models. Kate also had students use recycled materials to create mosaics.

What they did is they found pictures out of magazines that showed people living actively, then they traced those onto a pieces of acetate, projected them onto a large sheet of paper. Then from there, they would cut little pieces out of colored magazines or whatever to get the right colors that they wanted. Then they took those little pieces and made a mosaic of people living actively.

Describing the snowball effect that occurred in her classes, Rachel said, “[The project was] never what you expect it to be.” Her perception of the *Grandmother and Me* project was that it began simply, but as the project progressed, it became more complex.

It’s led to so many lessons aside from the original project. There has been so much that we’ve been able to do with it. We’ve gotten into some social studies, we’ve gotten into some creativity with stories, we’ve even done math with this.

She stated that she found that the project contained “a veritable treasure of extensions to all areas of the curriculum.”

For Stephanie, the spiraling of projects into various curricular areas and developing into more than she had anticipated tied in strongly with her desire to address her students’ learning needs.

She took “two small projects and then adapted them to the needs of my students.” She developed lessons to accompany various activities in the projects in order to go into more depth than the project plans originally proposed. For example, her students “practiced ‘how to’ writing,” critically analyzed drawings, and kept track of project partners’ locations.

**Summary.** The teachers in this study believe that it is important that online projects that will be integrated into their classrooms have strong curricular ties. Several began project work with definite goals in mind, while others began with more general ideas about the curriculum-based goals they were trying to achieve. By focusing on the curriculum— one of the “seven steps to successful online learning...” recommended by Yoder (2003, p. 14)—teachers in this study were able to interweave their projects into their classroom practices, avoiding adding projects that were simply “bells and whistles.” Additionally, five of the six participants in this study began their projects believing that participation would have limits in terms of meeting curricular goals and types of project activities. As their projects progressed, the teachers found them branching into subject areas they hadn’t expected or into more activities than they anticipated.



## ***Theme 2: Learning as We Go—Participants' Learning***

All six teachers chose to incorporate online projects into their curricula. They were hoping to enhance existing units or to combine projects with classroom topics within the scope of standards for academics and technology use. Through the course of project participation, these teachers realized that students were not the only ones learning—the teachers were learning, too.

***Student learning that occurred.*** Student learning that occurred varied depending on the scope of the project attempted and ways that teachers introduced and expanded upon project activities. Besides specific curricular learning that occurred, several of the teachers found the quality of student work improving, as Porter (2003) found in a study of effective technology use.

Five of the participants found their projects meeting goals that they had set for their students. Anise's students were able to work on science topics that were part of their curriculum, including animal characteristics and problem-solving that was involved in "designing a parcel to protect a hollow egg." Elaine used the online project to teach her students about research skills while they studied about the Civil Rights Movement.

I was expecting to teach them how to take notes, and then once they got their notes, how to organize them, and then to eventually write that into an essay.

Working on the *Active Living* project, Kate's students learned various curricular concepts. One of Kate's goals for student learning that was achieved was gaining "knowledge of the computers and how to use the different programs," part of "Information and Communication Technology Outcomes set out by the province." The project also incorporated math skills the students were working on, such as converting "decimals and percentages." Like Elaine, Kate's students worked on research skills as they learned about ancient Greek and current day Olympic games. Kate's students also learned how to live a healthy, active life. Rachel and Stephanie both had opportunities to work with their students on descriptive writing. Stephanie was also able to integrate the topics of geographic locations and mathematic measurement into her students' project work.

Besides meeting specific curricular goals, projects also brought more depth to topics being studied by students of all the participants. Elaine's and Kelly's students learned more about asking questions. For Elaine's students, it was questions about the Civil Rights Movement that students needed to ask to garner more information. The students in Kelly's class employed questioning skills to spur conversation with their Spanish partners and to help the two classes to learn more about each other.

Finding out more about topics under study than what meets curriculum standards also occurred with the other four participants' classes. Anise's students went into more depth learning about animals, and Rachel's students did the same as they interviewed and learned more about their grandparents. Kate's students broadened their study of ancient Greeks and their Olympic games, incorporating information about current day Olympic events. Stephanie's students learned more about signs of spring and flowers native to their region.

Previously unknown concepts were addressed by three of the participants' classes. Prior to working on their *Travel Buddies* project, Anise's students "knew nothing about the time difference" between North America and Australia. Elaine's students gained an understanding of how history is written:

Sometimes in retrospect, what we think is important, or what we want to know, wasn't what the people who recorded history at the time thought was important. And so that was a real big thing with those kids. They realized that.

Elaine's students also started to realize that information could be viewed from multiple perspectives. They learned this through dialogue with their SME, from whom they realized that one can "be an expert in the field" without knowing all the answers. Finally, as Stephanie's students looked for signs of spring approaching, they

began to be aware that spring is a specific time period, and its arrival and effects can vary from place to place.

Two of the teachers found their students becoming more conscientious about their work while participating in online project work. Anise had had problems getting her students to bring homework back to school and was therefore hesitant about sending home travel buddies. To her surprise, her students were conscientious about returning the buddies and their accompanying journals promptly. They also took time to consider what they were writing in their stories about what their koalas were doing, carefully inserting specific information such as “making sure that the koala bear [was] eating lettuce.” Likewise, Kelly’s students became conscientious about the messages they sent to their Spanish ePALS, avoiding use of slang and contractions to help make reading and translating their messages easier for students in Spain, who were learning English as a foreign language.

Porter (2003) postulates that effective integration of technology facilitates shifts in student learning, “activat[ing] new possibilities helping students shift into higher thinking gears by practicing complex and inventive thinking” (p. 11). Teachers in the study noticed this “shift” occurring among their students as they complete on their project activities . Two participants discovered

their students using higher level thinking skills, specifically “critical analysis and critical thinking.” Kate’s students had to employ their higher level thinking skills as they evaluated the reliability of Web-based sources of information. Comparing completed monsters and evaluating “what went wrong” brought critical analysis into Stephanie’s class. Students extended this critical analysis when they took their *Monster Exchange* project home to their parents to try, and analyzed their parents’ abilities to draw pictures as described.

***Teacher learning that occurred.*** Of the six participants in the study, only two had joined in on an online project as part of a professional development plan. Kate and Stephanie were encouraged to do an online project as part of their districts’ plans to integrate such technology-based projects into the curriculum. Kelly launched into her project as a “pilot program” saying that her students were “guinea pigs” on her campus as they learned about working with others online.

Kate and Stephanie were also the two participants with the least prior knowledge in technology use. Other participants had varying levels of technical competency. Hence, the types of concepts they learned varied. However, all six found integrating an online project in the classroom to be a learning experience. McGee (1998)

describes this benefit of participating in an online project as an “incidental occurrence of learning,” (p. 203)—an unintentional form of professional development. As Kate said, each time she works with a computer, “I seem to be learning something new.”

Learning about the technology-related components integral to projects occurred for all six of the teachers. Anise, Elaine, and Rachel had to decide how to handle the e-mail that would be exchanged. Anise and Rachel found Web-based servers and set up e-mail accounts for their students. However, Elaine—and Rachel working with her younger group—learned how to manage sending and receiving messages via their own e-mail accounts. Both Rachel and Elaine had students compose messages using Word, which then would be copied and pasted into e-mail messages. Kate and Stephanie learned how to operate and use several types of programs and equipment. They both depended on help from others in order to learn how to use the technology.

Bonk, et al. (2002) found that teachers need “models of curriculum integration” to translate projects into “classroom reality” (p. 206). Reviewing examples of what other teachers and students had done helped participants in this study make decisions about what they should be doing. Rachel and Stephanie often relied on examples to help them decide how to teach concepts within their

projects. They both looked at past examples of monsters in the *Monster Exchange* project to give them ideas about how to proceed. Stephanie used examples and resource links provided by her other project, *That's What Happens When It's Spring*. She looked over examples of past participants' work, and compared her postings to her project partner's postings. Stephanie also relied on participation to give a hands-on example of how to design an online project—learning about the challenges with which first time users will be faced by trying it out herself. Anise was also able to learn by example as her project partner, Jay, a seasoned *Travel Buddy* participant, helped her to understand the details of project participation via private exchanges of e-mail.

Other types of learning and discovery that occurred among the participants were evident either individually or in small numbers. For example, Kate and Kelly both posted directions for assignments online to make them easily accessible for students and their parents. Kelly used ePALS' bulletin board system so that students could have reminders available about her expectations for their project work.

I just made that idea up. I thought it would be good for them, because a lot of my kids need some visual reminders; it's not enough for me to tell them orally what to do, but it's good for them to go back and look. I thought if they were ever going to be doing this from home they would need that written when I'm not there with them telling them what to do. Even their

parents can look at it, and they can have a better understanding of what I expect.

Kate used her GroupWise system to e-mail her specifications directly to students. She set up her GroupWise account, organizing her students in a group so that she could write a message that could then be sent out to each individual. As Kate mentioned, this “does make it more efficient because you then make one assignment and e-mail it out to them.”

Elaine’s discovery came when she was evaluating the effectiveness of the project as one of the wrap-up activities required by the Electronic Emissary. She felt that if she had evaluated the project from a “positivist” or teacher-focused viewpoint, it wouldn’t have met her students’ needs. However, taking a constructivist perspective, she felt that she could take advantage of learning moments as they occurred. In this same vein—considering a student centered, constructivist approach versus a teacher-centered, didactic approach—Rachel realized that sometimes it’s necessary to cut corners and adapt to changes as they arise. She acknowledged that teachers participating in online projects should be willing to adapt them as needed—thus, taking on more of a constructivist approach to teaching.

Stephanie began her project with the intent of evaluating the process in order to design a future online project with of a group of



first grade teachers. She learned that online projects need to be “as simple as possible,” “as explicit as possible,” with “clear, concise” explanations of the level of technical skills needed to be successful in the project.

**Summary.** Teachers in the study expected the projects to provide “valid learning” experiences for their students—what Harris (2002) describes as emphasizing strong ties with their classroom curriculum. Each found this to hold true of the projects in which they participated. They also found that learning was happening in two arenas: student learning and teacher learning. The latter was a surprise, as the teachers had not necessarily anticipated that they, too, would be learners while doing their online projects with their classes, something that McGee, (1998) found as teachers describe their “unexpected” learning (p. 182).

### ***Theme 3: Informing Others-Telling Others About Online Projects***

As this group of teachers worked the online projects into their curricula, word spread about what they were doing. They shared information about the projects with their grade-level teammates. They let others in their schools know about the project work going on in their classrooms, and they spread the news to other members of the school community, such as parents and district

administrators. McGee (1998) described this “spreading the word” among peers an effective way to encourage others to “try it” (p. 178).

***Spreading the word to grade level teams.*** Anise hoped that by sharing information with her grade-level team members, they might become interested in participating in an online project with her in the future.

I would like to incorporate my team—because I teach on a team with four other teachers—and try to get these other team teachers more involved in the project, too, and make it a whole team experience, rather than just a science experience.

She had hoped that her team members would have been able to participate when she tackled her first online project, but she wasn’t able to get them to join her. Two of the teachers seemed somewhat interested, but another was “pretty set in her curriculum and what she wants to do.”

Stephanie also worked get the word out to her grade-level colleagues. First, as part of the team of first grade teachers pulled together to design an online project for the 2002-2003 school year, Stephanie was “supposed to go back and be the turnkey person, [or role model]”, to encourage others to become involved in online projects. Then, as she and her class of students worked on their two projects, she put samples of their work up on her bulletin board. Her teammates noticed this as they came to her room.

Then for my colleagues to come in and say, “Wow, that’s really cute,” or “Oh, look at that!” To see them excited that maybe next year, when I have to look them in the eye and say, “Here’s the project we have to do, “maybe they won’t be so [overwhelmed, so] “oh my gosh” about it. They’ll be like, “Oh, that’s what you had on the board. Is that what you’re talking about?”

Not only did the news spread among the teachers to their grade level teams—others on the campus were also informed about what was happening.

**Sharing information campus wide.** In describing how information spread to students and teachers in other classes, Kelly said, “I guess good news travels fast.” The students talked to their friends about it, and their friends noticed them working in the computer lab. Kelly also made a presentation at a staff meeting. She explained how she had found ePALS and how “easy it was to select an ePAL class.” The staff “were amazed that we were able to communicate with students from another part of the world.” Though she welcomed them to join her, no one came forward. Kelly felt that some teachers might not be as “comfortable with technology,” while others might be too busy and not “have a lot of time to try new things.”

Like Kelly, Rachel’s students were instrumental in getting information about the project out. She had planned to run her survey for *Grandmother and Me* as a class-by-class project, but

students became interested in what other names classmates called their grandparents and thus the scope of the project widened.

The staff at Stephanie's school could see her students' work on her bulletin boards, but they realized that it was on their school's Web site. She felt that one of the reasons her peers were impressed with what her class had done was that she had been known to be hesitant to use computers in the classroom in the past.

***Getting information out into the community.*** Three of the teachers mentioned that others in their school community found out about what they were doing. Kelly, Rachel, and Stephanie saw the news spread to their students' parents and other relatives. Kelly's parents found out as their children became more involved in exchanging messages. Rachel's students had to contact their grandparents as part of the *Grandmother and Me* project in order to interview them. This spread the word among their families, culminating in an end-of-the-year party celebrating the project, with some grandparents traveling from considerable distances to participate.

Stephanie's parents first heard about the project in her class newsletter. Next, they heard more as she sent home project-related activities with students as homework. Then, she made a point to bring up the projects at the school's Open House. She also had a

Web site available for them to see their children's work. However, the news about Stephanie's project was broadcast to more than class families. The technology coordinator for her district made a point to notify Stephanie's principal about what she was doing. The technology coordinator also sent the news to the superintendent in charge of instruction, who had been instrumental in the district initiative to incorporate online projects.

**Summary.** Four of the participants shared information about how news about their online project work spread to their teams, their schools, and their school communities about their project participation. Being among a minority on their campuses attempting this kind of activity, these teachers saw that news about what they were doing spread across a wide spectrum: students, teachers, parents, relatives, and administrators.

### ***Communication in Online Projects***

This section explores issues about communicating with others while taking part in an online project. In telecooperative projects, communication interchanges are not necessarily part of the activity, as participants can work on their activities silently, virtually side-by-side. Telecollaborative projects, however, require exchanges of communication among participants, as they are working together to complete project components. The themes in this section describe

the levels of communication that occurred among participants—both students and adults involved with the project. It also describes a facet of communication reported in several other studies (e.g. Harris, 1999; OTA, 1995a; UNESCO, 2002; WBEC, 2000)—opening up new horizons for students.

#### ***Theme 4: Communicating with Others Online***

Communication with others is one of the key facets that distinguishes telecollaborative and telecooperative projects from online efforts such as teleresearch (Becker, 1998; Harris, 2002). Telecollaborative and telecooperative projects connect participants with others online, encouraging communication among partners during the course of the projects, while the primary goal of projects such as those focusing upon teleresearch center on use of the Internet for retrieval of information (Becker, 1998; Harris, 2000; WBEC, 2000). Some projects combine telecooperative, telecollaborative, and teleresearch components. As the teachers and students in this study were engaged in project-related activities, several types of communication occurred with others. Teachers and other adults involved in the project or working with the teachers communicated with each other. In some cases, students dialogued with the adults. For most of the classes, communication occurred

among students, with their communication levels improving throughout the process.

**Communication among adults.** The interaction among adults as the teachers were involved in online projects took on many forms. Most of the communication was carried on through e-mail messaging. However, one teacher—Anise—established a communication relationship that also involved phone calls and sending items through regular mail.

Anise collaborated with six different adults on the *Travel Buddies* project.

It's the communication between the two parties and their willingness to participate in it more than just the *Travel Buddy* project [that] I think just makes it more successful.

Anise was particularly pleased with the level of communication that she had with Jay. He shared his experience integrating the *Travel Buddy* project into classroom curricula, from which Anise benefited. Through dialogue, she also found they shared similar “philosophies on teaching.” He phoned her “a couple of times so we could know each other better,” and they kept up continued correspondence by surface mail and e-mail. Anise felt that communication between “the two teachers and the classrooms is a must!” She also believed that it is important, when looking for a teacher and class with which to partner, to find a teacher “who is as much interested in the

project as you and also [is] willing to put the time and effort into collaborating and corresponding.”

Five of the participants described one of the major characteristics of the projects as communication with other adults as a way to work through project ideas, as Anise had worked with Jay as described above. Bonk, et al. (2002) found this type of communication as a powerful way to “facilitate teacher reflection and sharing of teaching practices” (p. 210). Kelly’s communication with her partner teacher occurred primarily at the onset of her project. Their communication was basically about setting up the two classes through ePALS’ partner location services. Setting up a partnership was also part of Stephanie’s and Rachel’s initial interactions with their *Monster Exchange* project partners. While Stephanie continued behind-the-scenes communication with her partner, discussing the writing of directions in the project, Rachel was unable to maintain contact with her partner. She had hoped to use behind-the-scenes interaction similar to Anise’s and Jay’s, designing additional projects with her California partner. Elaine used behind-the-scenes interaction with her SME at the beginning of her project as an opportunity to clarify what she intended to accomplish and to help him understand the academic levels of her students. She continued communicating with him to let him know



how things were going in the classroom and what, if any, obstacles they faced. For example, the following is a message Elaine sent to her SME:

I am back from Virginia and am ready to roll... I am going to list a few events that I thought the students could research. Being more familiar with the topic, if you think that there are other events that would be more pertinent, or if you know that an event that I selected will be hard to research let me know. My goal for this week is to nail down the research topics.

Stephanie utilized e-mail in a manner different than the other participants. She regularly communicated with her technology coordinator to keep her apprised of her progress in integrating the two projects that the coordinator had initially suggested that she try. Describing one of her initial responses to her technology coordinator, Stephanie explained that she had “responded back to the technology coordinator saying, ‘Yes, I think I’m going to try this project with the other one that I’m piloting for next year.’”

***Student communication with adults.*** Communication between students and adults was less prevalent among the study’s participants. It occurred for Anise only a few times as her class worked with Jay’s. When her students’ box with Mikey inside arrived in Australia, Jay’s students looked through the box and posted a message to Anise’s students. She explained, “The kids over there were kind of disappointed that it was a flat Mikey,” a two-dimensional drawing, rather than a stuffed toy. Anise took the

opportunity to send a message to Jay's students apologizing about the misunderstanding about what should be sent. His students wrote back to let her know that one of their parents had created a "Mikey doll." Another event that connected Anise with Jay's students was when they began developing animal trading cards. One of the Australian students developed a prototype to send to Anise so that she could use it as an example for her class.

For Kate and Elaine, student communication with adults involved adults providing clarification of ideas and concepts as well as answering questions. The student-adult communication for Kate's students took place between Kate and her class online. "Students were encouraged to e-mail [me] for questions that did not require an immediate answer." However, Elaine's student-adult communication was the central focus of her project as her students worked with their telementor. For example, Elaine's students wrote asking their SME for assistance with several questions listed in one message to which Josh replied. In an excerpt from the exchange (see Appendix H), the following questions and answers were covered:

The students wrote:

Dear Dr. K.,

Greetings! Our unit on the Civil Rights Movement is coming to a close. We have learned so much. Today, each group is going to ask you one question, or maybe two, in hopes that you will share with us an idea we had not thought about. We loved your response about how the southern states opposed the Brown ruling partially because of their

concern with states' rights. When we have edited the PowerPoint presentation that we put together we will post it. Once again, we want to say thank you so much for helping us.

Brown vs. Brown:

Did the Brown vs. Brown decision only deal with public schools or did it address segregation in other places like bathrooms, buses, parks and water fountains?

Josh replied:

Technically, Brown dealt only with segregated education. However, in the interpretation of the 14th Amendment by the Court, it was clear that the principle of equality would be applied to other areas. Some were the subject of court cases. Some came from action like the boycotts (Montgomery and transit systems). Some came from the 1960's civil rights laws.

The students wrote:

Martin Luther King

Have you ever read King's first book, *Stride Towards Freedom*. What is it about? Do all states in the United States celebrate Martin Luther King day?

Josh replied:

I have not read King's first book, but I have just shown his "I have a Dream" speech to a class. While it is only 14 minutes, it is a powerful speech with much meaning today.

The students wrote:

Black Panthers

Were there other programs or causes that the Black Panthers got involved with? Did the Black Panthers always use violence, or did they ever use non-violent approaches?

Josh replied:

Local Black Panther groups got involved in a variety of self-help programs in Black neighborhoods. This had an additional benefit of gaining community support. As a group, the Black Panthers have been mainly a semi-military group using violence or the threat of violence. They did, however, often engage in demonstrations that did not result in violence. Much of the membership had its origins in many of the non-

violent organizations. They often came to the Black Panthers since they felt the non-violent approach was not working.

As mentioned previously, Elaine appreciated the “multiple perspectives” that the communication with their SME provided for her students.

***Student-to-student communications.*** Sending and receiving mail from students in the partner classes was something that was mentioned by four of the participants: Anise, Kelly, Rachel, and Stephanie. Three of these teachers also found that the quality of interchanges improved over time as the students dialogued with their partners.

Rachel and Stephanie both participated in the *Monster Exchange*, and student-to-student communication was crucial between their students and these in their partner classrooms. Students relied on their partners to exchange directions for drawing monsters so that they could complete the activities that were part of the project. Stephanie noted that her students’ ideas about ways to describe their monsters to their partners changed as they considered how the recipients might deal with the directions. They began to realize that they needed to be very explicit. One child was “very proud that her directions were so clear on *Monster Exchange* that her ‘buddy’ in Canada had drawn the monster almost exactly like the one she had done.”

In Anise's project the student-to-student communications took place as students let their partners know what their *Travel Buddy* ambassador was doing.

The e-mail, I think, they basically copy from the journal on there, but it's very detailed and giving the description as to what the little buddy does each night.

Anise also found her students taking more care with their writing and detailing of messages, being sure to "write in complete sentence[s]." Her students had looked forward to learning what their partners thought about what was happening and hearing back from them about what their own *Travel Buddy* ambassador was doing.

Likewise, Kelly's students looked forward to hearing from their Spanish ePALS partners. At first, "[they] were concerned that they wouldn't be able to communicate" with their partners in Spain, but they soon realized that this wouldn't be a problem. The students first exchanged numerous "getting-to-know-you" messages, then settled into discussions about topics and "concerns" that were mutually interesting to them.

**Summary.** Teachers who were able to communicate with other adult participants in their projects found the experience worthwhile and valuable. They found discussions with teaching peers a way to carry on behind-the-scenes consideration of their projects and a way to plan to expand what they were doing. The

teachers also saw that increased communication among students and between students and adults could positively impact students' understanding and improve the students' levels of communication.

***Theme 5: Crossing Borders- Reaching Beyond the Classroom to Communicate with Others***

Those teachers who engaged in projects that included communication interchanges among students discovered another advantage of collaboration. The teachers saw this as an opportunity for their students to learn more about the world around them, giving them an appreciation of different cultures, varying perspectives, thereby expanding their horizons. This opportunity occurred as a result of crossing the boundaries of the traditional classroom by taking part in an online project.

***Heightened awareness.*** The concept of “heightened awareness” could be described as a condition that allows people to become more cognizant of a variety of elements around them (UNESCO, 2002). In this case, it describes the way teachers perceived that project participation made students' awareness more acute and sensitive. Four of the teachers in the study remarked on this effect of participation in online projects for their students.

Anise felt that the *Travel Buddy* project allowed her students to become more aware of other cultures and other places, thus “expanding [their] horizons.”

I think it’s a real worthwhile type of an activity to participate in. I think it’s really enriching letting them learn more about people in other places...what their lifestyle is like compared to ours.

Besides exchanging communication—in which they learned more about Australia and Australian culture—trading boxes of items also allowed Anise’s students to gain insights into things Australian.

Anise shared an example of items returned in one of the “Mikey boxes.”

In return, we received a journal, some stickers, some candy, postcards, some small toys, flags, pins, bumper stickers, a banner with Steve Irwin, information about their school, and books.

Kelly’s students also became more aware of another culture. She had felt that this appreciation was important to her students, because her school community was “very homogenized,” and things outside of their community were “really unknown to them.” As student communication exchanges began to increase among Kelly’s students and their Spanish ePALS partners, Kelly noticed the quality of messages moving from “naive questions” to more in-depth,

“thought-provoking questions.” She said,

For those students that did receive responses, they were better able to ask questions as their correspondence continued. They [first] asked very naive questions [such as] whether they listen to music [or] have hamburgers. My students were eventually asking thought-provoking questions that allowed them to learn a lot more about their ePAL.

Kelly evaluated the process as one that “opens up the borders” as students communicate “with different kids from around the world.”

The students in Elaine’s class found their awareness heightened as their SME and their D.A.R.E. officer offered different opinions on a variety of topics. She explained that their SME “came back with perspectives that we would not have ever thought about.” This helped students to understand that there could be multiple views on an issue, expanding the range of their discussions.

Stephanie saw heightened awareness as an opportunity to help students “[be] aware of the world around us.” Their heightened awareness did not come directly from their communication exchanges with others, but through her students’ participation in activities, reading other classes’ submitted information. For example, Stephanie’s students mapped locations of project participants as they reviewed the work those participants had submitted.



***Finding similarities and appreciating differences.*** Anise and Kelly took part in projects that involved interchange between students. This allowed their students to compare their own cultures with their partners' cultures, finding and exploring similarities and differences.

Anise's students found several comparisons between their own location in Missouri and the various locations in Australia in which their partners resided. The first association they compared lay in the realm of schools. They found that while discipline policies in schools were similar, names varied for "time-outs" students were given when they misbehaved. They learned that while students' ages might be the same, Anise's sixth graders rotated classes and the Australian students were in self-contained classrooms. School structures varied as well. While Missouri schools organized as: elementary school (PreK-5); middle school (6-8) and high school (9-12), Australian schools were grouped and named as: primary (PreK-7) and secondary school or high school (8-12). The students also compared specific classes, school clothes, and lunch times. Anise explained,

They like the way [the Australian students] have school an hour less than we have school each day. They like the fact that [the Australian students] get a 45-minute lunch compared to our 20-minute lunch. But then the difference is they don't eat in the cafeteria, where our kids do eat in the cafeteria.

Anise's students also compared weather and time. They learned about time zone differences and that while Australia had seasons, they weren't four distinct seasons such as those experienced in Missouri. Their seasons varied only in the degree of warmth—warm, hot, hotter, hottest.

Finally, the Missouri students examined the items in the boxes they received, they discovered that while teen magazines were similar, ads and names of common items they saw in the magazines were different.

Kelly's students in Canada also had a chance to compare their own culture and lifestyles with the culture of their ePALS in Spain.

The students began with a list of questions to ask their Spanish ePAL and most did receive some very interesting answers. I think my students were surprised to find out how different these students were. Many cultural and social differences were mentioned. Particularly [discussions] about music and clothes were of interest to my students.

Kelly's students were surprised to learn that family sizes were bigger in Spain than in Canada and that Spanish "kids didn't play baseball or hockey."

Kelly found that her students began requesting introductory types of information "like age, etc." As they ran out of "ordinary questions," their exploration of cultures and lifestyles took students into various areas, depending on the individual interchanges. Some

students branched out to discuss career aspirations while others went into more depth, comparing family characteristics.

**Summary.** Participating in telecollaborative and telecooperative projects allowed opportunities for teachers to expand students' horizons, helping them to cross borders, discovering more about the world around them and how they compared to others in terms of lifestyle and culture. In some cases, students were surprised to find how similar their own culture was to the culture of others, as well as how different their cultures could be.

### **Influences on Online Projects**

As the six participants in the study described their perceptions of integrating online projects for the first time, they also shared information about various incidences and events that influenced their experiences. Three themes are explored in this section describe the various types and sources of assistance that helped the teachers as they attempted project activities, the assorted trials and tribulations teachers faced which impacted the success of their projects, and events that teachers viewed as motivation and enrichment of learning for various groups.

#### ***Theme 6: Teacher Support***

Teachers in the study shared details about their experiences with finding assistance, advocacy, and support. McKenzie (2001)

recommends that support should be available in multiple levels as they introduce technology into their curriculum. In this study, various levels of support were evident, from formal to informal and unplanned. Teachers received support in face-to-face settings as well as in online settings. Some of the teachers in the study then turned around and supported others.

**Formal training.** Teachers can benefit from professional development in integrating an online project in the classroom (e.g., Harris, 2000; McKenzie, 2001; UNESCO, 2002). In this study, two of the teachers approached their projects due to exposure during a formal training session, to the types of projects that were available to them. Kate's training sessions and the project she joined were both presented by the campus technological "super-users" who had their training from Alberta's 2Learn organization. Stephanie's district had instituted a mandate to have all grade levels participate in an online project by the school year 2002-2003. Stephanie was one of a group of first grade teachers who had gathered together to learn how to design an online project and to execute their designed project with their peers in the district the following year. Stephanie decided to try an online project herself before determining how to design one. In both instances, these teachers received training of some sort prior to tackling their projects, and the people responsible

for this initial training followed up on their progress throughout project work.

Kate's super-user was on campus and could assist her as needed, providing one-on-one support.

We have what we call a "super user," and they know a lot more about computers than I do. And if I need to, as a last resort, I would go to that person and get some help. They also have time in their day when they can do in-service with me on different programs as well.

This technology resource teacher worked with students as needed and as time allowed, helping the class when they were working in the computer lab.

Stephanie's district technology coordinator provided her training. While the coordinator did not come on campus to provide follow-up support, she did notify the campus-level support person—the computer lab's technology aide—to let her know what Stephanie would be doing. In this way, there was someone on hand to provide Stephanie with assistance as needed. As she said,

She has been right there encouraging me to do any of the technology parts that would frighten me.

**Informal support.** UNESCO (2002) reported that support for teachers is often available in many ways and from many sources, including both formal and informal support. Informal support in this study came to five of the teachers as needed and from various sources. Though some of the support came from people on campus

designated as technology “experts,” support was not limited to these people. In some cases, it came from unexpected sources, and at unexpected times.

Kate found informal support from three separate sources. First, her super-user who had provided formal training was also available for informal support.

The rest of [the support] is sort of incidental. If I get stuck somewhere, I go to my super user and get help. If they are in class, then I will go at recess or after school, whatever times work. And we try and figure out what it is I messed up on.

Kate also found informal support from other teachers on staff who were participating in her project. She found this help particularly valuable, saying that she didn’t believe she could have learned as much as she did about the software programs they used or how to integrate the programs without her peers’ assistance. Kate also had access to in-class support.

We were able to use some peer teaching. When students ran into difficulty with a program, those students who were a little more up on it could help them, as well as I could get help.

Like Kate’s, Stephanie’s informal support came in various forms and from various people. The technology aide on campus made herself available on an on-call basis, telling her “You just do what you’re going to do and ask me to do what you need.” The aide helped her with many of the technical aspects of the projects, leaving curriculum aspects under Stephanie’s control. Stephanie

explained, “We’d flush out a time together, because that’s just the way she is.” Next, Stephanie was able to call on assistance from her school librarian when she needed help finding books on spring, including the book on which her *That’s What Happens When It’s Spring!* project was based. The librarian put the book on order for her, though Stephanie also went online to order the book for herself. Her principal gave her moral support during the project.

My principal puts this note in my box saying, “And you were afraid to turn the computer on! And you screamed at me that they couldn’t go in the coat rack!” But the principal said, “We hear so much negative, it was so wonderful to get the note about you.”

Two other sources of informal support were not found on-campus, but off-campus. Stephanie’s husband was one of the sources of informal help, working with her to get their *Monster Exchange* pictures put online. She commented, “He scanned, resized, and uploaded all the drawings and text to the site.” Another outside source of support came from her students’ parents as they assisted children in the completion of various project steps at home.

Rachel’s informal support also came from parents. As part of the initial steps to take part in a KIDLINK project like *Grandmother and Me*, Rachel’s students had to answer the four KIDLINK Response questions. She let her students work on the questions at home.

I've gone even farther, and given the kids the freedom to work on them at home with their parents. Like with the KIDLINK project, they can access it at home because they have their own KIDLINK ID. They have to do the four questions, and they get their own ID and password. So if they can, [they] then go ahead and go online with their parents at home.

Elaine had access to informal support as well. Her students were questioning their SME about Rodney King. They wondered what the initial charge had been when he had been stopped by police. Their SME didn't know the answer, but they were still curious to find out what had happened. Elaine explained, "We pulled in [our D.A.R.E. officer], and she did say it was a traffic violation."

**Support online.** There were times when it was possible for teachers in the study to use online sources of support while they worked on their projects. Anise credited Jay, her Australian partner teacher, as the person who helped her "learn the ropes" of the *Travel Buddy* project. As mentioned before, Jay had participated in the project previously and was able to assist her, since he maintained communication with Anise throughout the project.

Both Rachel and Stephanie went to the *Monster Exchange* site to review past student work for ideas about how to introduce the project to their students. They both chose to introduce examples of good descriptions and poorly written descriptions as they helped their students to practice descriptive writing.



Stephanie also accessed the *That's What Happens When It's Spring* site to see what others had done on their project Web sites and to make use of the numerous resources provided by the project designer. The site helped her come up with ideas about books to read and activities to do with her students. Other teachers in the project also submitted ideas about books that her students could be read as part of the project. Stephanie also maintained e-mail contact with her technology coordinator throughout the project

Then within a day or two I got a thank you note from that technology coordinator saying, 'Thank you so much for your input.' Where I thought I had pushed the envelope a little bit, she was saying she really appreciated my commitment to curriculum. So she was reinforcing my involvement.

**Supporting others.** Three of the teachers in the project provided support to others in terms of technology use or integrating online projects during the course of completing the project on which they were working, providing collegial support as described in Mouza (2003). Rachel did so in her role as the computer lab teacher on her campus. Kelly approached her peers during a staff meeting, and Stephanie provided online help to project partners and acted as a "turnkey" for the district.

Rachel explained that she regularly meets with the other teachers on campus to try to correlate what they are doing in the classroom with what she does in the lab. The projects that she

chose were intended to dovetail with the classroom teachers' focus as they were working on students' writing skills. She also helps the other teachers by making computers in the lab available for them to "get on the Internet" to do research or to work on classroom projects.

Kelly provides technology workshops in her district, discussing integration of online projects into teachers' curricula. During the 2001-2002 school year, she approached her peers about joining ePALS with her. She first talked to her teammates about it, offering any assistance she could give to help them get started.

Kelly explained,

I told them about how I found the Web site, how easy it was to select an ePAL class, and how much my students were learning about other cultures.

Like others in her *That's What Happens When It's Spring* project, Stephanie contributed ideas about books to use in the project. In the *Monster Exchange* project, she helped her partner teacher with ideas about introducing descriptive writing to her class. They also gave each other moral support as they toiled to get their pictures online. As a "turnkey" for her district, Stephanie helped other first grade teachers by taking their needs into consideration as she worked with them to develop an online project. She was also instrumental in getting the design phase postponed

until they could learn more about participating in an online project from Stephanie's experiences in her two projects with her students. Stephanie also became a role model on her campus, with her peers coming to her to find out more about her participation in online projects.

So what's happened is now the teachers come to my room for team meetings and they say, "Look at this adorable site! Why did you do that?" I say, "Because we had to put our picture online and we couldn't, and blah, blah, blah." They go, "Oh, that's cute. What site is that?" Then I go to the site and they see the music, then they're all excited. That's really been I think the way to bring them along is for them to see me.

**Summary.** The participating teachers' experiences provide examples of ways that multiple levels of support can be useful to first-time users of online projects. The support upon which these teachers depended also affected them throughout the process of integrating an online project for the first time, from the decision stage through the completion stage.

### ***Theme 7: Trials and Tribulations—Challenges Teachers Face***

Obstacles and barriers can have severe negative impact upon the success of online project participation (Chiero, 1997; Gonzales & Thompson, 1998). Some such trials and tribulations require management decisions (Collins, 1996; Harris, 2000), while others require changes in plans or signal needs for assistance (e.g. McCullen, 2002). Other impediments are beyond the realm of

teacher control, and require negotiation of ideas (Yoder, 2003) or, as Rachel explained, “cutting corners.”

***Time as a project obstacle.*** One of the most often cited obstacles mentioned by the study’s participants dealt with the issue of time—a major obstacle reported in previous studies, as well (e.g. Becker, 1998; Harris, 2000). All six of the participants had some problem handling time constraints during their projects.

Anise was looking at the *Travel Buddy* project and thinking about doing it with all 130 students she taught as a science teacher. However, she wasn’t sure what the “time frame” was for the project or “how long the travel buddy could stay.” Another problem with time availability appeared when she and Jay were planning their extension projects. Anise had planned to do a hollow-egg exchange project with Jay’s class, but restrictions in his available time forced them to modify their plans, having Jay’s students simply report “back on the five eggs that we sent.”

Planning ahead, trying to set a goal for a finished project to be presented during Black History Month, Elaine was hoping that her students could interact with their SME and complete their essays and slideshows by February. Unfortunately, “it didn’t get finished until April.” This was due to the time it took to get the project going. The first hurdle that ate into time availability was finding a

time in her curriculum plans when she could work on the project. Next, numerous “distractions” cropped up that kept them from getting started as soon as they had hoped. Then, once the project started, getting the design set up and in place through discussion with her SME took time. Elaine explained,

It took us a little while. It was kind of a back and forth process before I think he understood.

Time problems permeated Kate’s project. Throughout the project, she seemed to be dealing with deadlines and time crunches. Learning to use new software was central to her project. She reflected, “I guess the only limitation would be the amount of time it took to get some of the computer programs...” teach the children how to use them, and learn how to use them herself. She felt that she “needed time to work through those” before working with the programs with the students. As she explained,

The time it took to complete the project still remains a concern. The students need to be taught how to use the programs and there is limited time to do this.

This time constraint impacted her students’ ability to complete several of the activities Kate had planned to do during the project. She dealt with this by cutting corners and trimming project activities to fit within the time frames she had available. In one case—rather than doing two separate research projects, one with the final product being an essay completed using Word and the

other a PowerPoint presentation—she decided to do only one research project and have her students cull information from their essays to put into their PowerPoint slideshows. Kate also had time-related problems helping her students who needed curricular modifications.

Students with poor keyboarding skills and/or academic skills were not as quick to get projects completed, [and] therefore, ran out of time.

She tried to work in as much time as she could “to give some one-to-one assistance,” and she employed peer tutoring “when it was feasible,” partnering the students who needed extra help with students who had finished earlier.

Kelly was faced with time difficulties in two different ways.

First, managing the ePALS project was a challenge for her.

The first time I was monitoring, that took quite a lot of time because I was reading all 26 messages before they went out.

Further communication was not as much of a time challenge, because her students’ e-mail exchanges occurred in different intervals, not in bulk exchanges like at first. Secondly, like Anise, Kelly wasn’t sure what the ideal time frame would be for taking part in an ePAL exchange. Kelly felt that her project would have worked more “ideally” had they had more time to interact with their partners in Spain. Kelly suggested,

Ideally you would start it in September or in February or something and do it for more than two or three months. But we just got this as a pilot, so we're starting it late.

Rachel sees her students "40 minutes of class time each week," so project activities need to fit within that allotted time. When faced with answering the four KIDLINK Response questions, Rachel realized that this wouldn't fit within her time frame with students. She decided to "cut corners" by sending the questions home so that students could "take their time to write well thought out-answers..." Problems with time also impacted her *Monster Exchange* project work. She had to take time initially to provide added lessons on descriptive writing.

We spent a great deal of time going over how to write detailed descriptive paragraphs that would be useful for drawing monsters.

In the next stage of the project, when participants exchanged descriptions so their partners can attempt to draw their monsters based on the detailed texts they have been given, Rachel's students were "dishearten[ed]...to wait so long" to get their written descriptions from their California partners. Finally, Rachel had to post two monsters pictures online for each student. The first for each was the student's original monster. The second was the picture each student had drawn using their partner's description.

Rachel had to resize all the drawings prior to posting them, which required more time than she had initially thought.

This was also a problem for Stephanie. She and her husband toiled over figuring out the project's directions for sizing and uploading graphics, spending "more hours than necessary second guessing whether the transfer had worked and attempting other ways of submitting the material." She felt that this was a major impediment to the project's success. She commented,

The mechanics of submitting information to the site were, as explained previously, somewhat overwhelming for a first-time project. Had I known the hours of work it would take, I probably would not have chosen this project as a newcomer to online projects.

**Technical difficulties.** Technical difficulties plagued three of the participants to some degree, a significant factor also found in Chiero (1997). Kate had difficulty with the software that was required to participate. This was due to the fact that she wasn't comfortably familiar with some of the software that students would need to use to complete the project. Rachel had difficulty having her students all go online at once to do e-mail or access their *Monster Exchange* work. She explained,

If more than two or three students attempted to use GaggleNet or go to the *Monster Exchange* server at the same time, the computers would simply not be able to make the connection. This is fine for a classroom setting, but not at all useful in a lab setting.



Rachel also had other problems using GaggleNet as their Web-based e-mail server. Her students would send e-mail messages to their *Monster Exchange* partners and find out later “that it had never been sent.” They had problems receiving e-mail, too. She felt that this problem caused the project to lose “a lot of its spark.”

Stephanie’s technical problem stemmed from lack of concise and specific information on the *Monster Exchange* project’s Web site about how teachers should handle uploading both the drawings and descriptions. As a novice in working with graphics and uploading data, the types of information she found were confusing and written at too high a level. Enlisting her husband’s assistance helped somewhat, but even he was puzzled about how to get it done. She stated,

We tried several variations on our interpretation of the directions. When the drawing would not appear, we tried another way, thinking...“Well, perhaps they meant to do it this way.”

**Curricular difficulties.** All six teachers had difficulties with curricular aspects of their projects.

Comparing her science class to her partners’ classes—subject-specific classes versus multiple subject, self-contained classes—Anise felt envious of the Australian teachers. She envied their ability to incorporate all the different subject areas into their classes rather than having to focus primarily on one subject area

due to curricular limitations. Another curricular difficulty for Anise lay in designing extension projects. She had to wait to find out the criteria for Jay's trading card project because they hadn't "worked it out" as quickly as he would have preferred. Then, her hollow-egg project had to be redesigned when Jay scaled back his class' participation

Elaine encountered two curricular difficulties. Like Anise, she had a design plan that didn't come to fruition. She wanted to teach her students how to interview primary sources and looked forward to asking her SME to be able to put her students into contact with people related to civil rights topics, especially people with some connection to the Civil Rights Era. This plan had to be scrapped when her SME was unable to fulfill her request. The other difficulty was getting her SME to recommend topics at an age-appropriate level.

He didn't offer the suggestion to do Ruby Bridges. Well, of course, that one would have been a huge thing for elementary kids since it was a first grader going to school. I think that would have been much more important than we [how] focused on several high schools, like Central High School. Not that that wasn't valuable, but coming from elementary, Ruby Bridges would have been the person.

Kelly had problems executing her project design plans, just as Anise and Elaine did. After trying to find a partner class in Egypt or Greece—countries her students were studying in their social

studies' ancient civilizations unit—Kelly finally gave up and accepted a partner request from a teacher in Spain. She was able to justify this by comparing Spain's history with Canada's, saying that their partner country's history was older and "richer."

Kate had problems with the project matching her students' ability levels. This was particularly true of integrating the *Active Living* project into math. The project had been planned to have students design Web pages that contained math problems to share with others. Writing "good math problems" was challenging for her class. The project was also challenging for her high-needs students. Several were unable to complete the project activities, because it took them longer to finish the various steps. These students had to be graded on what they had accomplished and the amount of "effort they put into it."

Rachel had problems determining how to present activities in terms of introductory lessons and follow-up lessons.

I can see that as a first time participant I really did not know what to expect in the amount of work it takes to successfully participate in an online project. In some cases I overestimated the amount of work, and in others I underestimated it.

For example, she had to devote several of her sessions with students to having them do preliminary work on writing good descriptive text.

Stephanie's curricular troubles arose when she tried to locate the materials that were to be part of the project's curriculum. The books in her school library were "pathetic, dated collections of books." She pointed this out to her librarian, but she "used the resources that are there" anyway. She also tried locating the main text, *That's What Happens When It's Spring*, in local bookstores, but to no avail. In a last-ditch effort to locate the book, Stephanie went online, found it, and ordered it.

**Communication problems.** Two types of communications problems occurred for the participants. One problem revolved around what Rogers, et. al. (1990) described as project barrier—lack of communication. The other stumbling block centered on problems in communication and in difficulty being understood.

Lack of communication among participants was an issue for Anise, Kelly, Rachel, and Stephanie. Each of these teachers had their students contacting their partners as part of the project. For various reasons, this contact dropped off, which participants and their students found "disappointing" and "frustrating."

Anise's classes were each connected to different classes in Australia. Only two of her classes continued communication successfully throughout the *Travel Buddies* project. The other classes had only sporadic contact. Two of the Australian partner

classes didn't return Mikey until late in the school year. In fact, "at times, there were weeks before we heard anything back from Mikey." One Australian teacher stopped all contact with Anise and her students, and Anise didn't get that Mikey box back until she returned to school in August. There had been no word to explain why this particular partner dropped out of the project.

Kelly's class was hoping to match each student up with a partner student in Spain. They each sent out an initial posting to their designated partner, but only half the class received replies and continued interchanges. Kelly attempted to explain reasons why communication breakdowns happened, focusing on possible differences in the Spanish students' "daily access to computers," for example. This experience with lack of communication colored Kelly's perceptions of the project's success. She explained,

I was unfortunately disappointed with our experience with ePALS, only because our ePALS didn't have the same amount of access to computers as my class did.

Rachel and Stephanie both experienced a "long turn-around time" during their collaborative activities on their *Monster Exchange* projects. They didn't "get responses" from their partners as quickly as they had expected, and the delays were "frustrating." Rachel worked on the project with more than one class, "and in the case of

one [of those classes], they never got back partner descriptions at all.”

Another type of communication problem occurred for Elaine. It wasn't a lack of communication, but difficulty in being understood and getting ideas across that challenged her. When working with her SME—who worked at a university level—she didn't feel he really understood the capability and interest levels of elementary students, particularly fifth-graders. She explained,

We were having difficulty trying to find information, and he would send us back sources that maybe you could find at the university library, but certainly not anything you would find in an elementary library, and also probably not material that the students could have read and gleaned a lot of information [from] on their own.

This problem was finally resolved when Elaine sent her SME an example of one of the books her students were reading for the project.

***School policies as an impediment to projects.*** With more and more schools gaining Internet access, districts are instituting policies about use of the Internet in their schools (Umbach, 1998). Cattagni & Westat (2001) found that by 2000,

...almost all public schools with Internet access (98 percent) had 'acceptable use policies' (AUPs) and used various technologies or procedures, such as blocking or filtering software, an intranet system, honor codes for students, or teacher/staff monitoring, to control student access to inappropriate material on the Internet (p. 7).

Unfortunately, these policies caused impediments for all of the teachers in the study.

Anise was aware that though they had Internet access at school, students were not provided with individual e-mail accounts. She wanted to have class accounts so that they could communicate with each of their partners. At the beginning of the project, she had to make a decision about how to get around the problem. She decided to use a Web-based e-mail server, Hotmail.com, for her students' e-mail exchanges. Other than that, she was "not real familiar with what [the school district's] policies" were. This made her leery of giving students too much leeway when writing messages.

I'm just afraid that they might type in something that was inappropriate or something of that sort. For the most part, they are okay, and they haven't done anything that is inappropriate or anything. I was just concerned about that at first.

Therefore, Anise proofed all of her students' messages prior to sending them out.

Like Anise, Elaine wanted each of her students to be able contact their SME individually. However her district had strict Internet policies prohibiting this.

Elementary students cannot have individual e-mail accounts in our district. Therefore, the students could not just freely go to the computer and type a note to the SME. All contact was through my account.

She would log into her account, start a new message, and have students come and write their own text body. She would then proofread it before sending it out.

Kelly also had to monitor student e-mail. She did so at first to be sure that students were using grammatically correct English. But she also wanted to monitor messages to align with her district's requirement for appropriate e-mail communication. However, one day she overheard some students talking about other students' messages. She found that one student had sent inappropriate messages to another student. As a result, this student had to face the principal and was removed from the project.

Similarly, Rachel's district did not provide student e-mail accounts. To circumvent this, she found a Web-based e-mail server for schools provided by GaggleNet.com. She also had to get around another district policy against posting student names online. This would have impeded their attempts to participate in their KIDLINK project, because KIDLINK participants are required to use their real names in conjunction with their work—specifically when answering the Response questions. She circumvented this by winning the parents over and calling for their assistance to get the answers to the four KIDLINK Response questions sent in from home. She was



eventually allowed to use student names online, but she used first names only to protect students' identities.

In Stephanie's case, she came up against a district policy that didn't allow her to post her class' picture online. She came up with a creative way to circumvent this restriction. Because they were working on the topic of spring, she had each student create a spring flower on paper plates. They made these into a type of mask that they put in front of their faces when they took their class picture. Another policy that she encountered was a recent addition that mandated teacher incorporation of online projects. Because she was part of a representative team developing a project for her grade level's use, she felt that it was important to give her feedback and share her concerns as other teachers began to implement the policy. Luckily, her technology coordinator valued her input, and seriously considered the feedback. As Stephanie described,

So it takes away the fear of "Oh gosh, I'm going to make a mistake" or come out looking stupid or whatever. You know, when [our technology coordinator is] willing to stand up for us, and she's willing to say, "You know, we did make a mistake. It probably doesn't make sense. Let's fix it."

***Other external factors.*** Four of the teachers had to deal with unexpected factors in order to work on their projects. These were external to classroom or project activity issues.

Anise encountered three external factors that impeded her progress with her project. Two dealt with postal service problems. First, she wasn't aware how what they put in their boxes would affect sending them out to their partners. The more the boxes weighed, the more expensive it would be to send them.

Ones that are the lowest weight for each class, I'm going to pay the postage for those, and then the kids have to cover the postage for the other ones. We've talked about it and they seem to have some interest there because they like those challenges, and to be challenged to some type of problem that they have to solve.

She also had problems with her hollow-egg project getting through the mail. One of the boxes didn't make it through Australian customs due to an act restricting import of poultry products. Jay had to go to the customs office and pay \$40 to have the box released. The third factor had to do with using Hotmail.com as their e-mail server. She had to carefully monitor incoming mail because of unexpected advertisements that were sent, quickly deleting these before her students accessed their accounts.

Elaine had problems stemming from project work delay. She had originally planned the project to fall within their allotted time to use the computer lab. However, outside distractions kept them from starting project work. For example, Elaine's designated computer lab use time for the semester had passed, so she was limited to random access times when the lab was free (e.g. another

class opted not to go to the lab during their assigned time). She had hoped to use her enrichment time to use the lab. She explained, however,

Sometimes we couldn't get into the computer lab during that time, where during instructional time, we do have a set instructional time in which we are able to get in every other day.

Rachel faced parent resistance to project participation. Some parents didn't want their children to access the Internet at school at all. However, as these parents saw what was happening with the projects, they began to change their minds. As Rachel commented,

Fortunately for me, the parents had a change of heart once the children began working on the project.

**Summary.** Teachers in this study were often faced with obstacles that they had to overcome or work around. Some found it necessary to cut corners. Others had to employ a little creativity to circumvent problems or restrictive policies. Each of the obstacles caused some kind of impediment, either temporary or permanent, with which teachers had to struggle to continue their project work.

### ***Theme 8: Project Impact on Motivation and Curricular Enrichment***

While working through the process of integrating an online project into their curricula, participants described the impact that their projects had on them, their students, and others. This was

particularly noticeable as the various participants stated that they found project participation “motivating” and “enriching.”

***Impact on classrooms.*** Both teachers and students were impacted by participation in online projects, which they found to be motivating and enriching in several ways. Anise and her students thought that their *Travel Buddies* project was a “fun activity—” one that both the teacher and students “enjoy[ed].” Anise described their experience as “fascinating” as they learned about their partners, making an “impact” on the students.

That’s real enriching for them to learn about and to share information with a whole other culture over there...I think that it’s just brought an excitement into the classroom where they can’t wait to find out what our Travel Buddy is doing, and they can’t wait to share what the Travel Buddy here is doing. It’s just a big eye opener for them.

Her students were motivated to go into more detail in their journaling and to be responsible for returning homework to school that was related to their project. Anise thought this was exciting and made the project “worthwhile.” She explained,

I am just really having a great time. It has really put an interest back into my teaching for this year, and it has really made me look forward to communicating with other people from other places. And I guess it’s just a really fun activity for the kids to be involved in and for me to be involved in.

Kate also felt her project was “worthwhile” for everyone involved in it—teachers and students. She personally found the project an “incentive” to learn more about technology and to keep

students motivated. She stated that “using computers is an enhancement to any academic program and is a great motivator for some students.” Her students took pride in the work they had done as they posted it on their Web site and learned skills that will be useful to them in the future.

The students are enjoying the equipment and have remained active. Pride in the results of their work on the Web was one of the benefits of an online project. The students learned to use several programs that will be used in their future schooling and work life. They were enthusiastic to work with the computers, which motivated them to do the assignments.

“Excitement” was a feature that both Kelly and Rachel shared about their experience working on their projects. Rachel noted that this excitement translated into student motivation to work.

The kids had a great time with that. They let their creativity fly. They really got into descriptive writing. They came in eager to work.

Rachel’s students were also excited to see their completed work on the Web.

It made them really excited, and they have been showing their parents, and they have been showing anybody they can get to look at it.

Both Rachel and Kelly felt that the overall learning experience was “very good” and “very positive.”

Stephanie’s perception of the excitement was that it was catching, and she was amazed at some of the work her students were completing.

Their excitement was contagious and the higher level thinking skills that they demonstrated as we became involved in the project were amazing.

It's been very exciting, and it has been very real.

Her students were motivated to do more as they went onto their Web sites to read what others had done and to find out more about their projects. They enjoyed going online to see their own work.

Stephanie said,

The children enjoyed revisiting our site to read our poem and see our illustration. We continued to check the site for new listings, enjoyed seeing spring emerge around the world and entered each location with a dot on our world map.

Students also went on to develop their own versions of the *Monster Exchange* project to try on friends and family.

**Impact on others.** Friends, family members, and others shared their reactions to the online projects. Four of the teachers revealed information about ways that others were impacted by their classes' online participation.

Kelly said that other students in the school were excited about what her students were doing. They wanted to know, "How come we can't have this?" Anise, Rachel, and Stephanie had positive feedback from family members. One parent in Australia enjoyed the box that had been sent from Missouri so much that she went on to create a Mikey doll for Anise's students. Anise was "surprised" that this parent had taken such an interest in their project. Rachel's parents

came onboard slowly, taking more interest in what students were doing as they could see the results being posted online. By the end of their *Grandmother & Me* project, parents and grandparents came to the parties that Rachel and her students held. They told her they “enjoyed answering the children’s questions” during the project and were “excited” to come join in the end-of-project celebration. Parents of Stephanie’s students were also impressed with the project work her class did. She commented, “It was so energizing because families got very excited.” They were “thrilled” to see the students’ work and sent her “wonderful feedback.”

Stephanie also had positive feedback from her technology coordinator and the technology aide. Stephanie described the coordinator as being “thrilled” to see her class’s work online. She found both of them “excited” and “enthusiastic” about what she was doing.

**Summary.** As teachers and students participated in curriculum-based telecollaborative and telecooperative projects, they found the endeavors to be highly motivating and enriching. The excitement that was felt was “contagious,” spilling over to others in the school community, too.

### ***Chapter Summary***

This chapter has explored the themes that emerged across the six case studies. These themes involved issues about interweaving projects into the curriculum and the learning that occurred, communication issues that arose, and influences that impacted participation in projects. The next chapter synthesizes this information to explore conclusions and to outline implications that this study suggests about the topic of integrating an online project for the first time.



## **Chapter 6-Discussion and Summary**

### ***Introduction***

This study focused on the perceptions of teachers integrating telecollaborative or telecooperative projects into classroom curricula for the first time. The six participants in the study worked with either elementary students or students in middle school. Some worked in self-contained classrooms, while others saw their students for subject-specific classes. One teacher was the computer lab instructor at her school, rather than a subject-matter teacher or grade level teacher. The participants' stories of the process of integrating telecommunication projects were represented in the case studies presented in Chapter 4. The themes in Chapter 5 emerged intuitively from cross-case analysis of the case studies. They addressed curricular considerations of weaving an online project into the curriculum, discussion of the types of learning that occurred, perceptions of communication during projects, and influences (e.g. support, obstacles, and motivational events) that impacted the progress of the projects.

The discussion that follows suggests lessons that can be drawn from the study's findings and implications these lessons have for those interested in integrating online projects into the classroom (e.g. project designers, professional development staff, classroom

teachers). These concepts are based on my own reflections upon the phenomena in the study and stem from my experience as a teacher incorporating online projects, my role as a designer of online projects, my experience as a freelance technology consultant, and my role as a researcher working with the participants in the study.

### ***Reflections***

The interaction that I had as a researcher while working with the six participants in this study lasted over the course of twelve months—and across two school years. I initiated interviews with them in the spring of 2002 as the pilot study for my dissertation. I interviewed each participant one time and completed member checks for each interview. The member checks determined if my understanding matched each participant's recollection of their interview with me. Interviews and interactions with the teachers continued as I merged the pilot study into this study, ending in March and April of 2003. Thus, our interactions took place over the course of two school years.

Data generated for the study focused on the 2001-2002 school year alone, but the participants also shared information about what they were doing in terms of online projects during the 2002-2003 school year. I found it interesting to learn that four of the six participants had taken on another online project during

2002-2003. Kate tackled another 2Learn.ca project, while Anise, Stephanie, and Rachel integrated multiple projects during the same time period. In contrast, Elaine and Kelly have not taken part in another project (see Appendix L: Afterword). Kelly acknowledged that she would be “willing to try one in the future,” while Elaine stated that her project, the *Electronic Emissary*, is not active at this time, and she was “not aware of any [other] online projects.” Reflecting on this, I began to compare the teachers’ experiences.

Comparing Elaine’s and Kelly’s experiences with the others’ experiences, I realized that these two teachers had attempted projects that shared a common aspect. Both Elaine and Kelly entered projects that were less structured—which required more design work while planning the project—than did projects completed by the other teachers. The other teachers worked on projects that had a predetermined structure that could be modified or adapted according to the needs of participating classes. Therefore, initial planning steps were focused more on management than project design. However, Kate’s project required some teacher decision-making about project design. It differed, though, from Elaine’s and Kelly’s projects in that Kate worked collaboratively with other teachers on her campus to develop the project guidelines and activities. Elaine and Kelly were working by themselves.

A second interesting comparison emerged as I reflected on the study. Both Rachel and Stephanie took part in the *Monster Exchange* project. Rachel, the computer lab instructor at her school, worked on the project with her third grade students. Stephanie, a first grade teacher, worked on her project with her self-contained class. Interestingly, both Rachel and Stephanie felt that they needed to augment the project by adding lessons on descriptive writing, and both went to the *Monster Exchange* site for examples of well-written and poorly written descriptions from past projects. Comparing the computer lab teacher's method of teaching students about descriptive writing with the subject-matter teacher's method, differences can be seen in the detail and scope of the lessons they taught. Rachel explained her method for teaching the students how to write descriptively by saying:

I copied some descriptions from previous monsters, one that I felt was a very good description and one that I felt was a rather poor description, and we did a practice. I read the one monster description, and I said, "Okay. I want you to draw this monster as I'm doing this." And they would say, "What am I supposed to do with this? What am I supposed to do with that?" I would say, "It doesn't specify that, does it? That's something to keep in mind when you are writing your own description." Then we read the other description, and, "Oh, yes. This one has good detail. I can really pick out the monster from this."

Stephanie used a similar method, but worked to scaffold student learning by using multiple lessons to achieve the goal of “writing descriptively.”

I went on the site and on the Destination, the big screen. I covered up the monster drawing and I read the description from this little girl from Canada step by step, and they each drew the purple flea monster. Then I uncovered it and they looked at their own [drawing]. We have this Standard 3 in New York that they’re always telling us what we have to do in the classroom, and it’s critical analysis and critical thinking. So they had to compare and contrast their monster with the one on the screen, and why was theirs different?

Stephanie went on to have students practice giving directions orally.

I said, “Okay, you’re going to tell me how to draw this monster and I’m going to draw it here.” So they did it orally, practicing giving me the directions, and you could see the frustration on their faces when they wouldn’t tell me where to put it, so I put the head down underneath the feet or something, and they would laugh.

The class went online to read several other descriptions, comparing them to the pictures that had been drawn. Stephanie explained, “They decided which were easier [to understand], the ones in a story format or the ones that were [in sequential order...] one, two, three, four, five, and they decided to do their directions in a logical, sequential way.” She felt that these lessons branched out to several types of learning:

The kids are using centimeters. They’re measuring. They’re learning how to be more focused in their language. We’ve learned shapes. We have expanded their vocabularies. They learned how to do a how-to drawing and a how-to explanation.

This subtle difference in teaching approaches points out the importance of encouraging teachers who are curriculum specialists rather than technology specialists to incorporate online projects into the curricula (UNESCO, 2002; WBEC, 2000). Their expertise with subject matter allows them to be more facile in their thinking and assists them in their “selection of strategies” (Painter, 2001, p. 24) to meet the students’ individual and curricular needs (Berg, et al., 1998).

These comparisons of the teachers’ integration of telecommunication projects led me to consider an overarching question that this study evokes. The question I believe is most important to consider while looking back at this study’s results is:

*What do teachers need in order to be successful integrating online projects into their curricula?*

The following discussion explores this question, drawing support from relevant literature. I also examine possible implications and recommendations that I have ascertained in my role as researcher.

## **Discussion**

The focus of my research on integrating telecollaborative or telecooperative projects in classrooms was to look at the phenomena from the viewpoints of novices involved in the process. Harris (2002) stated that participation in such projects continues to lag behind the number of teachers taking part in projects that do not require collaboration or cooperation with distant partners.

I believe that the themes that have arisen in this study by examining the novice teachers' perspectives help point toward some answers to the question, "What do teachers need in order to be successful integrating online projects into their curricula?" The answers fall into three major categories: 1.) integrating online projects into the curriculum; 2.) communicating with project partners; and 3.) facing project obstacles. Discussion of each of these categories will be followed by recommendations based on the findings of this study.

### **1. Integrating Online Projects into the Curriculum**

**Focusing on the curriculum.** Primary among the considerations that teachers in this study had about working online projects into the curriculum was that the projects be *real* (Harris, 2000) and have strong curricular connections (Becker, 1998; UNESCO, 2002). Yoder (2003) also lists this concern as the number

one consideration teachers should take into account when choosing an online project. “The focus should be on how telecollaboration will enhance existing curriculum goals, not on the technology itself” (p.15).

When projects are framed in curricular subjects, “rather than as ‘Internet projects,’ ‘email activities,’ or ‘Web lessons’” (Harris, 2000, p. 60), they are more likely to be seen as “not just bells and whistles,” as Stephanie described it. Teachers can make general curricular goals their aim when looking for a specific project, as Stephanie and Rachel did as they were looking for learning activities to enhance students’ writing skills (Becker, 1998; McKenzie, 2001; Yoder, 2003). They can also look for projects to enhance particular units of instruction (Berg, et al., 1998; Brown, 1999; Harris, 1999; Riel, 1992).

***Understanding the project’s structure.*** Once teachers have a specific curricular goal in mind, they can begin to look for projects that match their needs. When teachers are novices at incorporating telecollaborative or telecooperative projects, they should take care to examine the nature of the projects they are considering. Wells & Anderson (1997) recommend that novices begin slowly, with “fewer, more refined activities” that are more structured in design (Bonk, et al., 2002; Wells & Anderson, 1996). Starting “small” (Yoder, 2003)



with a project that is well-defined and well described leaves the novice free to focus on managing the project (Sandholtz & Ringstaff, 1996) and incorporating project activities into their classroom schedule.

The teachers in this study who described their projects as being successful all participated in simple, yet inherently structured projects. Rachel and Stephanie, for example, both took part in a project that fit this description of being small and structured. The *Monster Exchange* project Web site offered clearly defined steps and procedures for teachers to follow. Stephanie's first project, *That's What Happens When It's Spring*, also fits the description of being structured, yet small. In contrast, Elaine and Kelly participated in less thoroughly structured projects—ones in which they were required to participate in certain early design decisions, which led them to spend a lot of initial participation time actually planning implementation of their projects. This delay in getting started was frustrating for both teachers. Kelly would have preferred more time spent on students exchanging information with their ePALS partners. Elaine's initial delay caused her to miss certain deadlines, which led to reconsideration of Elaine's initial project expectations.

***Making projects fit the context.*** As teachers begin to bring their projects into the classroom, their students benefited to the extent that the teachers made them their own, working to fit them within the context of their classrooms' curricular and student needs (Berg, et al., 1998, Brown, 1999). This became evident in this study as each teacher tailored her project to meet her students' unique and individual needs, modifying lessons, adapting lessons to fit other circumstances, and adding extra lessons to augment project activities. Harris (2000) explained that this sense of ownership makes it "...less likely the project will be abandoned before it is complete" (p. 60).

***Recommendation #1.*** Teachers need assistance to find the "perfect fit" in terms of online projects (Williams & Boehm, 1998; Williams, 2003). This is especially true of novices to this process (McKenzie, 2001; Ronnkvist, et al., 2000). As suggested by Stephanie, project designers could help by being more explicit in their Web sites' descriptions about the complexities of the projects they create, particularly in terms of technical expertise required, and by specifically recommending projects for first-timers to try. Likewise, support staff—those who work with teachers as professional development coordinators or campus-level support personnel—should recommend projects that are curriculum-based,

small, structured, and easily adaptable (Yoder, 2003). Teachers planning to incorporate telecollaborative or telecooperative projects should first take time to do some preparation and planning, rather than “jumping right in.” This step would help circumvent some of the obstacles that first time telecomputing teachers face. Yoder (2003) suggests that teachers take the time to “[d]ecide on the goal, and how you will go about achieving it. Having deadlines and schedules will keep the activity moving along” (p. 17). In addition, teachers should remember to keep their curriculum goals in mind as they begin to search for projects (e.g. Brown, 1999; Harris, 1999). As they inspect the projects they are considering, they should pause to consider:

- What additional training and materials do I need?
- What type of support might I need, and where can I find it?
- What additional lessons or training will students need in order to successfully complete the project?
- Who can I call on to assist the class as needed while working on the project?

Answering questions like these and taking time to plan and prepare prior to beginning projects will help teachers successfully “find the perfect fit.”

## **2. Communicating with Project Partners**

Telecollaborative and telecooperative projects “bring people together” (Yoder, 2002, p. 20), exposing teachers and students to an “infusion of new ideas and strategies across a shrinking world” (Riel, 1992, p. 17). Communication with others is at the heart of such projects.

As the teachers and the classes in this study worked with partners in other locales, they were exposed to different information and multiple ways of thinking, believing, and seeing things as they shared information in completing their project activities (Bonk, et al., 2002; Harris, 1999; Harris, 2000; Hunter, 2001; UNESCO, 2002). Anise’s and Kelly’s students compared their cultures and lifestyles with students in distant countries. Elaine’s students learned to view things from multiple perspectives through working with a telementor. Stephanie’s and Rachel’s students learned more about the world around them. Rachel’s students also learned more about those at home as they interviewed their relatives.

While students communicated with their peers and mentors, teachers—such as Anise and Jay—communicated behind the scenes, coordinating their efforts and reflecting on their teaching philosophies (Harris, 2000; Hunter, 2001). Stephanie also relied on

e-mail to communicate with her support staff about issues and concerns evolving from the projects.

**Recommendation #2.** Teachers need to understand the benefits that working collaboratively with others at a distance can have on them and their students' learning. Professional development that encourages teachers to integrate Internet activities should include exposure to and information about the variety of benefits of telecollaborative and telecooperative projects. Benefits from integrating online projects that the participants in the study related included:

- Enhancement of curriculum units (Yoder, 2003);
- Heightened awareness of the world around them (Harris, 1999);
- Learning to appreciate multiple perspectives (UNESCO, 2002);
- Enhanced motivation to learn and work (Umbach, 1998);
- Unintended professional development (McGee, 1998).

Technology coordinators and campus technology support staff should help point out such projects to novices and support them through the process of integration (Llorens, Salanova, & Grau, 2003).

As teachers integrate their online projects into the curriculum, they should focus on aspects of communicating with others that will help to make the projects proceed successfully. For example, Anise deemed that it was important to find a partner teacher who would be willing to commit the time and effort to maintain correspondence—among students and between the teachers—throughout the project. Project partners should inform each other about issues such as:

- how often they have access to the Internet;
- their expected turn-around time between receiving and replying to partners' messages;
- foreseen deadlines and events that may conflict with communication.

Teachers should also “encourage a positive social climate” (Yoder, 2003, p. 16). For example, Kelly felt that it was important to take their partners' ability to communicate in English into consideration by avoiding use of slang terms and abbreviations. Encouraging use of online etiquette (ISTE 2000b; Yoder, 2003)—Netiquette—will also strengthen communication between partners.

### **3. Facing Project Obstacles**

Teachers need assistance to overcome possible obstacles that may crop up during projects (Bonk, et al., 2002) and to help them learn to “[l]ook for the teachable moment[.] [F]or example...a confusing incoming e-mail could provide for a discussion of the importance of clarity and how writing can be improved” (Yoder, 2003, p. 17).

As the teachers in this study worked on their projects, they faced numerous obstacles. One of the most common problems that occurred revolved around the topic of time, which Harris (2000) describes as “one of the most serious threats to successful telecollaboration” (p. 61). The different problematic aspects of time that teachers face are presented here in the order in which they may encounter them as they incorporate online projects into the curriculum. Other problems that impeded project success are also presented, including lack of communication and school policies that run counter to online project activities’ requirements.

***Decision making time—planning the project.*** Time is required for planning (Riel, 1992; Yoder, 2003), for project management (Yoder, 2003; Sandholtz & Ringstaff, 1996), and sometimes for project design, as experienced by Elaine and Kelly, who ran into problems with the time they had to commit to their

initial planning stages. The less structured a project at the outset, and the more complex in its design and its number of activities, the more time will be required for the teacher to be able to work through the initial planning phase.

***Learning to use technology takes time.*** Time is also required for teachers to learn to use new technology (Llorens, et al., 2003; WBEC, 2000) and the new teaching strategies they will need to use while carrying out the project (Bonk, et al., 2002; Porter, 2000; WBEC, 2000). Kate's *Active Living* project provides an example of this type of time problem. This type of professional development can be less time-consuming if teachers are given just-in-time learning (Mouza, 2003) about technology that will be used in their projects and multiple levels of support (Harris, 2002) as they participate with their students. Teachers also need time to practice and learn new concepts and skills (Mouza, 2003). Kate, for example, benefited from the time allotted for practice and the assistance offered by the school's super-users.

***Monitoring student activities takes time.*** As students begin project activities—which require time to be completed—teachers must monitor student work and student postings online—which also requires time (Yoder, 2003). Teachers new to technology integration projects should be guided to projects



that incorporate less complex activities (Wells & Anderson, 1997) and projects that are less e-mail intensive (Riel, 1992). For example, Kelly had problems initially with the amount of time spent monitoring messages required until she was able to learn how best to manage the exchange of e-mail between classes.

***Various impediments can cause disruptions, taking time.***

Time becomes even more of a factor when other things impede the progress of the project (Harris, 2002). This was especially true in Elaine's case. Several issues arose that distracted attention from the project, causing Elaine to have to rethink management issues such as the class period during which students would work on the project and the time available for using the computer lab.

***Modifying and adapting lessons takes time.*** Time can also be required to adapt or modify lessons to appropriately address student needs (Yoder, 2003). For example, both Stephanie and Rachel felt it necessary to add descriptive writing lessons to their *Monster Exchange* project's activities. This is especially problematic if projects have specific due dates for publishing work. It is also time-consuming for project participants to wait while their partners complete intermediary lessons leading up to the exchange of information. For example, Stephanie's partner teacher in Canada had more difficulty with and took more time teaching her students

to write descriptively. Stephanie's students couldn't get started on the next phase of the *Monster Exchange* project until they had received their Canadian partners' descriptions.

***When technology fails, time disruptions occur.*** Technical problems can arise during projects, causing loss of time to complete work. Both Rachel and Stephanie had problems resizing the monster graphics, for example, which required a lot of time to correct. Rachel had problems trying to access Web pages when students attempted to get to the sites all at once. Sometimes pages wouldn't load and computers froze. She also had problems sending messages via GaggleNet.com. Sometimes students had to send messages several times in order to get them to reach their project partners.

***Deadlines interrupt project completion.*** Deadlines—either project deadlines or school deadlines—can be obstacles. For example, Anise's school year ran out before they heard back from one of their partners, and in another case, she and Jay had to retool the hollow egg project due to deadlines that Jay had to meet. Keeping project partners aware of possible deadlines and impeding events (Harris, 2002) helps keep everyone informed about what is happening and keeps the projects "moving along" (Yoder, 2003, p. 20).

**Black holes in cyberspace.** Time may also be a factor in one of the worst of all telecollaborative project problems—a “black hole in cyberspace.” Disruptions in communication occur when one partner either drops out or is unable to send messages (Riel, 1992). Rachel’s problems with their e-mail server halted communication between the schools, eating away time devoted to the project. She wasn’t able to communicate with her project partner for quite a while. This breakdown in communication caused her project partner to stop all communication with Rachel. Stephanie, Kelly, and Anise also lost contact with project partners, causing frustration and delay in project completion.

**School policies impede project activities.** Another common problem was managing the project in the face of school or district policies (Harris, 2002; WBEC, 2000). District Acceptable Use Policies (AUPs) set guidelines for Internet use in schools, and often these policies run counter to telecollaborative project activity requirements. Several teachers in the study wanted to have students manage their own e-mail, but their districts either didn’t provide or didn’t allow private e-mail accounts for students. These teachers had to look to other sources for e-mail access or had to rethink the ways they could use their own accounts for student work.

Student anonymity is another frequent requirement in AUPs in terms of student postings. Some districts require that student names not be used in published works. Some districts also require that no student pictures be posted online (Center for Improved Engineering & Science Education, 2001; National Education Agency, 2002; OET, 1997). Teachers in this study had to be creative to get around these policy restrictions. For example, when Stephanie needed to post a class picture online—which was forbidden by her district’s AUP—she creatively circumvented the AUP policy problem by having the students make flower masks to wear, which hid their faces. Rachel ran up against a restriction in name usage during both of her projects. In the *Monster Exchange* project, she simply chose not to use student names. To participate in KIDLINK, however, student names are required. Rachel handled this AUP restriction by enlisting the support of her parents as students completed the KIDLINK Response questions at home. She also received her parents’ permission for use of their children’s first names online.

**Recommendation #3.** Teachers need assistance to learn to deal with possible disruptions in projects and to handle technical problems so that they can focus on the curricular aspects of their projects. In workshops I give as a freelance technology consultant, I

describe this kind of support metaphorically as “AAA” (Triple A). Like the American Automobile Association that offers drivers support, teacher technical and project integration support should be in the form of “*assistance anytime, anywhere*” (Williams, 2003). Project designers can help by being sure to clearly state timeframes and deadlines (Harris, 2000). They can provide examples to help teachers develop curriculum-based lesson plans for integrating projects. They can provide online support staff and/or forums for peer support and guidance. Telecommunications organizations can offer email servers or other online facilities for participant communication, such as KIDLINK’s KidSpace and ePALS’ internal Web-based e-mail system.

Professional development staff and on-campus support staff need to be available for continuous and multiple levels of teacher support (Harris, 2000; Mouza, 2003) and to provide regular feedback (Llorens, et al., 2003) to teachers as they integrate their projects. These support groups can also help teachers tackle technical issues, allowing them to focus on the curricular aspects of the projects (Porter, 2003; UNESCO, 2002; Yoder, 2003). Teachers on-campus can also be used as turnkeys to help provide examples and support for peers (Mouza, 2003) trying to integrate online projects for the first time. Teachers can also look to other sources

for support, including asking for help from the school community or from students with technical expertise (UNESCO, 2002).

Many obstacles that arise during online projects can be circumvented. One way is for teachers to budget time to plan project participation. Careful pre-planning can help to point out areas where reinforcement might be needed or times when lesson extensions should be implemented. Elaine also considered that telecollaborative projects work best when integrated into constructivist classrooms (Berg, et al., 1998). She believes that teachers should begin projects with the understanding that their plans may change and grow as the projects proceed and that teachers should take the opportunity to make the most of flexibility and teachable moments (Yoder, 2003). Most importantly, however, teachers need to be aware that their first attempts to integrate online projects can be awkward and stumbling. Teachers should approach obstacles they face as “learning moments” rather than “trials and tribulations.” As Harris (1999) stated:

Whenever we take first steps in new educational directions, we discover what we didn't expect. First steps often look like stumbling. If we use these rich opportunities to help us learn by doing—as we encourage our students to do every day—the stumbling can serve a larger educational purpose. Soon we will know how to step assuredly, and together with our students, we can explore fascinating new virtual spaces for telecollaborative learning, one step at a time (p. 57).

### ***Suggestions for Future Research***

While this study attempts to offer suggestions to answer the central question about what first-time teachers need in order to be successful in online projects, other questions point to the need for further research. For example, this study investigated perceptions of elementary and middle school teachers—but what are high school teachers' perceptions of integrating their first telecollaborative or telecooperative projects? Next, support is crucial to helping teachers to integrate online projects for the first time. What are online projects doing to help their first-time users? Third, teachers in the study described several types of support systems. Which support systems and support techniques are most effective in aiding teachers in their initial attempts to incorporate online projects in classrooms? A final area for possible research falls in the realm of authentic professional development (Harris & Grandgenett, 2002). Teachers in this study described things they had learned themselves as they proceeded with their projects. How does communication among partner teachers impact their professional learning?

## **Summary**

The focus of this constructivist inquiry was to explore the perceptions of K-12 teachers integrating a telecollaborative or telecooperative project in their classrooms for the first time. The six teachers who shared their perceptions of the process did so by relating the stories they had to tell of their experiences.

Finding the “perfect fit” in terms of telecollaborative projects for a classroom requires guidance and planning. Implications from the study suggested several avenues for assisting teachers as they integrate projects. Teacher support in this endeavor—“assistance anytime, anywhere”—is crucial if we want educators to benefit from projects like these that help to enhance students’ curriculum-based learning. “Educators are the ultimate knowledge workers” (WBEC, 2000, p. 130)—they are the ones who ultimately plan the guidance and instruction within the bounds of their classrooms’ curricular demands and their students’ needs. Those of us who design online projects and who provide some type of support for teachers need to assist them in moving from the “workshop to the workplace” (DuFour, 2001, p. 2), and from “promise to practice” (Riel, 1992, p. 17) as they integrate telecollaborative and telecooperative projects into the curriculum.



## **Appendix A**

### **Researcher as Instrument**

As I began this study, I had to reflect carefully on myself as the researcher and what I would bring to the study. This reflective activity brought about the realization that the real me could not be easily described. At one point, I imagined myself as a contestant on the 1960s popular game show, *To Tell the Truth*, with each of the *many me's* sitting across from the panel (who would, of course, include Kitty Carlisle and Orson Bean). When it came time for Gary Moore to ask, "Would the real Laurie please stand up," *all* of the *many me's* would stand up.

There is no one true Laurie, one true self that describes who I am. The self that I am is based upon the context in which I am, the prior experience I bring to the context, and the social dynamics occurring at the time among the people in that context. The roles I play ebb and flow depending upon the particular rhythms of the context, becoming my *contextual self*.

This belief in the contextual self, rather than the real self, heavily influenced the paradigm in which I chose to study the topic of integrating an online project for the first time. The constructivist paradigm fits in smoothly due to the ontological belief that there is no one reality. Constructivists believe that there are multiple

realities. Reality is not something *out there* to be discovered, but constructed within each individual based on the individual's perception of what is real. My understanding of the varying nature of my contextual self, helped me to better understand this view and understand the importance of looking at the topic from the participants' perspectives rather than my own interpretation. But then, because constructivists also believe that the researcher is the instrument of study, I needed to go back again and think about my experiences and beliefs I had to contribute to the study.

### ***Laurie as a Teacher and Novice at Integrating Online Projects***

The participants in the study are teachers integrating online projects for the first time, and I, too, have been a teacher who was a novice at integrating online projects. In November of 1993, I received my first Internet account. That same month, exploring an education news list to find out what the Internet could offer me, I stumbled upon information about KIDLINK, a global telecommunications organization for (at the time) 10-15 year-olds. I found out more information doing a Gopher search (this was back in the days before the Web), and joined the organization as a teacher. By December, I had followed several of the activities they offered, and decided to get my 5<sup>th</sup> grade class involved. Over the course of the next few months, I stumbled around learning how to organize

my class around our one hour of Internet connection in class per day. I frequently relied on the help of others on KIDLINK, both adults and students. They provided me with the technical expertise and practical understanding about ways to structure class time that I couldn't get on my campus, because I was the first to take the plunge using the Internet in the classroom.

***Laurie as Online Project Designer and Manager of Online Activities***

As I became more comfortable working with online projects in the classroom and getting to know more people in the KIDLINK community, I began to think about ways that I could take a more active role in the organization. KIDLINK is run by volunteer efforts, interested adults and students volunteer their time to help out as needed. I first volunteered to help moderate real-time chats on the KIDLINK IRC. In this particular community I found a give-and-take relationship between participants. Students and adults both played roles as learners and teachers. I found my online mentors through this group of people, and they helped teach me innumerable things about telecommunications ideas, like HTML coding, planning online chat groups, how to plan across time zones, coding in UNIX and Pine. I soon became the technical operations manager of the KIDLINK IRC and an assistant LISTSERV manager. About this same

time, I attended my first national computer conference, NECC (The National Education Computer Conference). While meeting with other KIDLINK teachers, I began to plan my first online collaborative project. I worked on it over the summer, and in the fall of 1995, I designed and moderated my first online project, *Inventions*.

Over time, I have continued to design online projects for KIDLINK, and I have taken on more responsibilities in management. In 1998, I became the English Area manager for KIDLINK, overseeing activities that use English as the primary language for its activities. In my roles as project moderator and program manager, I frequently assisted novices, both students and teachers, as they learned their way around KIDLINK.

### ***Laurie as a Freelance Technology Consultant***

My experience as a teacher involved in online projects led to me sharing my experience with others. Beginning in 1995 at a conference in Brazil, I started giving workshops about integrating technology—particularly online activities—in the classroom. As I worked with more and more groups of teachers who were learning about integrating telecommunications projects, I began to be aware of how different *novices* could be and started looking into research about adoption of innovations and diffusion of innovations. Along with a friend I had worked with online, I developed a workshop

called *Finding the Perfect Fit*, finding telecommunications projects that best fit a teacher's teaching style and context. Teachers in my workshops frequently shared their ideas and experiences of using technology and integrating online projects. Their stories were rich with detail and led me to explore my focus area—perceptions of teachers integrating online projects for the first time—as a topic of research.

### ***Laurie as Researcher***

As the researcher in my study, my experiences and multiple roles will help me in co-constructing the realities of my participants. My understanding of contextual self will also help me to explore the contexts in which the participants find themselves. It also helps me to realize that though no two stories may be exactly the same, we might share constructs that can help us to co-create stories, and the participants' stories might have themes emerge across cases. This reflective process of examining myself as “researcher as instrument” also has helped to uncover and trace my path to the topic and makes me aware of issues that I might continue to explore as I proceed in my research.

## **Appendix B: Consent Forms**

### ***Initial Consent Form***

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**IRB#**      **2002-02-0093**

#### ***Informed Consent to Participate in Research***

##### **The University of Texas at Austin**

**You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will also describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.**

##### **Title of Research Study:**

INCORPORATING ONLINE PROJECTS IN THE CURRICULUM:  
TEACHERS' PERSPECTIVES ON USING ONLINE PROJECTS FOR  
THE FIRST TIME

##### **Principal Investigator(s) and Telephone Number(s):**

Laurie C. Williams  
Phone: (XXX) XXX-XXXX      Email address: XXX@XXX.XXX

Judith B. Harris, Ph.D. (Faculty Supervisor)  
Phone: (XXX) XXX-XXXX      Email address: XXX@XXX.XXX

##### **Funding source:**

This study has no outside source of funding. All costs incurred will be the direct responsibility of the Principal Investigator, Laurie Williams.

### **What is the purpose of this study?**

You are invited to participate in a study of perceptions of K-12 teachers who have joined online projects for the first time. My name is Laurie Williams, and I am a graduate student in the College of Education at the University of Texas at Austin. This project is being done as part of a Directed Research pilot study. I am interested in the stories of teachers who are participating in their first online projects.

You are being asked to participate in the study because you have recently signed on to take part in an online project hosted by one of the following online organizations: KIDLINK/KIDPROJ, iEARN, 2Learn, ePals, the Electronic Emissary Project, the Global School Network (Hilites Archive), Oz-TeacherNet, NASA Quest, ThinkQuest, or the Jason Project. If you choose to participate, you will be one of 8-10 people in this study. From now through August, we will work together using phone interviews and email to develop the story that you have to tell about taking part in your online project.

### **What will be done if you take part in this research study?**

If you decide to participate, the initial interview will take place via telephone. We will set up that call (and any further calls we decide are needed) so that they are convenient for you, both in time and length. Approximately one hour is needed for the initial phone interview. Successive calls will be less than one hour in length. I will be recording our phone interviews and transcribing each interview session or using a professional transcription agency to do so. After each interview, I will send you a copy of a summary of what I heard you say via email and ask for your feedback, such as changes or corrections that need to be made, additions or deletions that should be done, and/or data that need to be appended. Though we will be contacting each other mainly by phone, email and regular mail while you are participating in the study, you may also opt to contact me using fax or an online chat. The total number of interview/feedback sessions will depend on the development of the story we will be writing, with no fewer than 5 interview and 5 feedback sessions throughout the course of the study.

### **What are the possible discomforts and risks?**

There may be some risks inherent in taking part in this study. One potential risk is inadvertent loss of confidentiality. To help avoid this, a pseudonym will be used in place of your name in all phases of the study. All audiotapes used will be identified by code only and will be kept in a locked file in my home office. The tapes will be erased at the end of the study in August.

Another potential risk you face is possible psychological discomfort due to the reflective process that you will be going through as you share your story. Because of this, you will have the authority at all times to dictate what information you wish to have withheld from the study, by refraining from discussing topics or not answering questions during the interview, or by asking to have comments made removed. To ensure that all information you provide is an accurate reflection of your ideas, you will be asked to verify information as it is collected, and it will be disclosed only with your permission.

There may also be risks that are unknown at this time. If you wish to discuss the information above or any other risks you may experience, you may ask questions now or call the Principal Investigator listed on the front page of this form.

### **What are the possible benefits to you or to others?**

Participating in this study may be beneficial to you. Engaging in self-reflective activities such as what I will ask you to do while participating in the project may help to provide you with new insights about situations you may have encountered as a teacher. Participation might also help you to form new or different understandings of situations as you examine them in hindsight. The results of study-related self-reflection may also help to improve or enhance future participation in online projects.

### **If you choose to take part in this study, will it cost you anything?**

### **Will you receive compensation for your participation in this study?**

Participants will not receive a stipend or any other compensation for taking part in the study, nor will they incur any expense for participating.



### **What if you are injured because of the study?**

This study does not involve physical risk that might result in injury for participants.

### **If you do not want to take part in this study, what other options are available to you?**

Participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with The University of Texas at Austin, my Directed Research grade, nor will it affect any current or future relationship you may have with the organization hosting your project.

### **How can you withdraw from this research study?**

If you wish to stop your participation in this research study for any reason, you should contact me, Laurie Williams, at (XXX)XXX-XXXX. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, I will notify you of new information that may become available and that might affect your decision to remain in the study.

If you have any questions about the study, please ask me. If you have questions later, call me, Laurie Williams, at (XXX)XXX-XXXX or you may email my supervisor, Judi Harris, Ph.D., at XXX@XXX.XXX

In addition, if you have questions about your rights as a research participant, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (XXX)XXX-XXXX.

### ***How will your privacy and the confidentiality of your research records be protected?***

To maintain privacy and confidentiality, all participants will be referred to by pseudonym. Participants' real names will not be used in the study. As explained previously, all documents and audiotapes will be coded using the participants' pseudonyms, and audiotapes (which will be kept in a locked file in my home office during the study) will be destroyed at the end of the study.

Authorized persons from The University of Texas at Austin and the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. If the research project is sponsored then the sponsor also has the legal right to review your research records. Otherwise, your research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

**Will the researchers benefit from your participation in this study?**

As the Principal Investigator for this study, I will not be receiving benefits from your participation in the study beyond publishing and/or presenting the results.

**Signatures:**

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this Form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

You are making a decision whether or not to participate. A reply to this message indicating that you have read the information provided above, agree with what has been described, and have decided to participate in the study will verify your choice to participate. If you later decide that you do not want to participate in the study, simply tell me. You may discontinue your participation in this study at any time.

In your reply, include the following information:

-A statement as suggested in the underlined section above.

-A closing that includes-

•Your full name

•Date

•Institution (School Name)

•Preferred Contact Address (School or Home)

**Please keep a copy of this email message for your records.**

Laurie C. Williams–Principal Investigator

**Continuing Participation Consent Form**

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**IRB# 2002-02-0093**

***Informed Consent to Participate in Research***

**The University of Texas at Austin**

**You are being asked to participate in a research study. This form provides you with information about the study. The Principal Investigator (the person in charge of this research) or his/her representative will also describe this study to you and answer all of your questions. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.**

**Title of Research Study:**

INCORPORATING ONLINE PROJECT INTO K-12 CLASSROOMS:  
THE ODYSSEY FROM BEGINNERS' PERSPECTIVES

**Principal Investigator(s) and Telephone Number(s):**

Laurie C. Williams  
(XXX) XXX-XXXX

**Funding source:**

This study has no outside source of funding. All costs incurred will be the direct responsibility of the Principal Investigator, Laurie Williams.

### **What is the purpose of this study?**

You are invited to participate in the continuation of a study of perceptions of K-12 teachers who have joined online projects for the first time. My name is Laurie Williams, and I am a graduate student in the College of Education at the University of Texas at Austin. The study in which you participated earlier this year is now being completed as my doctoral dissertation study.

You are being asked to continue your participation so that I may complete the study. You were initially chosen because you on to took part in an online project hosted by one of the following online organizations: KIDLINK/KIDPROJ, 2Learn, ePals, Electronic Emissary, the Global School Network (Hilites Archive), or Oz-TeacherNet. If you choose to continue to participate in this study, you will be one of six people involved. From now through June 2003, we will work together using phone interviews and email to continue to develop the story that you have to tell about taking part in your first-time online project.

### **What will be done if you take part in this research study?**

If you decide to continue to participate in the study, the next step will be to review and change, according to your suggestions, the summary of our previous interview as a springboard for further questions and discussions. The primary mode of communication we will use to continue the process will be email.

Should we need to conduct interviews by phone, we will set up calls so that they are convenient for you, both in time and length. I will be recording our phone interviews and using a professional transcription agency to transcribe the interview.

After each interview, I will send you a copy of a summary of its content via email and ask for your feedback. For example—changes or corrections that need to be made; additions or deletions that should be done; data that need to be appended. Though we will be contacting each other mainly by email or phone, you may also opt to contact me using regular mail, fax, or an online chat. The number of interview/feedback sessions will depend on the development of the story we will be writing together. Because we have completed one interview/feedback session, we will need no fewer than 4 interview and 4 feedback sessions to finish the study.

### **What are the possible discomforts and risks?**

By taking part in this study, you may be exposed risks. One potential risk is loss of confidentiality. To help avoid this, a pseudonym will be used in place of your name in all phases of the study. All audiotapes used will be identified by code only and will be kept in a locked file in my home office. The tapes will be erased at the end of the study in August.

Another potential risk you face is possible psychological discomfort due to the reflective process that you will be going through as you share your story. Because of this, you will have the authority at all times to dictate what information you wish to have withheld from the study, by refraining from discussing topics or not answering questions during the interview, or by asking to have topics removed. To ensure that all information you provide is an accurate reflection of your ideas, you will be asked to verify information as it is collected, and information will only be disclosed with your permission.

There may also be risks that are unknown at this time. If you wish to discuss the information above or any other risks you may experience, you may ask questions now or call the Principal Investigator listed on the front page of this form.

### **What are the possible benefits to you or to others?**

Participating in this study may be beneficial to you. Arising through the reflection process that you will be taking part in as we develop your story, participating in self-reflective activities may help to provide you with new insights about situations you may have encountered while participating in the project. The process might also help provide new or different understandings of situations as you examine them in hindsight. The results of the self-reflection may help to improve or enhance future participation in online projects.

### **If you choose to take part in this study, will it cost you anything?**

Participating in the study will not incur any expense for participants.

**Will you receive compensation for your participation in this study?**

Participants will not receive a stipend or any other compensation for taking part in the study.

**What if you are injured because of the study?**

This study does not involve physical risk that might result in injury for participants.

**If you do not want to take part in this study, what other options are available to you?**

Participation in this study is entirely voluntary. You are free to refuse to be in the study, and your refusal will not influence current or future relationships with The University of Texas at Austin, my Directed Research grade, nor will it affect any future relationship you may have with the organization hosting your project.

**How can you withdraw from this research study?**

If you wish to stop your participation in this research study for any reason, you should contact: Laurie Williams at (XXX) XXX-XXXX. You are free to withdraw your consent and stop participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

If you have any questions about the study, please ask me. If you have questions later, call me, Laurie Williams, at (XXX) XXX-XXXX or you may email my supervisor, Judi Harris, Ph.D., at [judi.harris@xxxx.xxx](mailto:judi.harris@xxxx.xxx)

In addition, if you have questions about your rights as a research participant, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (XXX) XXX-XXXX

***How will your privacy and the confidentiality of your research records be protected?***

To maintain privacy and confidentiality, all participants will be referred to by pseudonym. Participants' real names will not be used in the study. All documents and audiotapes will be coded using the participant's pseudonym, and audiotapes (which will be kept in a locked file in my home office during the study) will be destroyed at the end of the study.

Authorized persons from The University of Texas at Austin and the Institutional Review Board have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. If the research project is sponsored then the sponsor also have the legal right to review your research records. Otherwise, your research records will not be released without your consent unless required by law or a court order.

If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

**Will the researchers benefit from your participation in this study [beyond publishing or presenting the results]?**

As the Principal Investigator for this study, I will not be receiving benefits from your participation in the study beyond publishing or presenting the results.

**Signatures:**

You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this Form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. By signing this form, you are not waiving any of your legal rights.

You are making a decision whether or not to participate. A reply to this message indicating that you have read the information provided above, agree with what has been described, and have decided to participate in the study will verify your choice to participate. If you later decide that you do not want to participate in the study, simply tell me. You may discontinue your participation in this study at any time.

In your reply, include the following information:



-A comment as stated in the underlined section above.

-Followed by a closing that includes-

- Your full name                      •Date
- Institution (School Name)•Preferred Contact Address (School or Home)

**Please keep a copy of this email message for your records.**

Laurie C. Williams–Principal Investigator

### Appendix C: Sample Coded Phone Interview

<b>Line #</b>	<b>Text Block</b>	<b>Category Code(s)</b>
<b>9</b>	I think it was very worthwhile.	-Reaction-Teacher
<b>9-12</b>	The students gained knowledge of the computers, and how to use the different programs. It gave us an incentive to work toward it. It increased students' awareness, their interest, the knowledge of different programming.	-Effect on Class -Learning by Doing
<b>12-14</b>	It also helped to integrate the information and communication technology outcomes into our other area of study, like science and social studies, math, health, and language arts.	-Curriculum Connection -Learning by Doing
<b>14-16</b>	I guess each time I work with a computer, I seem to be learning something new as well, and it was a good thing.	-Learning by Doing
<b>16-18</b>	We were able to use some peer teaching. When students ran into difficulty with a program, those students who were a little more up on it could help them, as well as I could get help.	-Support-On Campus
<b>18-22</b>	Also, we have what we call a super user, and they know a lot more about computers than I do. And if I need to, as a last resort, I would go to that person and get some help. They also have time in their day when they can do in-service with me on different programs as well.	-Support-On Campus -Formal Training
<b>22-24</b>	I guess the only limitation would be the amount of time it took to get some of the computer programs and to get the students to come up with a product at the end.	-Obstacle/Conflicts
<b>24-27</b>	The tradeoff, I guess, for that is the student motivation and that they have a polished product for everyone. Everyone gets a product that looks really good at the end of it all. So it was a very worthwhile project to do.	-Obstacle/Conflicts -Effect on Class -Reaction-Teacher
<b>33-35</b>	The students used the Internet and they were able to know how to look at things more critically and say, "Is this a good source of information? Is it a	-Learning by Doing

	reliable source?" Those kinds of things.	
<b>35-41</b>	They learned how to use different programs, like the Inspiration program. It's a web-type program where they can brainstorm ideas and it puts them out into webs and it helps them to categorize and put information into it. From that, they can use it in their writing. They used the Word program. They learned how to cut, copy, and paste, and they learned how to save and use the spellchecker. Most of the things involved in the Word program.	-Learning by Doing
<b>41-46</b>	On Excel they learned how to do graphs and produce different kinds of graphs with different information. They did the PowerPoint presentation. They've learned how to import pictures from other areas such as we have some internet sites that they can take pictures from, or from our network site. There are some pictures on there that the students can use, and they learn to import those into their PowerPoint.	-Learning by Doing

*Table C1* Excerpt of category coding from an interview with Kate on May 30, 2002.

## **Appendix D: Sample Summary**

### **3/20/02 Interview Summary**

#### **Rachel (KIDLINK & Monster Exchange):**

Rachel is the computer teacher in a K-5 school in New Jersey. "I try very hard with the students to always make whatever we are doing in the computer lab enhance what we are doing in the classroom. I teach first grade through fifth, 540 students altogether. I see them each for 40 minutes once a week." This year, Rachel integrated two online projects into her curriculum. "I integrated the Monster Exchange with my third graders, and I integrated *Grandmother & Me* with my second graders." She was specifically looking for projects that corresponded with skills which students were working on in the classroom, particularly writing skills. The emphasis on writing came from both a district level emphasis and classroom teachers. Rachel "...talked to the classroom teachers and asked them if there was any particular subject they would like the children to focus on" in the computer lab, hence the focus on writing.

In the Monster Exchange project, Rachel's third grade students were paired up with third grade students in a school in California. "[T]he way that project worked is they had to draw a monster, and create it right from their own minds. Then they had to write a descriptive paragraph as best as they could describing that monster." Each student drew his own monster using KidPix and sent a description of the monster to his partner in California. The receiving partner then drew another monster based upon the description. Some of the others "...did paper and pencil or paper and crayon drawings and just used a scanner). Students could then go to the Web site to see both the original and redrawn monsters as well as the written description that both were based upon. The project worked well, "... but we had some trouble getting our email set up, and then once we did get it set up, we didn't always get responses back right away from our partners." This caused the project to lose "...it's steam" and "...ended with a whimper."

Rachel's second grade students worked on a KIDLINK KIDPROJ project called *Grandmother & Me*. In this project, students share information about their grandmothers. Discussion

topics revolved around questions posed by the project moderator each month.

As she began the projects she thought that she "was going to do a lot more with the third graders than I did, and a lot less with the second graders than it ended up to be." Rachel found it necessary to "cut some corners" and "Not develop them as fully" as she had initially intended. She felt that both experiences were exciting and rewarding, but that they didn't turn out like she initially expected them to be. The students also found the experience exciting, and the projects began "snowballing" into other areas.

The entire time that I'm doing them, even if I'm happy with the way that it's going, I am always saying, "Gee, I think I'll try it this way next time. Or maybe I'll change this just a little bit. Or I didn't do it this way, but I think I could have." One idea always leads to another.

The ideas grew "...bigger and bigger" with the project taking on "...a life of itself.

The *Grandmother & Me* project expanded into creative stories and math. From the realization that students called their relatives something other than grandmother or grandfather, the classes began to survey others about their names for grandparents, and they graphed the results. The students enjoyed contacting their grandparents and "...liked the idea of being able to put their work on the Internet. It made them really excited, and they have been showing their parents, and they have been showing anybody they can get to look at it." As an added extension, the classes decided to have an end-of-year party and invite their grandparents. Rachel was able to incorporate this into computer use lessons in designing invitations.

Rachel did a lot of practice writing for the *Monster Exchange* project. Students began with very simple descriptions.

They would say, "Oh, my monster is mean. My monster is scary. My monster eats people."

She explained the difficulty in drawing monsters with that kind of description. Using examples of previous *Monster Exchange* projects, Rachel demonstrated good descriptive passages and poor descriptive

passages. Students then practiced writing descriptions and evaluating descriptive detail.

One difficulty that Rachel ran into came from a district policy that student names not be published on the Internet. The technology department sent out a memo to all the technology teachers instructing them to remove student names from any work posting online. This was really a stumbling block for her. "I was thinking, 'Now how am I going to be able to do this with KIDLINK?'" On KIDLINK, students have to register using their names. Instead, Rachel registered as a teacher "And I posted the first things, the graph that the children made..." under her schools' name. She saved some time by having students save the work they wanted posted onto the lab server. Then, she could post information by copy/pasting student responses into one email message. After parents began to see the work that was published, they became interested and allowed the children to register from home. She also photocopied the questions students would need to send in order to register with KIDLINK and sent this home to parents. "[O]nce parents saw what was going on and how excited the children were about that, we didn't actually have to cut the corners as much as I thought we would have to."

She didn't find this true with her third graders. In their project, she had to do the uploading to maintain confidentiality. "I think they lost a little bit of that experience." She eventually decided to use a service called GaggleNet that provides "...free email accounts to teacher supervised email accounts." She received district permission to do this, but her lab couldn't handle multiple students "...accessing the same site at the same time." This made the lab experience a little different than she expected. For example, she couldn't have students go online to look for their completed work on the *Monster Exchange* site. She said that if she were doing this project again she'd do it differently.

Well, I would still have the children all do their own pictures, but then I would find something else for them to do and call the children over one at a time, or maybe two or three at a time, to go and access the site, or if I worked with them individually one at a time, then I could guide them through the downloading, and the parents wouldn't feel so much exposed to danger. I would be able to be with them the whole time instead of supervising 30 children trying to get things done at the same time. So I might have them start that way, and

then say, "Okay. We're going to put this project aside for now," and start them on something else, and then work with a couple of students individually at a time.

Rachel also doesn't just work with her own projects during lab time. If she's not busy with other students, she's willing to help other children who come in to finish projects from other classes. She spends the first half of class going through directions with her students. The second half of class, she works with students as needed and can thus work with students from other classes as they come in. "Sometimes I feel like I can't move fast enough to get where it is, but for the most part, it works pretty well. Also, the children know that as long as they use their whisper voices, they are allowed to get help from their neighbors.

### Appendix E: Sample Categories

Category	Description
<b>BKG-School</b>	School demographic descriptions
<b>BKG-Class</b>	Class demographic descriptions
<b>BKG-Tchr</b>	Teacher demographic descriptions
<b>BKG-Community</b>	Community demographic descriptions
<b>Bkg-District</b>	District demographic descriptions
<b>Tech Access</b>	Teacher description of access to technology on campus
<b>Formal Training</b>	Teacher description of formal training in technology integration
<b>Finding Out About Project</b>	Description of how the teacher discovered her project(s)
<b>Description of Project</b>	Teacher description of the type of project
<b>Expectations</b>	Teacher initial goals and plans for project
<b>Project Steps</b>	Project activities teachers and students had to follow
<b>Modifications Made</b>	Modifications the teacher made to make the project "fit" her students needs
<b>Curricular Connections</b>	Ways the teacher recognized the project fitting into the curriculum
<b>"Snowballing"</b>	Rachel's description that describes projects flowing into other areas and becoming more than expected
<b>Extensions</b>	Descriptions of additional activities teachers designed to add to the project
<b>Making Connections</b>	Description of ways that teachers found communications connections occurring throughout the project
<b>Incorporating Technology?</b>	(Note: Should I keep this one???) This describes the way teachers explained that they had incorporated technology in the past.
<b>Learning by Doing</b>	Teachers descriptions of the way that students (and teachers) are learning by participating in the project
<b>Learning from examples of others' work</b>	Ways that teachers look to examples and how they apply this learning
<b>Effect on Class</b>	Ways the project effected students
<b>Support-District Level</b>	Assistance and support given by district personnel



<b>Category</b>	<b>Description</b>
<b>Support-On Campus</b>	Assistance and support given by school personnel
<b>Support-Online</b>	Assistance and support teachers find online
<b>**Support-Others</b>	**New as of 1/9 Teachers description of the ways they are helping to support other teachers
<b>Working w/ Others-On Campus</b>	Ways that teachers work with their peers in the school
<b>Working w/ Others-Online</b>	Ways that teacher work with their peers online
<b>Obstacles/Conflicts</b>	Problems and barriers that teachers and students run into during the course of the project
<b>Spreading the Word</b>	Description of ways that teachers have informed others about participating
<b>Reactions-Others</b>	Reactions that others have had to the teachers and students taking part in online projects
<b>Reactions-Tchr</b>	Reactions that the teachers have had to taking part in online projects
<b>Reactions-Sts</b>	Reactions that the students have had to taking part in online projects
<b>Future Plans</b>	Plans that teachers have for future projects as a result of participating in their first projects
<b>**After the project</b>	**NEW as of 1/9/03 Teachers describe what they are doing in the 2002-2003 school year (or since their first projects)

*Table E1* Interview categories as of 1/9/03

## **Appendix F: Sample E-mail Interview**

### **Interview #3-1/8/03**

**Kelly (EPals)**

**1. Looking back over the summary of Round #2, is there anything you want to:**

**\*add?**

**\*correct?**

**\*remove?**

No

**2. In Round #2, you said, "The students began with a list of questions to ask their spanish epal and most did receive some very interesting answers. I think my student were surprised to find out how different these students were. Many cultural and social differences were mentioned, particularly about music and clothes, were of interest to my students."**

**\*What are some examples of the first type of questions they asked?**

They asked questions like "What are your favourite subjects in school" "How many brothers and sisters do you have" "Do you have any pets" "What do you do in your spare time"

**\*When you say "interesting answers," what do you mean by this?**

They received answers from their Spanish epals that were different than what they were used to here in Canada (like a lot of kids didn't play baseball or hockey, but a lot of them played soccer) Also, the students noticed that their families were bigger in Spain.

**\*What were some of the differences mentioned?**

See above.

**3. In Round #2, you said, "My students were eventually asking thought-provoking questions that allowed them learn a lot more about their epal."**

**\*What do you mean by "thought-provoking"? Could you give an example?**

Like "What do you want to be when you grow up?" "What jobs do your parents do?"

**\*How did you your students "eventually" reach this stage?**

I think because they ran out of "ordinary" questions to ask (like age, etc.) and we getting to know their epals a bit better.

**4. In Round #2, you said, "Unfortunately, as my students became more accustomed to emailing, they became more apt to use slang terms (cya, etc.) as well as cute email terms (l8r, brb, etc.) which I told them they couldn't use in their epal letters."**

**\*Why did you not want them to use these types of terms?**

Because I didn't feel that the Spanish kids would have as much experience with the internet and slang as they would. Also, this was a language lesson, and those words would not be appropriate. I told them that they are to write to their epals as if they were writing to me (proper spelling and punctuation too).

**\*How is it that as they became "more accustomed to emailing" they**

**"became more apt to use" terms like these?**

Because they were emailing each other on a daily basis and were learning more about the slang terms that way.

**5. In Round #2, you talked about students who "...were abusing their email privileges and were eventually removed from the program due to inappropriate emails."**

**\*Could you tell me about this some more?**

I had 2 students that were "involved" and were using their email to talk to each other at home. Eventually they began writing about sexual topics and some derogatory terms came out about another student in the class. I wanted to make an example out of them for the other students to learn from and to understand that I was in fact reading their emails!

**\*What happened and how was it they were "eventually removed" from the program?**

I read their emails and informed the principal and his parents that he was removed from our student email program. He was very upset.

**\*Were you able to catch these messages while you did your monitoring and prior to them being sent out to your partner class?**

Yes I was. These messages were not written to our epal class.

**6. In Round #2, you said that you were "...eventually able to trust that most of the students were using appropriate language to their epals."**

**\*Could you tell me about this some more?**

I checked more messages and never saw anymore inappropriate messages.

**\*How were they able to "eventually" earn your trust?**

They didn't. I didn't give them another chance.

**7. In Round #2, you said, "Other teachers were amazed that we were able to communicate with students from another part of the world. They were very interested in doing the same in their class but no one ever did."**

**\*How did they hear about this communication?**

I talked about it in a staff meeting.

**\*What about this "amazed" them?**

That we could talk to and learn about kids in another part of the world. Also, that I tried to link it into our social studies curriculum.

**\*How would you describe their reasons for not "doing the same in their class"?**

A lot of teachers are not as comfortable with technology and teachers are very busy and don't have alot of time to try new things. Also, access to computers was a problem for some classes.

## **Appendix G: Samples of Member Checking**

### ***During Phone Interviews***

#### ***Claryifying Understanding-Excerpt from First Interview with Anise***

**ANISE:** The other thing that I liked was we sent a flat laminated cartoon character. It was a former student who designed this character. He took a stick figure I did and turned it into a little cartoon. At the time, I thought that it was laminated and it was okay, and that it didn't have to be a three dimensional stuffed toy. Then I sent a stuffed dog to go with him, too, just so there would be a stuffed animal. So the kids over there were kind of disappointed that it was a flat Mikey. So I apologized and everything because I felt bad, but at least we sent a stuffed toy, too. But one of the parents went ahead and made the Mikey doll and I was just impressed. And it's so cute. They sent pictures of him and it's really a cute little doll that she made. I thought that was really fantastic.

**LAURIE:** Is this the one they are going to use at the beginning of next year, then?

**ANISE:** Yes. If they send it back home. I'm hoping they will send it home with the package. But yes, I would love to use that little doll at the beginning. Then some of my kids went and made Mikey dolls, too, and we did send one in one of the packages. But I thought the interest there, my kids going home and making Mikey dolls, the doll was really cute, but probably not as-- Because the kids made it, and they did their very, very best, but the one that the parent made over in Australia was just adorable. It makes me feel like wanting to go market it or something.

**LAURIE:** It was one of the parents in Australia that made it?

**ANISE:** Yes. I was so surprised by the interest they took in this. The other thing that they did, we were talking about the trading cards, and we hadn't worked out the criteria or anything, but one of the kids over in Australia brought in a trading card already made as a prototype and he was going to refine it. He was going to send me an attachment of what it

looked like, but he hasn't done that yet. The interest there that it has created in these kids, and the fact that one of my kids that I had never expected to work on this egg parcel thing, she brought it in already ready to go. I really like the interest they are taking in all of this.

**LAURIE:** So they are not just working at school then, they are taking a lot of this home?

**ANISE:** Right. And I wish they would do their homework like that. That's the other fascinating thing. The Travel Buddies, I'm hesitant to let some of these kids take them home because they are not notorious for turning in their homework this year, and they are very bad about turning in homework, and I was just really skeptical about as to whether or not it would work out. I just assumed they would be forgetting the Travel Buddy everyday, and then we would just be up a creek. And they are not. Nobody has forgotten it yet. And they are writing in the journal and being very detailed, so detailed that it gets boring. But the fact that at the beginning of the school year, it was difficult to get them to write a complete sentence, and we've been working on this all throughout the school year, and then they are writing pages and pages in these journals that they are keeping. And then the fact that they get to do the email the next day, too, and the email, I think they basically copy from the journal on there, but it's very detailed and giving the description as to what the little buddy does each night.

### ***Summarizing-Excerpt form First Interview with Rachel***

**LAURIE:** When you talked about how with the Grandmother and Me project, you found with the group of kids that you had working on the project that nobody called their grandmother 'Grandmother' and their grandfather 'Grandfather.' Then you said you took it to the other second grades, right?

**RACHEL:** Right. Well, there are 120 second graders, and we did the project with all of them. But I wasn't necessarily going to do the graph with all of them. I was going to just have each class do their own graph, and it was going to be a big combined one. But when the one class found out that nobody did, they were curious to know what the other classes did.

**LAURIE:** So that question came from the kids?

**RACHEL:** That came from the kids.

**LAURIE:** When you said there were 120 second graders, how many third graders were you working with on the Monster Exchange?

**RACHEL:** The third grade classes are a little bit smaller. I think there are only 97 or 98 third graders.

**LAURIE:** And they come class by class to your room?

**RACHEL:** Yes.

**LAURIE:** You said you started out focusing on just the one topic area on the Grandmother and Me project, and then you said something about cutting corners. Do you remember what the cutting corners...?

**RACHEL:** Well, our school district has a policy that you may not publish a child's name on the Internet. You may not. And I was thinking, "Now, how am I going to be able to do this with Kidlink? Kid Link wants the kids' names, how am I going to get this done? So rather than register all the children, I registered myself, and I posted the first things, the graph, that the children made, and I just posted it under H.L. Beeler Second Graders. When the parents saw that, they became more interested, and then they allowed the children to go ahead and answer the four Kidlink questions. Prior to that I had gotten a lot of resistance. So I figured we wouldn't really be able to participate as individuals, but have to write a summary. But once the parents saw what was going on and how excited the children were about that, we didn't actually have to cut the corners as much as I thought we would have to. On the other hand, with the third graders, I did have to cut corners considerably. I did not put any of their names on, and because none of their names went on—I mean, they still did the monsters and they still did the descriptions, but I could not allow them access to the Internet to do the actual uploading of their pictures. I had to do that part myself when the class was over, and I think they lost a little bit of that experience.

## ***During Email Interviews***

### ***Claryfying Understanding-Excerpt from Elaine's Fourth Interview***

3. In Round #3, you said, "When discussing *The Watsons Go to Birmingham*, 1963 by Christopher Paul Curtis, the students followed the court case that was going on with one of the accused men."

\*Could you tell me more about this, I'm not familiar with the book or the actual case that you're talking about.

*The Watsons Go To Birmingham, 1963* by Christopher Paul Curtis is about an African-American family that lives Flint, Michigan. Because the teenage son is a "juvenile delinquent," the parents decide that he will spend some time with his grandmother in rural Birmingham, Alabama. The weekend that the family arrives in Alabama was the weekend of the now famous Sixteenth Avenue Baptist Church bombing that happened on September 15, 1963. Four teenage girls were killed when a bomb went off during Sunday school. Several other children were permanently injured. Just last year one of the men responsible for the bombing was finally put on trial. He was found guilty.

### ***Correcting Researcher's Understanding-Excerpt from Stephanie's Second Interview***

1. Looking back over the summary, is there anything you want to:

\*add?

- P. 7, para. 1, line 4: Is it possible to qualify who "...these men who know everything" are? I was referring to the Head of our District-wide Technology Dept. and the technicians who work with him on installation, trouble-shooting, etc. I don't want it to sound like I am referring to all men in general!

\*correct?

- P. 9, para. 4, line 2 of the indented section: I think I said "evolved" instead of "They've involved way beyond..."

\*remove?



- p. 3, para. 2, line 4: “I have this idea key...” I have no idea what I meant by that! Is it possible to omit “key?”
- p. 4, para. 1, line 10: “The class also had taken...” This section is a repeat of the beginning of that paragraph.
- P. 9, para. 1, line 1-2 of the indented section. As happens throughout the transcription, I make no sense at all in that first sentence! Would it be possible to end the sentence at “...developer of the site.” And omit “...that can allow what it is.”?

**Appendix H: Sample of Student Work**

***Samples of Student Work Found Online***

***Kate's Students' Work for the Active Living Project***



*Figure H1* Sample of a student's art project.



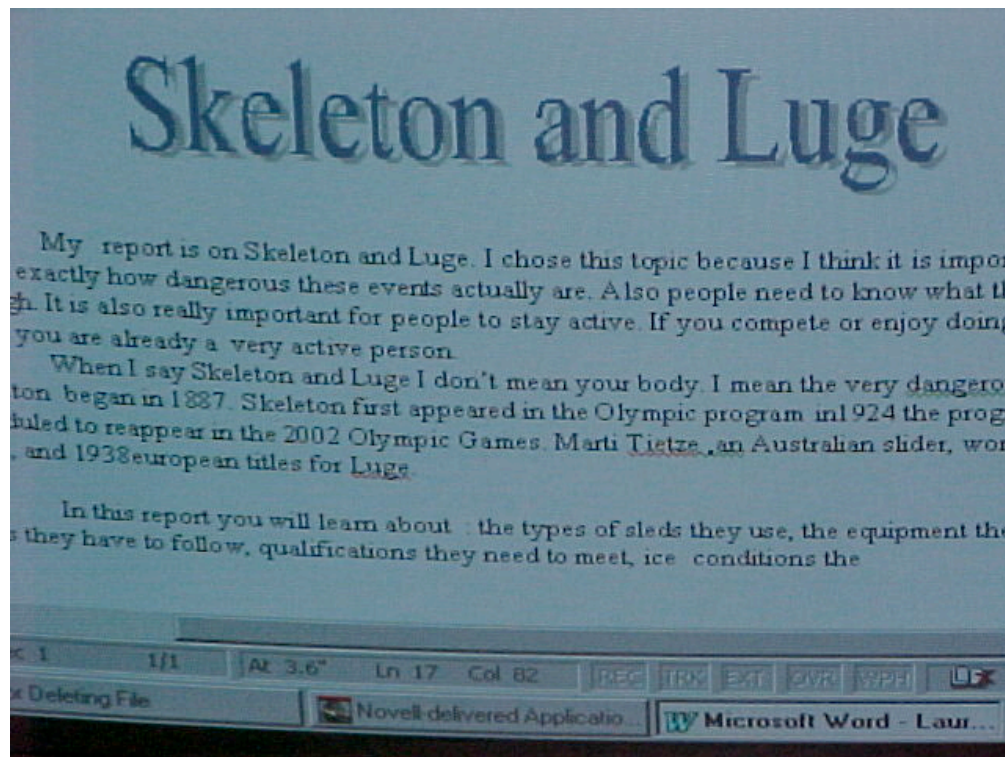


Figure H4 Sample of a student's report done in Word.



Figure H5 Sample of a PowerPoint slide created by students.

**Rachel's Students' Work for Grandmother & Me (GM) and Monster Exchange (ME)**

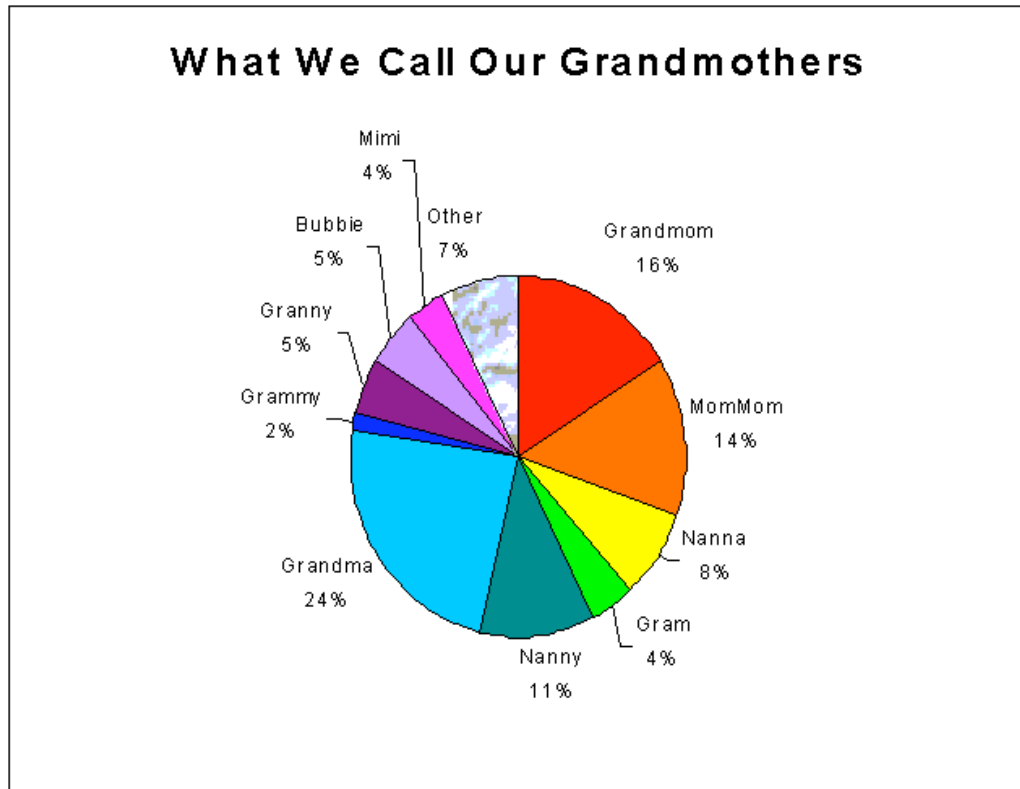


Figure H6 Graph Rachel's students created from their survey on Grandmother names.

**KidSpace Student Sample #1:**

My most special memory of Mommom is when I was a baby. She would rock me in her rocking chair and sing "You are my sunshine" My Mommom died when I was two and a half. My Mommom and Poppop are so special because they taught me things and watched me when my Mom was at work. The most important thing my Poppop taught me is how to tie my shoes. Poppop started his holiday season with the Thanksgiving Parade in Philadelphia when he was young. This year he took me with him. Poppop saw Santa ride in on a fire truck, go up the ladder and come down in a toy store called Toyland. This year, I saw the same thing only Santa went into a fire house. Poppop had a train platform. So do I. Poppop went to church on Christmas morning. We go to church on Christmas Eve. When Poppop was a kid he got the same amount of pennies as his age, fruit, and one gift (and coal if he was bad.) We sure don't have that tradition!

**2 Comments:**

Patti from USA said:  
Hello Alic,

Thank you for telling us how much you love your grandparents. My little granddaughter is now almost 2 and a half years old. I love to rock her in the rocking chair and sing to her. She smiles when I sing and wants me to sing the same songs again and again. I am sorry that your Mom-Mom died when you were so young. I am happy that you have such fond memories of her. I am sure she is in heaven and is watching over you.

It sounds like you have a wonderful Pop-Pop. I'll bet he never got coal in his stocking at Christmas. :-)

Your friend in Maryland,  
Mrs. Weeg

Eyglo from Iceland said:  
How wonderful memories you have about your grandparents, Alice. My MomMom had already died when I was born, but I had my grandfather until I was 14 years old. Now I have my own 2 grandsons and love them very much. Bye from Eygló, a grandmother in Iceland.

**KidSpace Student Sample #2:**

Grandmom is called "Babci" in Poland. When Babci was young on Christmas Eve they waited until they saw the first star before they could eat the Christmas feast. The meal was mostly fish and seafood. Then they would all have a Communion wafer to share with everyone. They would take turns wishing everyone something good for the new year. This is called "Opatki". We still do Opatki today.

**1 comment:**

Eyglo from Iceland said:  
Hello Erek. In Iceland where I live we mostly eat smoked lamb on Christmas, and we also eat "lamb's heads". Many people like to have pigeon for Christmas dinner and turkey is also getting more common in Iceland. When I was a little girl we couldn't get turkey in Iceland, and I only got my first chicken when I was 20 years old..... ;-) Best wishes from a granny in Iceland.

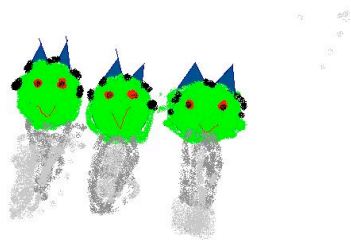




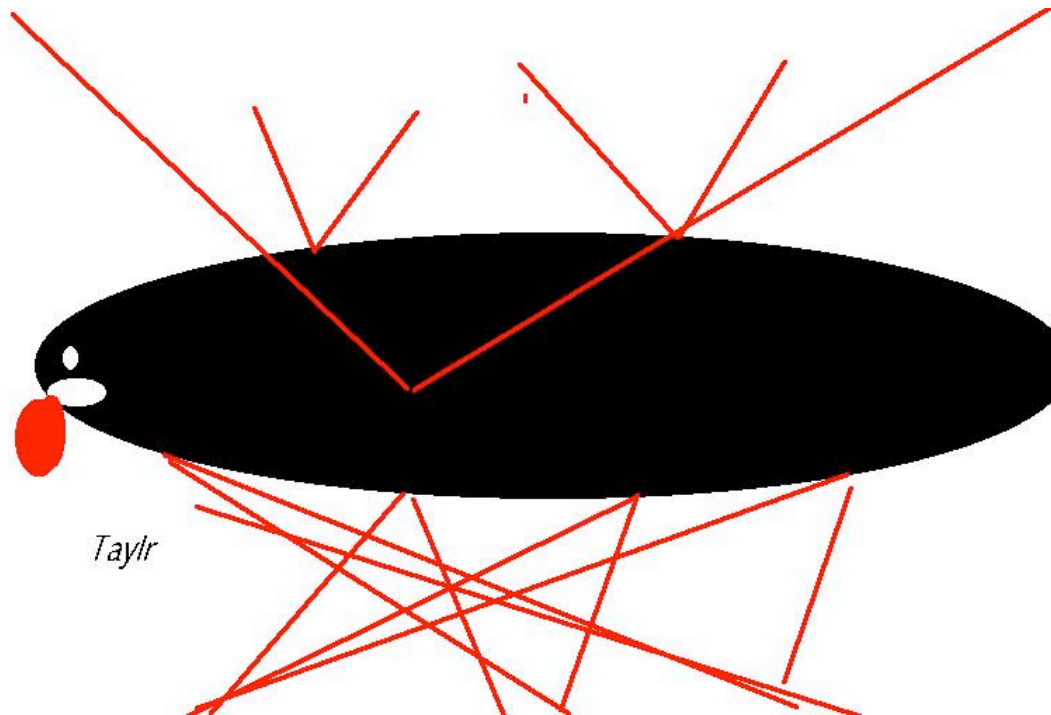
*Figure H7* Original monster drawn by one of Rachel's students for the *Monster Exchange* project.

**Student text used to describe the monster above:**

My monster has three green round heads and is shaped like a tree. It is a little different from a real tree. It has 2 blue spikes on each head. The spikes meet to form a V. His has 2 red circle eyes on each head. Inside each eye is a black dot pupil. His hair and ears are solid black. His mouths are red Vs. Each head has a gray beard. My favorite power that he knows is "Bloody Eyesight". It lives in the U.S.A. in Montana, I'm not really sure where. Can you make me one?



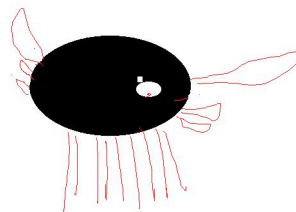
*Figure H8* Monster redrawn by the project partner based on the textual description.



*Figure H9* Original monster drawn by another of Rachel's students participating the *Monster Exchange* project.

**Student text used to describe the monster above:**

My monster [...] is big and fat. His body is a black wide oval. He is a little bit fatter than a cigar. His mouth is at the left end of the oval. It is a small with oval, and it is opened. His red tongue is sticking out of his mouth. He has six red skinny line wings on his back. Two wings are big and four wings are small. He has nine red skinny legs with no feet. He has a small white round eye above his mouth.



*Figure H10* Monster redrawn by the project partner based on the textual description.



**Stephanie's Students' Work for THWHIS and Monster Exchange (ME)**



*Figure H11* Stephanie's class picture for the *That's What Happens When It's Spring* project.



Figure H12 Stephanie's class' drawing of spring.



*Figure H13* Original monster drawn one of Stephanie's students participating the *Monster Exchange* project.

**Student text used to describe the monster above:**

My Monster has a purple, round body. He has two, black eyes with one circle in each eye. He has a black, oval mouth with a zigzag inside. He has two, small, yellow legs with two little, yellow feet at the bottom. He has black shoelaces at the top of each foot. He has two, little, yellow arms near the top of his body. He has four, little, yellow fingers at the top of the arms. He has two, little eyebrows at the top of the eyes.



*Figure H14* Monster redrawn by the project partner based on the textual description

## **Sample of E-mail Logs**

### **Excerpts from Elaine's Electronic Emissary E-mail**

From: EE Facilitator  
Subject: When Do We Start?

Hi Elaine and Josh!

When are we going to get this party started? (That's supposed to be my perky way of inducing y'all to set up some sort of schedule for the project.) If you are planning to start this semester (if I understand correctly, you are) - the sooner you get started, the better! Once the sound of jingle bells starts to fill the air, it will be more difficult to organize your students' time. Keep in mind that finals - for both of you - will be approaching soon after Thanksgiving. Somehow I think you have probably already taken that into consideration, but I wanted to be sure that you have.)

Carol - Why don't you set up a tentative plan for John to look over and give you feedback? It is especially important for y'all to talk about how often you plan for the students to communicate - do they have Internet connections in the classroom, or do they have to go to a computer lab to send and receive email?

Talk to you soon!

Electronic Emissary Facilitator

---

From: Josh  
Subject: RE: [civilrights] When Do We Start?

I am ready almost anytime. I have the books and should be able to read them shortly.  
Josh

---

Subject: Timeline  
From: Elaine

Hi Josh!

I am back from Virginia and am ready to roll. I love visiting Washington and Lee University where one of my sons is a student

because the people are so very different. I get a kick out of how people refer to each other as northerners and southerners. I guess in Texas we are just Texans!

I am going to list a few events that I thought the students could research. Being more familiar with the topic, if you think that there are other events that would be more pertinent, or if you know that an event that I selected will be hard to research let me know. My goal for this week is to nail down the research topics.

1954 Brown v. Board of Education

1955 Boycott launched in Montgomery, Alabama (Rosa Parks)

1957 Disturbance at Central High in Little Rock, Arkansas  
History of Garfield High School, Seattle

1960 Sit in movement

1961 Freedom rides

1962 Enrollment of James Meredith at the University of Mississippi

1963 Arrest of Martin Luther King  
Civil Rights Legislation in D.C.  
Seattle ---Equal opportunity demands  
Sixteenth Street Baptist Church bomb in Birmingham,  
Alabama.

1964 Civil Rights Act of 1964

1965 Voting Rights Act of 1965  
Watts Riots

1992 Los Angeles riots

People:

Martin Luther King  
Lyndon Baines Johnson  
Cross-over teachers

Organizations:

Black Panthers

Please list other people that should be researched.

I want a good list and then the 5th grade team of teachers will decide which students will participate and how we will group the students for each topic.

I hope you are having a great week.

Elaine

---

[Note: The next exchange took place over two messages and is seen here as a single dialogue]

Subject: RE: [civilrights] Civil Rights Project  
From: Josh

**The students wrote:**

Dear Dr. K.,

Greetings! Our unit on the Civil Rights Movement is coming to a close. We have learned so much. Today, each group is going to ask you one question, or maybe two, in hopes that you will share with us an idea we had not thought about. We loved your response about how the southern states opposed the Brown ruling partially because of their concern with states' rights. When we have edited the PowerPoint presentation that we put together we will post it. Once again, we want to say thank you so much for helping us.

**Josh replied:**

Here are my answers: They are also attached as a word file.

**The students wrote:**

Brown vs. Brown:

Did the Brown vs. Brown decision only deal with public schools or did it address segregation in other places like bathrooms, buses, parks and water fountains?

**Josh replied:**

Technically, Brown dealt only with segregated education. However, in the interpretation of the 14th Amendment by the Court, it was clear that the principle of equality would be applied to other areas. Some were the subject of court cases. Some came from action like the boycotts (Montgomery and transit systems), Some came from the 1960,s civil rights laws.

**The students wrote:**

Martin Luther King

Have you ever read King's first book, *Stride Towards Freedom*. What is it about? Do all states in the United States celebrate Martin Luther King day?

**Josh replied:**

I have not read King's first book, but I have just shown his "I have a Dream" speech to a class. While it is only 14 minutes, it is a powerful speech with much meaning today.

**The students wrote:**

Black Panthers

Were there other programs or causes that the Black Panthers got involved with? Did the Black Panthers always use violence, or did they ever use non-violent approaches?

**Josh replied:**

Local Black Panther groups got involved in a variety of self-help programs in Black neighborhoods. This had an additional benefit of gaining community support. As a group, the Black Panthers have been mainly a semi-military group using violence or the threat of violence. They did, however, often engage in demonstrations that did not result in violence. Much of the membership had its origins in many of the non-violent organizations. They often came to the Black Panthers since they felt the non-violent approach was not working.

**The students wrote:**

Ralph Abernathy

What did Abernathy think about the violence that the Black Panthers used?

**Josh replied:**

Ralph Abernathy was opposed to violence. So on that issue he had issues with the Panthers. However, he always wanted a unified Black front.

**The students wrote:**

Los Angeles Riot

Do you know why Rodney King was pulled over by the LAPD?

**Josh replied:**

I am pretty sure it was a traffic offense and then suspicion of drugs.

**The students wrote:**

Watts Riot

Did Martin Luther King or any other "famous" person get involved in trying to stop the riots?



**Josh replied:**

Many Black leaders including King urged non-violence. They frequently spoke out publically(sic). They also told the white power structure that the violence was from the frustration of rights denial and economic deprivation for years in the minority community.

**The students wrote:**

Civil Rights Bills

Did both the Democrats and Republicans support the Voting Act?

**Josh replied:**

Yes. The coalition supporting the bills were liberal to moderate Republicans and liberals Democrats. Opposed were mainly southern conservative Democrats and conservative republicans. Ideologically, those opposed argues states rights and control of governmental power.

**The students wrote:**

Rosa Parks

Who was the man that made Rosa Parks move? What was his background?

**Josh replied:**

I do not know the answer. She simply did not move when a white entered the bus and found her in the front white section of the bus.

**The students wrote:**

Central High School

When the school reopened in 1960 only two of the original nine returned to school. What happened to the other seven? Why did the number of students that were chosen to go to Central High School dwindle from seventeen to nine?

**Josh replied:**

Being on the cutting edge of integration is very hard and demanding. Many of the blacks dropped out doe to a variety of personal reasons. It was hard on the students and hard on the families. There was also great fear of violence. I wonder if I were a parent then if I would want my child to be on the cutting edge and face the danger and violence that existed.

**The students wrote:**

Garfield High

In 1964 out of 955 employees of the Seattle Fire Department only two were African American. How long did this situation last? How would you describe the population of Garfield High in 1957, rich, poor, or middle class?

**Josh replied:**

How would you describe the population of Garfield High in 1957, rich, poor, or middle class?

**The students wrote:**

I am sorry I do not know the answer to this question. It has been a long and slow process integrating all fire departments. Cities here like Milwaukee and Chicago are still in the process.

Protests

Did the Freedom Rides get publicized in the newspaper? After the riders rode on the bus, were they discriminated against even more? Did they lose their jobs?

**Josh replied:**

Yes, there was great publicity on both newspapers and TV. I am old enough to remember it. A very few lost jobs, but the boycott was successful. Most blacks participated, there was national support from the publicity (Rosa Parks was and is a [folk] hero). Eventually segregation ended due to the boycotts.

**The students wrote:**

James Meredith

Can you tell us anything about the organization that Meredith started in 1966, March Against Fear?

**Josh replied:**

Unfortunately this is another question that I do not know the answer to.

**The students wrote:**

....Again, thank you so much for helping us. On March 21<sup>st</sup>, we are going to hear Christopher Paul Curtis, the author of The Watson's Go to Birmingham at a local bookstore. We have learned so much!

## **Sample of Web Site Information**

### **Excerpts of Information Found on the ePALS**

About ePals

#### **>About Us**

Since 1996, ePALS Classroom Exchange has been helping teachers, parents and students around the world take advantage of new technologies that enhance and enrich learning experiences. ePALS has received numerous accolades for these efforts and continues to develop exciting new ways to bring technology and learning together in ways that are safe, easy and fun

>ePALS Classroom Exchange is the world's largest and fastest growing online classroom community, connecting over 4.5 million users from around the globe. ePALS helps learners of all ages become active members of the global community by giving them access to our tools, our resources and each other.

Since 1996, ePALS has allowed learners to broaden their horizons, work together and form new friendships. By developing and offering barrier-breaking resources such as the Internet's first built-in webmail language translation, ePALS has allowed people in 191 countries, speaking 136 languages to have meaningful contact with each other. Our safety innovations, such as monitored email and profanity filters, have helped to make ePALS the leading provider of email technology in schools worldwide.

ePALS as a company is committed to offering safe, innovative ways for all learners to make contact with other cultures. To support and improve our services, ePALS carefully selects partners and sponsors who share our values. In return, all of the tools and resources on ePALS.com are free to anyone with a computer, anywhere in the world. (To read more about our sponsorship policies, click here. We also have information on sponsorship opportunities.)

In addition to providing the tools and meeting place needed to create a worldwide community of learners, ePALS offers members ideas to get the most out of our community. Whether you want project ideas for your class-to-class partnership, or discussion areas where you can contribute your views on a matter, ePALS strives to make it easy for members to make meaningful connections with each other.

To learn more about ePALS, read on! We will tell you a bit about our past, where we are today and our hopes for the future.

**Kelly's registration info:**  
**[school name]** - Canada

Created by: **[Kelly]**  
Language: **English**  
Grade: **5**  
Age: **10-11**  
Number of participants: **26**  
City/town: **[name of city]**  
State/province: **Ontario**  
Country: **Canada**

**Description:**

Our class is located just north of our country's largest city, Toronto. We are going to be studying about Ancient Civilizations and would like to have epals from either Egypt or Greece! We have access to our school's computer lab at least 3 times a week so we would like students who can respond to us often - until June if possible!

**Date added:** March xx, 2002

**Date updated:** April xx, 2002

## Appendix I: Sample Reflexive Journal

### *Excerpt #1 from Journal (2/12/02-2/22/02)*

#### **#16 Wednesday, February 12, 2002**

Yay!!!!!!! I got my permission from the folks at 2Learn!!!!!!!  
One more down ☺ So where I am:

**5 definite returns** (iEARN, KIDLINK, Global SchoolNet, ThinkQuest, Telus Learning Connection [ie. 2Learn]);

**1 definite, but paperwork pending** (EE);

**2 being discussed with others...on hold** (Oz-TeacherNet, NASAQuest);

**2 no word yet** (Epals, Jason Project).

**--End Journal Entry #16**

#### **#17 Friday, February 16, 2001**

Today, I got word from ePALS!! I finally have a “body” to contact for site permission. As with my 2Learn permission, I needed to go into a bit of detail about the IRB process and what I was asking for. So ePALS has moved to an **on hold** position!

Last night, I walked through my focus statement and caught some places where I need to make some corrections. I think going through it several times with several “lenses”/purposes in mind might help fine-tune it, beef it up.

I also picked up my EE permission from Judi, so here’s how it stands:

**6 definite returns** (iEARN, KIDLINK, Global SchoolNet, ThinkQuest, Telus Learning Connection [ie. 2Learn], EE);

**3 being discussed with others...on hold** (Epals, Oz-TeacherNet, NASAQuest);

**1 no word yet** ( Jason Project).

**--End Journal Entry #17**

#### **#18 Monday, February 17, 2002**

So, how do things stand? Where are we now? I sent a nudge to my new contact at Oz-Teachernet. Judi also recommended the possibility of contacting IECC in place of the Jason Project or NASAQuest...

Over the weekend, I got my “OK to proceed” from the IRB! ☺ I’d like to go ahead and start hunting for participants for those organizations I have permission on. Need to get going!!!

Also, reviewing last week's reading—being that I was a bit fuzzy on it Tuesday, I've found some ideas and concepts that I might be able to work into my methods section (thinking ahead). I'll flag those for future reference, and I need to scout up my books that will help lay out my procedural ideas...a task ahead.

---

Late at night on Monday---ah, the usual time for quiet work around here and productive for me, I'm definitely a night owl! ☺ I was doing some other research online for WINGS Online and when I checked me email, I saw that I had some new mail in my WWWEDU folder. Lo and behold, it was an invitation to join an online project! The person who sent it is one of the "gatekeepers." I went to the site, and looked around it, I think it's promising, since I haven't heard from NASAQuest or Jason yet at all. The site is "Creative Connections-Let's Go!: Around the World" <http://www.ccph.com/> . The contact info in the WWWEDU email message was:

Paul Hurteau  
PO Box 93  
Saratoga Springs, NY 12866  
E-mail: [ph@ccph.com](mailto:ph@ccph.com)

Looks like a definite possibility!! ☺

**--End Journal Entry #18**

**#19 Friday, February 22, 2001**

Busy weekend ahead. I haven't heard from the sites I'm waiting on. Looks like next week I'll send out one MORE request and open up requests to the other two organizations. I'm also going to need to block a lot of time to give some good thought to the next section we're working on in Mixed Methods, but that will need to wait until after the weekend.

**--End Journal Entry #19**

***Excerpt #2 from Journal (10/15/02-11/15/02)***

**#68 Tuesday, October 15, 2002**

I had my dissertation proposal defense yesterday, and boy, it went better than expected!!! I was nervous going in that I would get peppered by questions that I'd have difficulty answering due to the stress I've felt due my dad's death (funeral in El Paso tomorrow—on my way there today). I went in, gave my little talk about what the study would be, how I'd come to arrive at this point (past research on the topic), and where I hoped to go with it (merge my pilot study participants' info into the dissertation, since I'd only had one interview with each of the six and then add 3-4 more interviews to it). The big question was around how merging it would work. Two of the more positivistic members of my committee were questioning that...they thought it would affect data results. We (the constructivists on the committee) explained how it is seen in our paradigm. We also tossed around ideas about ways to work around this issue and a couple of other concerns of the positivists, but the overall feeling of the meeting was fun and congenial. I was treated more as a peer and new researcher than a student.

The upshot...they decided I should just stick with the 6 people from my pilot!!!! The only other point of discussion was around my use of the word "pastiche." We were in a videoconference (as one of my members [Dan Wheeler] is at the University of Cincinnati). One of my committee members said, "Hey, Dan, don't you have a dictionary there in your office?" Dan found it, and found that both of our definitions fit the word. Then he said, "There are also synonyms you can use, like potpourri and hodgepodge." We then joked about using "hodgepodge" instead, and trying to fit the word into my title.

Then my chair said that all doctoral students should be given a weird word like that to try to fit into dissertation titles. We all cracked up.

The meeting was pretty much over 45 minutes early, we just sat around discussing research type stuff and shooting the breeze. Dan (who is one of the early pioneers of online projects for kids) said that he thought that my study was going to be very interesting and add valuable knowledge to the body of research on telecommunications projects!!!!

I was doing a "happy dance" after the meeting, and the euphoric feeling is still going strong!!!

**--End Journal Entry #68**

**#69 Monday, October 21, 2002**

I've got my stuff taken in to the DRC. I sure hope I get this back soon! I don't know if it's dealing with grief or what, but I've been really exhausted and dragging. Things that require much focus is really hard to do right now, and I'm forgetting things left and right. I'm going to try to cut myself some slack. I have to wait for the IRB info to get back to get going...I'll work on things as I can.

We've set our PD meetings for 11:30am on Tuesdays at Central Market South, btw. I think this regular meeting will help get me together.

I'm going to sit down and try to plan a long-term course of action to try to stick to and bring it tomorrow to the PD meeting.

**--End Journal Entry #69**

**#70 Sunday, November 3, 2002**

Ack!!! Time sure got away with me last week!!! So many things crashing in around me to get done! I'm still dealing with the blasted doldrums, too. It's not quite as bad, but still problems focusing. Maybe breaking things up into little bits will help.

1. Tonight, I need to print out a copy of recent journal entries to bring to our PD meeting on Tuesday.
2. Court will be contacting Judi about us having our defense presentations the first week in June.
3. I need to remember to get a copy of my proposal to send to Jim Maxwell.
4. I also need to work this week on updating Chapters 1-3 according to my committee and changing tense.

Another idea...when I make changes on 1-3, etc. I'm going to burn the files on CD to back up. I may go through a bunch of CD's...but it's better than losing info if my compy crashes!!!!!!

**--End Journal Entry #70**

**#71 Thursday, November 7, 2002**

Busy, busy, busy. Yesterday I found out that my IRB stuff had been signed by the DRC LAST WEEK!!! The person in C&I responsible for contacting me forgot to!!!! ☹ I went up and got it yesterday and made copies. Today I took the updated pages over to NOA 5.200 which is where IRB forms go now.



Tomorrow—fix proposal as mentioned on Oct. 14<sup>th</sup>'s meeting and work on Anise's summary.

Work schedule tomorrow:

9-11am

Break for lunch and errands

1-2pm

Go pick up Dan's dinner and take it and his uniform to Bowie

Plan to get in at least 4 hours of work this weekend!!!

**--End Journal Entry #71**

### **#72 Friday, November 8, 2002**

I've changed the word *pastiche* to *pointillistic illustration* in the first instance and to *mosaic* in the second instance. Then looking through my section on the sample, I'm going to need to think about this. I had already stated that I was choosing the first respondents to my call. I think I'll need to also update this to indicate the continuation from the previous study. In this section, I also changed *eight to ten* to *six*, indicating the number of participants in the study.

Chapters 1 & 3 will need to be gone through carefully to move from future to past tense. I want to talk to my PD team about this next time.

**--End Journal Entry #72**

### **#73 Thursday, November 14, 2002**

As things stand now, we're waiting for IRB approval on our team. Everyone is champing at the bit! I'm having a bit of a trial with me knee and finding it difficult to sit at the computer for long periods. Hope this goes away soon! Sheesh!

I went to Kinko's to copy Anise's and Elaine's interviews to scribble on them as I work up their interviews. I hope to work on this next week. Dat's da plan ☺

**--End Journal Entry #73**

### **#74 Friday, November 15, 2002**

Yay!!!!!!! IRB approval came in! I'm going to start sending out consent forms this weekend ☺ I've sent a message to let my PD team know that things are "Go."

**--End Journal Entry #74**

### ***Excerpt #3 from Journal (1/2/03-1/7/03)***

#### **#88 Thursday, January 2, 2003**

My, does it feel weird typing "2003"!!!! Just went online to check my email prior to heading back to Austin (still in E.P. right now at 7:30am). When I woke up early this morning, I was thinking about my participants and since only ONE sent me her response, I thought about emailing the others with a *nudge*. Thinking about that I thought, "Oh, crud, what if they aren't checking their email?" :-/ So, the decision I made was that tomorrow I should call the ones who hadn't responded.

Hopping online, I wasn't expecting anything. And POOF! There were **TWO!** Anise (OzTeachernet) got back to me, and Rachel (KIDLINK) emailed me, too, with hers as an attachment!

I can't print out either of theirs, I'll do it when I get home. I'm going to work on summarizing Kelly's today on the trip home.

Off to finish packing ☺

Oops, one more thing, after checking some of the email and going on to eat breakfast. I got a message about sending in my continuation review for the IRB. I sat down right away and filled in the form. I need to call Mary Lee tomorrow to get her sig, then I need to FedEx it to Judi for hers. I need to get this in by next Friday!!!! If not done, they'll review it in February, but the sooner the better!!!

**--End Journal Entry #88**

#### **#89 Saturday, January 4, 2003**

Okay, so here goes.

#1-Yesterday, I FedExed my continuation form to Judi. She got it today and will be FedExing back to me tomorrow or tonight! Tomorrow, I'll call MaryLee about signing it on Tuesday pm. It needs to be turned in to the NOA office by Wednesday, since John has surgery on Thursday. Expensive!!! \$70.50 to do this!

#2-I talked to Judi about this and also about chapters 4 & 5. I told her that I wasn't sure that I'd have all 5 interviews done by next month enough to write up in the chapters. She's recommended that I try to get as much done as possible to get it in to her. I wonder how the rest of my team will get theirs done due to the delays getting participants! This only gives me a bit of relief feeling (that I'm ahead of them). I really need to buckle down!!!

About my thoughts about things going on this year—she said that I should hold off and see how that fits in with my focus. I might be able to mention it in chapter 5 briefly, but I should wait to see and not depend upon it. She recommended I look into the "Wows" I got from folks.

#3-I called and talked to the 3 lingering ones. Elaine wasn't home, so I left a message on her answer machine. Stephanie had been sick, but said she would get it done this weekend. Kate had gotten my email message like the others (prior to Christmas), but she'd forgotten all about it.

#4-I've chunked and coded the 3 that are in. Tomorrow, when I can, I'll start working on summarizing them. I've got questions set for Kate's and some set on Anise's. Now to think of what to ask Rachel. I sure hope that the other 3 get back to me soon!! I want to send out summaries and the round 3 questions this coming week! During the interim, I'll be doing database entering and figuring out how I'm going to get 4 & 5 done.

I really hope that Court and I can meet this week! Lynda is out of town most of this month. I need to be sure to focus, focus, focus on my work some EVERY SINGLE DAY!!!!

It's just a few minutes after I wrote that last section (#4). Elaine just sent me hers! Elaine, Rachel, and Anise had minor corrections in their summaries, so their corrections are labeled as "IntSumupdated". I'm so excited to get Elaine's!! Now just two to go and this one to chunk/code.

**--End Journal Entry #89**

### **#90 Sunday, January 5, 2003**

Yay! Earlier this morning, I put the second interview replies into separate word documents (Participant Interview #2) and set up line numbers in each so that I have them for adding info to the database. I've just finished chunking and coding Elaine's! I've got to look through the summary, because her response to the first question (Add? Delete? Correct?) I believe is an addition. I'm going to need to read through it carefully and see how her addition fits in.

After this, I'm going to start outlining the summaries in the following order as received:

- Kelly
- Rachel
- Anise
- Elaine

11:20am---Kelly's was just sent off!!! Yay! KellySummaryb.doc I was able to whip this out quickly! Off for a bit of a break to get some household chores done. Then on to tackle Rachel's! If all goes well...4 done today??? Maybe ☺

2:12pm—Just finished Rachel's and I'm about to send it off. While I was working on it, I could see holes that need filling in and spots where elaboration needs to be done. YAY! (Note: Gee, lots of "Yays!" today!)

Also, I just talked to MaryLee a bit ago. She'll be meeting me over at Austin School of Music during my son's music lessons on Tuesday evening! That means that I can get it up to NOA first thing in the morning on Wed. IF FedEx gets it to me Tuesday as planned.

2:35pm—Rachel's has been sent, and I've figured out questions for her (and Kelly)...now on to Anise ☺

4:10pm—Anise's just got sent off!! I still need to work on questions about last year's project.

5:15pm—Been working on stuff around the house. I just sketched out the questions for Anise. (Another "Yay!" needed here? ☺ ) Obviously, it's time to start working on dinner, so I'll be working sporadically on Elaine's. I have looked through her summary and found the spot where it needs addition, though in the summary I'll simply note this.

6:50—Dinner's just about done, and Elaine's summary is on its way!! Just need to think of those questions in a bit, and I'll be way ahead of where I planned to be!! Hers will take a little bit more time, because I want to address some issues that came up as I reviewed messages that went back and forth to her SME.

8:00pm—Just figured out Elaine's questions.

8:55pm—Off to write up the draft msgs to send out to these 4 participants who already sent off their replies to me.

9:20pm—About to head to bed, I've been working most of the day and my eyes hurt! I got Kelly's draft of questions done and ready to be sent out on Wednesday.

A Sample of Kelly's Round #3 which can be found in Kelly's Epal folder of my email:

Here are the questions for Round #3. If you could please get back to me within the next week, I'd sure appreciate it. Remember to please include the questions with your reply.

1. Looking back over the summary of Round #2, is there anything you want to:

\*add?

\*correct?

\*remove?

2. In Round #2, you said, "The students began with a list of questions to ask their spanish epal and most did receive some very interesting answers. I think my student were surprised to find out how different these students were. Many cultural and social differences were mentioned, particularly about music and clothes, were of interest to my students."

\*What are some examples of the first type of questions they asked?

\*When you say "interesting answers," what do you mean by this?

\*What were some of the differences mentioned?

3. In Round #2, you said, "My students were eventually asking thought-provoking questions that allowed them learn a lot more about their epal."

\*What do you mean by "thought-provoking"? Could you give an example?

\*How did you your students "eventually" reach this stage?

4. In Round #2, you said, "Unfortunately, as my students became more accustomed to emailing, they became more apt to use slang terms (cya, etc.) as well as cute email terms (l8r, brb, etc.) which I told them they couldn't use in their epal letters."

\*Why did you not want them to use these types of terms?

\*How is it that as they became "more accustomed to emailing" they "became more apt to use" terms like these?

5. In Round #2, you talked about students who "...were abusing their email privileges and were eventually removed from the program due to inappropriate emails."

\*Could you tell me about this some more?

\*What happened and how was it they were "eventually removed" from the program?

\*Were you able to catch these messages while you did your monitoring and prior to them being sent out to your partner class?

6. In Round #2, you said that you were "...eventually able to trust that most of the students were using appropriate language to their epals."

\*Could you tell me about this some more?

\*How were they able to "eventually" earn your trust?

7. In Round #2, you said, "Other teachers were amazed that we were able to communicate with students from another part of the world. They were very interested in doing the same in their class but no one ever did."

\*How did they hear about this communication?

\*What about this "amazed" them?

\*How would you describe their reasons for not "doing the same in their class"?

Here's my final "Yay!" of the day. Time to put it to bed and say "Job well done!" What a productive day ☺

11:55pm—OkOkOk, so I said I'd put it to bed. I woke up after about an hour's sleep due to a headache. I decided to chip away at the drafts. I got Rachel's and Anise's written up and on hold right now. They're ready to send out on Wednesday morning.

I also got Elaine's summary message bounced back to me with a "transient error" message. Hopefully it'll go through. I don't know if it was due to the attachment or what. I'll look into it more tomorrow.

**--End Journal Entry #90**

**#91 Monday, January 6, 2003**

11am—A bit of chauffeuring this morning, but I was able to work a bit as I waited and get right on my next task when I got home. I just finished the draft message for Elaine's Round #3 of questions. Below is a sample of one of the questions I asked to get her to tell me more about her students' work. I drew from triangulated data (the messages sent to her project list) to develop the question.

4. In Round #2, you said, "The students turned in a written report and drew a picture of either their person or event." Looking back over the msgs on the [civilrights@lyris.ots.utexas.edu](mailto:civilrights@lyris.ots.utexas.edu) list, I've seen the following information. Could you briefly tell me about each?

Out topics are chosen and a few students have started their research! Here is a list of the topics and researchers. I have marked with a \* the lead researcher.

1954 Brown vs. Brown--\*Brian and Thanasi

1955 Rosa Parks---\*Meagan and Mary

1957 Central High --Arkansas--Katie, \*Erin, and Darcy

1957 Garfield High--Seattle--\*Brent and David

1960/1960 Protests--Sit in Movement/Freedom Rides--  
\*Rachel and Emily

1962 James Meredith--Unviersity of Mississippi--\*Joseph  
and Chase

1964/1965 bills--Civil rights 1964/ Voting rights 1965--  
\*Ellen and Laura

Riots: Watts 1965/ Los Angelos 1992--\*Davis and A.J.

Ralph Abernathy--\*Scott and Ryan

Black Panthers--\*Andy and D.J.

Martin Luther King--\*Eric and Logan

There are more questions I'd like to ask based on the project list info, but due to her current health problems (hospitalization for c.m. poisoning and the death of her dad), I decided to limit the number/amount of responses in this round of questioning.

Now that the drafts are done, tasks on hand for today included:

- Reorganizing my notebook of information (that's been rifled through to write summaries and questions.

- Look through pilot study to break some themes into subthemes

- Consider where the new info would fit (tomorrow, I'll work on database entry to type out each person's info. This would help me with determining thematic placement.

- Review sources for ideas for 4 & 5. I just got a good one (also an NI study) that I printed out last night...all 250+ pages of it! Seeing thing, it sure brings home how weighty NI studies can be ;-)

Hopefully, I'll hear from Stephanie and Kate today. I feel pretty good about how things are going now. Lots got done yesterday, I was sure on a roll!

10:30pm—Still no word from them ☹ I nudged by email.

Tomorrow, will call >:<

My notebook is reorganized, I've gotten things set to review themes for subthemes. New info plans after this and sources after that.

Too many distractions today (chauffeur-ing), it was hard to get things done! School starts back for the kids tomorrow ☺ I'm going to really crack the whip to get things done tomorrow!!!!

**--End Journal Entry #91**

### **#92, Tuesday, January 7, 2003**

11:30am—Climbing up the countdown to #100—journal entries, that is! Today's major events will involve developing sub-themes. Next, I'll move on to databasing info recently received, then organizing new info into my raw data file on themes (and the sub-themes I'll be adding).

Earlier today, I reviewed online project work to see what I had on file and that online pages were still active. I made folders for each to hold graphics and project info for triangulation.

This work will help do more fleshing out in #4 as it approaches.



In other news, I went crazy yesterday trying to track the continuation form that Judi was sending back to me. It was finally picked up by 6:10pm EDT. It had been promised that it would get back to me by today at 10:30am. I got it right at 10am!! FedEx saves the day!!

I'll be calling Mary Lee this afternoon to let her know I have it and where to meet for her to sign it.

Piccoli passi! ☺

Oh, and also, checking Kate's project, I need to ask her which things were done by her kids—there's no way to tell on the Web site. I'll touch bases with her on this when I call today. Nudge-nudge-nudge.

1pm—Yay! (for today)...I JUST talked to Kate during her prep period. She says that she handwrote her answers and was going to type them into a Word document to send. She said she has some corrections, etc. for the summary. I told her that she could either change the color for her changes or make the text bold (like Rachel did). Also like Rachel, I told her that she could put her answers to the questions in the same document. She said she'd type them up after lunch and then send it right off!

<sheesh> I should be able to work on coding/summarizing/questions this evening!! I'll be able to get Round #3 to her tomorrow, too. 5 of 6 ☺ Now just Stephanie.

2pm—I tried calling Stephanie at school, but she left early. Will try home later. In the meantime, I've been going through Kate's project, printing out pages and downloading graphics for 6A.

2:45pm—Kate's response came in! It was interesting to see her changes, because a LOT of it was cleaning up her quotes! The original document was modified using color coding that she delineated. The replies to other questions were a tad brief. Coding, etc. tonight!

9:25—I just sent off Kate's summary and made the draft of Round #3 questions. I also got Stephanie's just a bit ago!!! Like me, she had surgery recently! I'll be going through hers and coding it

tonight. First thing in the morning, I'll work on her summary and send out questions along with the others.

Unfortunately, Mary Lee couldn't meet with me tonight. I'll be going up to her office tomorrow afternoon and then running the form over to NOA. Hence the race to finish Stephanie's stuff (I have a meeting from 11am-1, then at 1:30 with MLW).

9:45—Right now, I've made the additions/deletions/corrections as per her request. My eyes are starting to hurt, and I have a headache. Time to take care of myself, I think. I'm just going to *read* through Steph's and then do coding, etc. tomorrow morning between 7am and 10am. At 8am or 9am, I'll be sending off the others' questions.

**--End Journal Entry #92**

**#93 Wednesday, January 8, 2003**

3:55pm—This morning, I started working on Stephanie's summary, I got it done after some trips I had to make. I finished coding and coming up with questions. I'll be sending out the questions in a bit.

I took Stephanie's and added line numbers....I'm going to have to copy the coding to that, so I know line numbers for reference.

Also...Early this morning I sent out the 5 sets of Round #3 questions. Once again, Kelly got back to me a.s.a.p. This is great, BUT, unlike Steph's and some others, her responses are so much on the "skimpy" side <sigh> Dig, dig, dig.

7:30pm—Well, Steph's questions were sent (6 of 6). I've chunked Kelly's #3 and have questions for #4 on hand (handwritten, not as an email draft yet). I did get the continuation form up to NOA this afternoon, around 1pmish.

No more work for tonight...I have to get up REALLLY early to take John to the hospital. I'll be bringing along my computer and files to work on:

- ❖ Updating quotes as per participants' suggestions (esp. Kate's)
- ❖ Sub-themes ideas

- ❖ Dividing current quotes into sub-themes (I'm adding that category to the db, too)
- ❖ Adding Round #2 to the db and deciding what themes they fit within. **DONE**

**--End Journal Entry #93**

**#94, Tuesday, January 7, 2003**

8:45am—I'm at the hospital right now, sitting in the patient room while John's in surgery. I have the table down to set my computer on, and I'm sitting here hard at work.

- ❖ I've updated Kate's info in the database
- ❖ I've added Kate's Round #2 responses to the database.

Now on to Anise...

9:20am—Working on Anise's. A couple of things to check on. First, in her update, she said that she has/had 5 classes of science, NOT 6, but then she's said she's communicated w/ and participated with **6** classes in Australia. **This will need to be another follow-up question to clarify it.**

Next, I have a bit of gray area here on coding. An issue I need to bring to my PD team and maybe check with Judi. Anise traveled to Australia to meet with two of the teachers, and while their with the teacher she had a lot of contact with, they won an award and had a "special tea" provided by parents. *HOW to code this???* *DO I CODE this for the main part, or SHOULD I code it as "After the project" and be done with it, to be adding it to an appendices?*

I'm going to flag this and come back to it later so that I don't obsess on it for too long ☺

3:40pm—Home again since about noon. I've just finished adding Anise's to the d.b. Next is Elaine ☺

4:00pm—Elaine's is done! Next is Kelly's.

4:20pm—Kelly's is done ☺ Looks like 20 minutes per, eh? Rachel next (after a short break).

5:20pm—After a teeny break, I got Rachel's done! Now for the last one...Stephanie. Hers is really long, so I may be breaking it up, meaning how much I get at a time.

7:18pm—After dinner, I started working on Steph's—I'm done!

Okay. So it's been a busy day!  
I've also printed out another sample dissertation to look over. Yep, qualitative dissertations ARE thicker than thick! I can see mine heading that way, too.

**--End Journal Entry #94**

## **Appendix J: Samples of Peer Debriefing Communications**

### ***Minutes from Peer Debriefing Meetings***

#### **#1 11/29/02 Meeting**

##### Lynda

- L.A. brought up questions about the consent form and getting it set up. C.G. and I helped her with this.
- L.A.'s also hoping for her first round of interviews the next couple of weeks. She wants three done by next week.

##### Courtney

- C.G. has turned in corrections to Dr. M. and is waiting for DRC "OK"
- C.G. pondered rewriting chapter 3. Through discussion, L.A. suggested that C.G. explain her paradigm points and also explain its relation to the study. LW concurred
- C.G. discussed participants in her study. One man didn't want to participate in the interview part said that he would allow use of his postings. Another participant said the same thing. She is still waiting for 8 people to reply to her request for interview or to allow her to use postings. She's also looking for a 9<sup>th</sup> person that was in the class, but whose e-mail address from the class is inactive. She's also going to ask the other respondents if they know of contact info on the 8 people who haven't replied.
- C.G. & the DRC...she relayed problems with "inane questions" that need to be answered.
- C.W. is still waiting for site approval.

##### Laurie

- Shared info about defense dates: One committee member (also on Lynda's) told me that she needs to have the time prior to 3pm and suggested dates June 2 and June 16. I shared that I'm still waiting for the other replies.
- Shared that I had sent out my 2<sup>nd</sup> "continuing participation" consent forms. Two of the 6 got back to me to date.
- We discussed this year's AERA and plans for attending. I need to renew my membership!!!! ACK!
- Shared info about the "continuing study" for due to the IRB. I have to get Judi's and Mary Lee's signatures. I'll be FedExing the form overnight to Judi.

**NO MEETING THE NEXT TWO WEEKS—Communicate online!**

## **#2 3/4/03 Meeting**

Issue Day!

-issues around the length of Chapter 4

PANIC!!!!!!!

### Lynda

- We discussed the length of L.A.'s profiles. The one she shared seemed a bit long. C.G. and I made suggestions about cutting down the length of profiles and suggested she be brief, and if she still wants to, put full profile in the appendix.
- Suggested we send our drafts to Judi "priority mail"

### Courtney

- C.G. feels like she's spinning wheels. All that data! She's working to try to find a focus. Because she's working on different ideas, she's going to wait on sending her latest idea file to Judi.
- C.G. put in actual names of sites (e.g. Tapped In) She's holding off to make a decision about whether to change or leave them alone.

### Laurie

- Shared that I'm looking throughout to be sure that I use standard forms of names, in quotes and text (e.g. Web vs. web; KIDLINK vs. KidLink).
- We discussed ways we were constructing our arguments.  $A+B=C$  or  $C=A+B$ . We're all doing it the first way. We agreed that we like the "punch" of leading to argument, building the case.
- We discussed how we're choosing our quotes. I shared that while I'm using good quotes in 4, I'm saving others for 5. I'll also be double-checking to see that I don't use the same exact quote in both.

## **Samples of E-mail Communication**

### **#1 Message from Lynda 2/25/03.**

Subject: Re: Yay...just one more case study!

Courtney writes:

>Congrats Laurie--wish I was there (or that far along)!

Yeah -- me, too! But I'm getting there!

>Actually seeing

>the crippled happy dance might have been as entertaining as watching

>Louie try to run on the ice.

LOL -- too funny!

>

>It sounds like it ain't going to be much better tomorrow and that we are

>all moving and a'grooving in the directions we need. Honestly I can live

>without meeting this week if y'all can. In fact, I'm probably better off

>pushing myself to begin turning extreme outlines into prose tomorrow.

>

>Would that work?

Sure -- I certainly can use every moment of work time I can get, and I want us

to be CAREFUL out there! (Yeah -- the weatherman on Channel 8 said that they were expecting maybe more freezing drizzle tomorrow morning, and that it was unlikely to melt before noon.)

So -- I'm with you fellers. (quoting Tim Blake Nelson in "O Brother Where Art

Thou?") Whatever you think is good works for me. I keep hoping I'm going to

get to a point SOON (like by next Tuesday) when I've got the chapters really

taking shape and ready to go off for a first pass.)

;}

Lynda

**#2 Message from Courtney 3/8/03.**

I feel for you! I think that my demons were more in the area of analysis and am thankful that I can get away with only a chapter 4. Sucks to be constructivist. :)

Actually, I'm happy to be writing this weekend since I told Lynda that I didn't really want to read her chapter 4 until she had 5 finished. Her 4 weighed in at 175 pages and I figure a lot of that needs to go as support for 5. I didn't really want to read it when I know she has to do another pass. She's aiming to have it for me on Tuesday, but I think she's really taking Judi to heart that she wants to see a good draft not a first draft. I think this is hard for Lynda because she's only ever written up constructivist research.

I'm heading to the Barnes & Noble on Brodie tomorrow for a long session.

I'll have an extra chair for you if you want to escape or need any peer pressure (or support, yeah support).

Luck on the "back 6"  
Court

Laurie Williams wrote:

- > Hey ladies,
- > Don't know how you 2 are doing, but I'm about to go cross-eyed and
- > crazy! I'm just about finished with my 3rd of 9 themes. It's taking me
- > forever!! My goal for tonight is to try to get 5 themes done...and work
- > on the other 4 and summaries of each tomorrow. Hopefully chapter 5 >will be done by Monday at the latest!
- > I'm about to take a break, play with the dogs, feed the dogs, do
- > some laundry and get away from the computer.
- > It looks like it's going to be tough getting this to Judi by the end
- > of next week. We'll see, eh?
- > Hope you 2 are plowing through okay.
- >
- > Enjoy tomorrow ;-) Hey, and what's left of today, too :-D
- >
- > Laurie



## Appendix K: Samples of Themes

### #1 Themes as of 1/12/03

#### **Theme #1: COMMUNICATING WITH OTHERS**

This theme explores the communication that occurs during a telecollaborative project. Communication with others is one of the key facets that distinguishes this type of project from other kinds of online projects such as teleresearch.

##### **Sub-themes:**

- a. **Teacher to Teacher** (this name needs to change). This describes the kinds of online communication that goes on behind the scenes between the adults involved in the project (teachers, parents, mentors, project managers).
- b. **Student/Adult** (this name needs to change). This describes the kinds of online communication that goes on between the students in the project and the adults involved in the project.
- c. **Students to Students** (this name needs to change). This describes the kinds of online communication that goes on between the students in the project.
- d. **Difficulties in Communication** (not sure if this one should go here or in *Trials & Tribulations*) This describes troubles the participants in the study had with communication
- e. **Improving Levels of Communication** This describes what some research participants felt needed to happen to overcome communication difficulties.

#### **Theme #2: CROSSING BORDERS**

This theme explores the how participating in the project opened up new vistas for participants and their classes.

**Sub-themes:**

- a. **Heightened Awareness** This describes how participating in the project heightened the general awareness of individuals. (more needed on this definition)
- b. **Finding Similarities** This describes the kinds of similarities individuals discovered about each other as they participated in projects.
- c. **Appreciating Differences** This describes the cultural differences individuals learned about during the course of the project.

**Theme #3: INFORMING OTHERS**

This theme describes ways that participants let others know about their experiences in online projects.

**Sub-themes:**

- a. **Spreading the Word to Grade Level Teams** This describes how participants tried to share their online project news with peers on their grade level teams and the reactions they received.
- b. **Sharing Information Campus-wide** This describes participants experiences informing others on campus (e.g. students in other classes, teachers, administrators) and the reactions they received
- c. **Getting Information Out Into the Community** This describes participants' experiences in trying to inform others in the school community (e.g. students' families) and the reactions they received.

**NOTE: B & C need some fine-tuning.**

**Theme #4: LEARNING AS WE GO**

This theme explores the different kinds of learning that occurred as a process of taking part in the online project.

**Sub-themes:**

- a. **Student Learning** (title needs tweaking). This describes the learning that occurred as students participated in the project

- b. **Teachers Learning** This describes participants' learning that came about as a result of participating in the project.

**Theme #5: MOTIVATION & ENRICHMENT**

This theme deals with how participants felt that participating in the project was motivating and enriching, especially based on the effects that it had on them, their students, and others.

**Sub-themes:**

- a. **Motivation & Enrichment from Effects on Students** (title needs tweaking). This describes the ways that project participation effected students.
- b. **Motivation & Enrichment from Effects on Teachers** (title needs tweaking). This describes ways that the project had an effect on the teachers.
- c. **Motivation & Enrichment from Effects on Others** (title needs tweaking). This describes how others reacted to project participation

**Theme #6: PROJECTS AS AN INTEGRAL PART OF THE CURRICULUM**

This theme describes how teachers found their projects more than just "add-on" activities.

**Theme #7: SNOWBALLING**

This theme explores how projects mushroomed, becoming more than what teachers expected at first or spilling over into other parts of the curriculum.

**Theme #8: TEACHER SUPPORT**

This theme centers on the support available for teachers and students as they integrate online projects.

**Sub-themes:**

- a. **Formal Training** This describes professional development opportunities available to teachers as a form of support.
- b. **Informal Support** This describes ways teachers found support from unexpected sources.
- c. **Online Support** This describes the support teachers found online during their projects.
- d. **Supporting Others** This describes the support that participants provided to others during the course of their projects.

**Theme #9: TRIALS & TRIBULATIONS**

This theme focuses on the obstacles and conflicts that participants faced during the course of the project.

**Sub-themes:**

- a. **Time as a Project Obstacle** This describes the ways that time factors impede the progress of projects.
- b. **School Policies as a Project Conflict** This describes ways that school and district policies become project obstacles.
- c. **Technical Difficulties** This describes difficulties teachers had with technology.
- d. **Lack of Communication** This describes how lack of communication can be an obstacle to project success.
- e. **Outside Factors Influencing Project Progress** This describes issues and occurrences outside of the teacher's control and beyond school that impede progress of projects.
- f. **Internal Factors Influencing Project Progress** This describes issues and occurrences within the teacher's control that impede progress of projects.

## **#2 Themes as of 3/3/03**

("Monarch Notes" version sent to Peer Debriefing Team for Feedback.)

The plan is to organize chapter 5 in 3 sections:

### **Section 1: ONLINE PROJECTS AS PART OF THE CURRICULUM**

These themes all relate to the curricular connection of projects: how they are implemented; how they evolve; classroom learning (students & teachers); how others are made aware of what is happening in the participants' classrooms.

Theme 1: Interweaving Online Projects into the Curriculum

Theme 2: Learning as We Go-Participant Learning

Theme 3: Informing Others-Telling Others About Online Projects

### **Section 2: COMMUNICATION EFFECTS OF ONLINE PROJECTS**

Telecollaborative/telecooperative projects are distinguished by the communication involved between participants in the projects. The two types here focus on the different levels of communication among those in the projects and reaching beyond the borders of the classroom, finding out more about others through communication.

Theme 4: Communicating with Others Online

Theme 5: Crossing Borders-Effects of Reaching Beyond the Classroom

to Communicate

### **Section 3: INFLUENCES ON ONLINE PROJECTS**

These themes are related to factors that have influence on project participation: the support that is available before, during and after the project; obstacles that crop up during the process; motivation and enrichment that spur participation.

Theme 6: Teacher Support

Theme 7: Trials and Tribulations

Theme 8: Project Impact on Motivation & Enrichment

## **Appendix L: Afterword**

Participants in this study took part in their first projects during the 2001-2002 school year. During the course of our interviews, the teachers shared information about things that occurred after their projects were done and information about project participation in the 2002-2003 school year.

### ***Anise Becomes a "Travel Buddy"***

Anise was the Missouri teacher who integrated Oz-TeacherNet's Travel Buddy project as her first online project. During her interaction with Australian teachers, she communicated frequently with two of them and that developed into online friendships. Working behind the scenes with her Australian partner, Jay, in the development of additional classroom projects, they found that they had similar teaching styles and philosophies about teaching. In our first interview, Anise told me that this connection with Jay led to another idea about working together.

We've even talked about him coming over here and teaching for a few weeks and me going over there and teaching for a few weeks. That would be really fascinating.

Based upon this discussion with Jay and a similar discussion with another Australian teacher, Anise packed her bags at the end of the school year and flew to Australia for a visit. While there, she

visited Jay in Queensland, staying with him and his family and visiting his school.

It was very nice and he and his students were as thrilled as I was to be there. The school did a presentation for me and Jay and I were awarded the Principal's Award for the week for our international correspondence. All of the people were just wonderful. Parents even came to a special tea that they had for me.

After visiting the school, Jay took me to the Australia Zoo to see the home of Steve Irwin. Unfortunately, Steve wasn't there (he was out promoting his movie *The Crocodile Hunter* here in the States). One of the reasons that Jay took me to the Zoo was because of the travel cards that we had created. He was trying to set something up with the Zoo to market the cards for kids to learn more about the different animals located in the zoo.

The other teacher Anise visited was in Surfer's Paradise, Queensland. Anise found that school to be similar in size and the maturity level of the students was similar to her students. "This is probably due to the fact of a larger city." She also found teachers to be a lot like teachers at her school—"same types of complaints as what I hear at home." This trip was not as organized as the other one, but she still felt the overall trip was successful, "...a wonderful experience," and she hopes to get back to Australia in 2003. She thought that both teachers were "...very nice and were willing to welcome me into their homes."

During the 2002-2003 school year Anise decided to integrate the *Travel Buddies* project again. In the fall, she and her students

sent out their "Mikey" travel buddy. In January, she was waiting for him to return so that she could send him out again, including another doll that they name "Michelle." Anise said, "I hope to turn her into a doll as well to send out on similar adventures." She has also kept up her online connection with Jay, "and there is a possibility of collaborating this term."

### ***Kate Tries It Again***

When Kate's *Active Living* project finished, she felt confident to try a similar project the next school year. In the fall of 2002, the 2Learn.ca super users on her campus introduced a new online project entitled *Kidmath*.

In this project, the grade sixes are using Netscape Composer to develop their own web pages. These pages will include math problems, Power Point presentations of math in every day life, Excel graphs, Inspiration webs of the relationships between fractions, decimals and percents, and Word Documents.

Kate also incorporated use of a digital camera and a photo editing software in the project and used e-mail as a way for students to communicate with each other during the project. She explained that she was "able to e-mail my students assignments and have made a PowerPoint presentation to outline an assignment. The teaching of these programs is done by me with some help from the 2learn support teachers."



***Elaine and Kelly—Not Now...***

Elaine and Kelly are both 5<sup>th</sup> grade teachers who incorporated a project into their classrooms in 2001-2002. Elaine's class worked with an Electronic Emissary telementor, while Kelly integrated ePALS into her social studies class. Interestingly, though both teachers thought their projects helped to enhance the curriculum and to expand their students' viewpoints, neither teacher opted to take part in an online project the next school year.

Kelly ended her ePALS project saying that she would be "very excited to try another online project." Unfortunately, she felt that incorporating an online project would work better "perhaps with a smaller group," and she said that she would be "willing to try another project in the future." At this time, however, she has no plans to do so.

Elaine had hoped to take part in Electronic Emissary with her next group of students in the new school year, but there were no telementoring opportunities available during 2002-2003 due to changes taking place in program. Elaine also stated she was "unaware of any [other] online projects."

### ***Rachel Takes a Giant Step Forward***

During her first foray into integrating online projects in the classroom, Rachel tackled two projects, KIDPROJ's *Grandmother and Me* project and the *Monster Exchange* project. In 2002-2003, Rachel made giant strides in terms of incorporating online projects. She had originally introduced projects to two groups of students—second graders and third graders. In the new school year, each grade level of students participated in online projects.

I'm working on projects with each of the grades I teach. First graders are participating in *Draw A Story For Me* and also the *International Alphabet*. Second graders are doing *Grandmother & Me* and also *Idiomatic Expressions*. Third graders, fourth graders, and the fifth grade math club are doing *What is My Number?* Fifth graders are participating in *Who Am I?* (1<sup>st</sup> module) Fourth graders did *Who Am I?* (2<sup>nd</sup> module). Various grades are making submissions to *WordWeavers*.

Besides taking part in these projects with her students, Rachel is also the designer and moderator of *WordWeavers*.

In the fall of 2002, Rachel stepped forward and volunteered to become an assistant manager of KIDLINK. She also is facing another first in 2003 when she gives her first presentation at a national computer conference on the topic of integrating online projects into the classroom.

### ***Stephanie Becomes a Turnkey and Tackles More Projects***

Prior to 2001, Stephanie was very leery about having computers in the classroom. She felt that money would be better spent on textbooks and other materials. Then in the 2001-2002 school year she was tapped to be the grade level representative from her school taking part in a new district-wide initiative to encourage teachers to take part in online projects. She and a group of other first grade teachers were given the task to develop an online project for the district's first grade students. Stephanie felt that their initial efforts to do this were not good enough to share with other teachers. Hence, she made the decision to take part in online projects to get a hands-on experience about integrating a project like this so that she would have first-hand knowledge of the experience. She could then use what she learned in order to develop a project. She also felt that this experience helped her be more knowledgeable as a turnkey to help others incorporate online projects.

The District-wide Technology Co-coordinator arranged for the original committee of First Grade teachers to be paid for two days of computer curriculum work over the summer. We juggled schedules and were able to find two days to meet when everyone was available. During these two days, our task was to rewrite the Monster Exchange project and develop another computer project, both of which would require mandatory participation for all First Grade teachers District-wide during the 2002-2003 school year.

Having done the projects myself, it was very clear that we needed to do for the teachers across the District what had

been done for me. We needed to remove, or make as simple as possible, the technical part of the project therefore allowing the teachers to focus on the creative, educational piece. I was confident that if teachers were allowed to see the level of learning that would take place and were not weighed down with the technical aspects of the projects, then they would become as excited by this new way of learning as we had.

Because it had been so helpful to me to have colleagues to talk to with as I worked on the project, we decided to design our own version of the *Monster Exchange* site, called "Monster Madness," which paired classes within our District as Buddies. We hoped that this would make communication easier and the project less daunting, as well as increase the "critical mass" of enthusiasm about learning via technology throughout our District.

The project that Stephanie and her cohorts developed was implemented in the fall of the following year. Besides taking part in *Monster Madness*, Stephanie incorporated several other projects and has been using the school's Internet access for research activities for both her students and herself.

In the 2002-2003 school year I have participated in the following projects to date: "What's for Lunch?", "Monster Madness," and "Winter Poems." I plan to participate in "That's What Happens When It's Spring," "Monster Exchange" and "Tooth Tally." In addition, I use the Internet in my classroom on a regular basis to chart the change in times of "Sunrise and Sunset" as well as for miscellaneous teacher research.

## References:

- Asayesh, G. (1993). Staff development for improving student outcomes. *Journal of Staff Development*, 14(3), 24-27.
- Becker, H. J. (1998). *Internet use by teachers: Conditions of professional use and teacher directed student use*. Center for Research on Information Technology and Organization, University of California, Irvine and University of Minnesota. Retrieved March 6, 2001, from <http://www.crito.uci.edu/tlc/findings/Internet-Use/startpage.htm>
- Becker, H. J. & Rivets, J. (1999). The influence of computer and Internet use on teachers' pedagogical practices and perceptions. *Journal of Research on Computing in Education*, 32(4), 356-384.
- Berg, S., Benz, C. R., Lasley, T. J., & Raisch, D. (1998). Exemplary technology Use in elementary classrooms. *Journal of Research on Computing in Education*, 31(2), 111-121.
- Bonk, C., Ehman, L., Hixon, E., Yamagata-Lynch, L. (2002). The pedagogical TICKIT: Web conferencing to promote communication and support during teacher professional development. *Journal of Technology and Teacher Education*, 10(2), 205-233.
- Brookfield, S.D. (1990). Discussion. In Galbraith, M.W. (Ed.) *Adult Learning Methods*. (pp. 187-204). Malabar, FL: Robert E. Krieger Publishing Co.
- Burge, L. (1988). Beyond andragogy: Some explorations for distance learning design. *Journal of Distance Education/Revue*. Retrieved April 6, 2001, from <http://cade.athabascau.ca/vol3.1/burge.html>
- Brown, C. A. (1999). From the what and why to the how of course support systems-The value of the teachers' perspective. *International Journal of Educational Telecommunications*, 5(4), 361-385.

- Cattagni, A., & Westat, E.F. (2001). Internet access in U.S. public schools and classrooms: 1994-2000. *National Center for Education Statistics*. Retrieved April 10, 2003, from <http://nces.ed.gov/pubs2001/2001071.pdf>
- Center for Improved Engineering and Science Education. (2001). *Internet safety for students and teachers*. Retrieved April 28, 2003, from <http://www.k12science.org/internetsafety.html>
- Chiero, R. T. (1997). Teachers' perspectives that affect computer use. *Journal of Research on Computing in Education*, 30(2), 133-145.
- Collins, A. (1996). Whither technology and schools? Collected thoughts on the last and next quarter centuries. In Fisher, C., Dwyer, D. C., & Yokam, K. (Eds.) *Education & Technology: Reflections on Computing in Classroom*. (pp. 51-65). San Francisco: Jossey-Bass.
- Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, 38(4), 813-834.
- Culp, K.M., Hawkins, J., & Honey, M. (1999). Review paper on educational technology research and development. *Center for Children & Technology*. Retrieved June 17, 2002 from [http://www2.edc.org/CCT/cctweb/public/include/pdf/01\\_1999.pdf](http://www2.edc.org/CCT/cctweb/public/include/pdf/01_1999.pdf)
- Daley, B. J., (1999). Novice to expert: An exploration of how professionals learn. *Adult Education Quarterly*. 49(4), 133-147.
- Daloz, L.A.P. (1996). Mentorship. In Galbraith, M.W. (Ed.) *Adult Learning Methods*. (pp. 205-224). Malabar, FL: Robert E. Krieger Publishing Co.
- David, J. L. (1996). Developing and spreading accomplished teaching: Policy lessons from a unique partnership. In Fisher, C., Dwyer, D. C., & Yokam, K. (Eds.) *Education & technology: Reflections on computing in classroom* (pp. 237-250). San Francisco: Jossey-Bass.

- Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In Denzin, N. K. & Lincoln, Y. S. (Eds.) *Qualitative research & evaluation methods* (2nd ed., pp. 1-28). Thousand Oaks, CA: Sage.
- Dirks, M. (1997). Problems, philosophy, and motivation: Trail blazing instructors for the digital frontier. *Journal of Educational Computing Research*. 7(1),47-65.
- DuFour, R. (2001). In the right context: The effective leader concentrates on a foundation of programs, procedures, beliefs, expectations, and habits [Electronic Version]. *Journal of Staff Development*. 22(1). Retrieved April 23, 2002, from <http://www.nsd.org/library/jds/dufour221.html>
- Durrington, V.A., Beichner, R.J., Titus, A., & Valente, T.W. (2000). Using social network analysis to examine the time of adoption of computer-related service among university faculty. *Journal of Research on Computing in Education*, 33(1), 16-27.
- Dusick, D. (1998). What social cognitive factors influence faculty members' use of computers for teaching? A literature review. *Journal of Research on Computing in Education*, 33(1), 123-137.
- Dwyer, D. (1994). Apple classrooms of tomorrow: What we've learned. *Educational Leadership*. 51(7).
- Ely, M., Vinz, R., Downing, M., & Anzul, M. (1999). *On writing qualitative research: Living by words*. Washington, D.C.: The Falmer Press.
- Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). *Doing naturalistic inquiry*. Newbury Park, CA: Sage.
- Fabry, D. L. & Higgs, J. R. (1997). Barriers to the effective use of technology in education: Current status. *Journal of Education Computing Research*, 17(4), 385-395.
- Fullan, M. (2002). The change leader. *Educational Leadership*. 59(8), 16-20.

- Gonzales, C. L., & Thompson, V. (1998). Reciprocal mentoring in technology use: Reflecting with a literacy educator. *Journal of Information Technology for Teacher Education*, 7(2), 163-164.
- Greene, K. (2000). Machiavelli for the new millennium. *Converge*. Retrieved February 10, 2001, from <http://www.convergemag.com/Publications/CNVGFeb00/DigitalTweed/DigitalTweed.shtm>
- Guba, E. G. & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.
- Guskey, T., & Sparks, D. (1996) Exploring the relationship between staff development and improvements in student learning. *Journal of Staff Development*. 17(4). Retrieved March 1, 2001, from [http://www.nsd.org/library/jsd/f\\_gusky.html](http://www.nsd.org/library/jsd/f_gusky.html)
- Hanson, A. (1996). The search for a separate theory of adult learning: Does anyone really need andragogy?. In Edwards, R., Hanson, A., & Raggatt, P. (Eds.) *Adult Learners, Education and Training 1: Boundaries of Adult Learning*. (pp. 99-108). New York, NY: The Open University.
- Harris, J. (1993). Mining the Internet: Using Internet know-how to plan how students will know. *The Computing Teacher*. 8(20), 35-40.
- Harris, J. (1999). First steps in telecollaboration. *Leading & Learning with Technology*. 27(3), 54-57.
- Harris, J. (2000). Taboo topic no longer: Why Telecollaborative projects sometimes fail. *Leading & Learning with Technology*. 27(5), 58-61.
- Harris, J. (2002). Wherefore art thou, telecollaboration? *Leading & Learning with Technology*. 29(6), pp. 54-59.
- Harris, J. & Grandgenett, N. (2002). Teachers' authentic e-learning. *Leading & Learning with Technology*. 30(3), 54-58. Retrieved April 28, 2003, from <http://www.iste.org/LL/pdfs/30345h.pdf>



- Hase, S. & Kenyon, C. (2000). From andragogy to heutagogy [Electronic Version]. *ultiBASE*. Retrieved March 28, 2001, from <http://ultibase.rmit.edu.au/Articles/dec00/hase2.htm>
- Hawkins, J. (1996). Dilemmas. In Fisher, C., Dwyer, D. C., & Yokam, K. (Eds.) *Education & technology: Reflections on computing in classroom* (pp. 35-50). San Francisco: Jossey-Bass.
- Henson, K. T. (1987). Strategies for overcoming barriers to educational change. *NASSP Bulletin*. 71(497), p. 125-127.
- Honey, M. & Culp, K.M. (1996). Case Studies of K-12 Educators' Use of the Internet: Exploring the Relationship Between Metaphor and Practice. *Center for Children & Technology*. Retrieved June 17, 2002 from [http://www2.edc.org/CCT/cctweb/public/include/pdf/05\\_1996b.pdf](http://www2.edc.org/CCT/cctweb/public/include/pdf/05_1996b.pdf)
- Hunter, B. (2001). Against the odds: Profession development and innovation under less-than-ideal conditions. *Journal of Technology and Teacher Education*. 9(4), 473-496.
- International Society for Technology Education. (2000a). *ISTE NETS Essential Conditions for Teacher Preparation*. Retrieved February 19, 2001, from <http://cnets.iste.org/essential.html>
- International Society for Technology Education. (2000b). *Technology foundation standards for all students*. Retrieved December 14, 2000, from <http://cnets.iste.org/sfors.htm>
- Knowles, M. (1996). Andragogy: An emerging technology for adult learning. In Edwards, R., Hanson, A., & Raggatt, P. (Eds.) *Adult Learners, Education and Training 1: Boundaries of Adult Learning*. (pp. 82-98). New York: The Open University.
- Kromhout, O. M. & Butzin, S. M. (1993). Integrating computers into the curriculum: An evaluation of nine project child model schools. *Journal of Research on Computing in Education*. 26(1), 55-69.
- Kumari, S. (1998). Teaching with the internet. *Journal of Information Technology for Teacher Education*, 7(3), 353-377.

- Kurshan, B. (1990). Educational telecommunications connections for the classroom--Part 2. *The Computing Teacher*. 17(7), 51-53.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage
- Lincoln, Y. S. & Guba, E. G. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In Denzin, N. K. & Lincoln, Y. S. (Eds.) *Qualitative research & evaluation methods* (2nd ed., pp. 163-189). Thousand Oaks, CA: Sage.
- Llorens, S., Salanova, M., & Grau, R. (2003). Training to technological change. *Journal of Research on Technology in Education*, 35(2), 206-212.
- Marcinkiewicz, H.R. (1993) Computers and teachers: Factors influencing computer use in the classroom. *Journal of Research on Computing in Education*. 23(2), 220-237.
- McCullen, C. (2002). Professional development: It's about time. *Technology & Learning*. 22(8), 48-50.
- McGee, P. A. (1998). *Unintentional professional development in curriculum based K-12 telementoring projects*. Unpublished Dissertation, The University of Texas, Austin. Retrieved April 4, 2003, from [http://emissary.ots.utexas.edu/emissary/publications/McGee\\_1998.pdf](http://emissary.ots.utexas.edu/emissary/publications/McGee_1998.pdf)
- McKenzie, J. (2001). How teachers learn technology best. *From Now On: The Educational Technology Journal*. 10(6). Retrieved March 20, 2001, from <http://fno.org/mar01/howlearn.html>
- Mioduser, D., Nachmias, R., Lahav, O., & Oren, A. (2000). Web-based learning environments: Current pedagogical and technological state. *Journal of Research on Computing in Education*, 33(1), 55-76.
- Mouza, C. (2003) Learning to teach with new technology: Implications for professional development. *Journal of Research on Technology in Education*, 35(2), 272-289.

- Murphy, K.L., Drabier, R., & Epps, M.L. (1998). A constructivist look at interaction and collaboration via computer conferencing. *International Journal of Educational Telecommunications*, 4(2/3), 237-261.
- National Center for Education Statistics. (2000a). *Teachers' tools for the 21<sup>st</sup> century*. Retrieved March 3, 2001, from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2000102>
- National Center for Education Statistics. (2000b). *Teachers Use of Computers and the Internet in Public Schools*. Retrieved January 25, 2001, from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2000090>
- National Education Agency. (2002). *Learning: Tips for the Wired Classroom*. Retrieved April 28, 2003, from <http://www.nea.org/neatoday/0204/bits.html>
- New York State Education Department. (1996). *Language Standards for English Language Arts*. Retrieved April 3, 2003, from <http://www.emsc.nysed.gov/ciai/ela/elastandards/elamap.html>
- Office of Educational Technology. (November, 1997). *Parents guide to the Internet*. Retrieved April 28, 2003, from <http://www.ed.gov/pubs/parents/internet>
- Office of Educational Technology. (November, 2000). *Progress report on educational technology: State-by-state profiles*. Retrieved January 25, 2001, from <http://www.ed.gov/Technology>
- Office of Human Research Protections. (2002). *Policy and assurances*. Retrieved September 18, 2002, from <http://ohrp.osophs.dhhs.gov/polasur.htm>
- Office of Technology Assessment. (1995a). *Education and technology future visions*. Publication No. OTA-BH-EHR-169. US Government Printing Office. Retrieved December 7, 2000, from <http://www.ota.nap.edu/pdf/1995idx.html>
- Office of Technology Assessment. (1995b). *Teachers and technology: Making the connection*. Publication No. OTA-BH-EHR-616. US Government Printing Office. Retrieved December 7, 2000, from <http://www.ota.nap.edu/pdf/1995idx.html>

- Owen, T. (1990). Telecommunications in the classroom. Waiting to connect: The writer in Electronic Residence. *The Computing Teacher*. 17(5), 46-49.
- Page, M.S. (1999). Perils and promises: Using the internet in american education. *Information Technology in Childhood Education*, pp. 77-99.
- Painter, S. R. (2001). Issues in the observation and evaluation of technology integration in K-12 classrooms. *Journal of Computing in Teacher Education*. 17(4), 21-25.
- Porter, B. (2003). Technology planning: Strategies for stoking the catalysts of change. *Leading & Learning with Technology*. 30(6), 6-13.
- Patton, M.Q. (2002). *Qualitative research & evaluation methods* (3<sup>rd</sup> ed.). Thousand Oaks, CA: Sage.
- Reilly, B. (1996). New technologies, new literacies, new problems. In Fisher, C., Dwyer, D. C., & Yokam, K. (Eds.) *Education & technology: Reflections on computing in classroom*. (pp. 203-220). San Francisco: Jossey-Bass.
- Riel, M. (1992). Telecommunications: Avoiding the black hole. *The Computing Teacher*. 20(4), 16-17.
- Rogers, A., Andres, Y., Jacks, M. & Clausen, T. (1990). Telecommunications in the classroom: Keys to successful telecomputing. *The Computing Teacher*. 17(8), 25-28.
- Rogers, E. (1995). *Diffusion of innovations*. (4th ed.). New York: The Free Press.
- Ronnkvist, A.M., Dexter, S.L., and Anderson, R.E. (2000) *Technology support: In depth, breadth, and impact in american schools*. Center for Research on Information Technology and Organization, University of California, Irvine and University of Minnesota. Retrieved March 4, 2001, from <http://www.crito.uci.edu/tlc/findings/technology-support/startpage.htm>

- Ryan, G.W. & Bernard, H. R. (2000). Data management and analysis methods. In Denzin, N. K. & Lincoln, Y. S. (Eds.) *Qualitative research & evaluation methods* (2nd ed., pp. 769-802). Thousand Oaks, CA: Sage.
- Sandholtz, J. H. & Ringstaff, C. (1996). Teacher change in technology rich classrooms. In Fisher, C., Dwyer, D. C., & Yokam, K. (Eds.) *Education & technology: Reflections on computing in classroom* (pp. 281-299). San Francisco: Jossey-Bass.
- Scheffler, F.L. & Logan, J. P. (1999). Computer technology in schools: What teachers should know and be able to do. *Journal of Research on Computing in Education*, 31(3), pp. 305-326.
- Schwandt, T.A. (1997) *Qualitative inquiry: A dictionary of terms*. Thousand Oaks, CA: Sage.
- Sherry, L. (2000). The nature and purpose of online discourse: A brief synthesis of current research as related to the web project. *International Journal of Educational Telecommunications*. 6(1), 19-51.
- Starkweather, K.N. (2002). ITEA/Gallup poll: Interpreting what others think of technology teaching. *The Technology Teacher*. 61(8), 31-33.
- Stuhlman, J. M. & Taylor, H. G. (1998). Analyzing the impact of telecommunications on learning outcomes in elementary classrooms. *Journal of Computing in Childhood Education*, 9(1), 79-92.
- Umbach, K. W. (1998). Learning-related outcomes of computer technology in K-12 education. *California Research Bureau*. Retrieved April 10, 2003, from <http://www.library.ca.gov/crb/98/10/98010.pdf>
- United Nations Educational, Scientific and Cultural Organization. (2002). *Information communication technologies in teacher education*. Retrieved March 12, 2003, from <http://unesdoc.unesco.org/images/0012/001295/129533e.pdf>

- U.S. Congress Web-based Education Commission. (2000). *The power of the Internet for learning: Moving from practice to promise*. Retrieved March 2, 2001, from <http://www.ed.gov/offices/AC/WBEC/FinalReport/>
- Waugh, R. & Godfrey, J. (1995). Understanding teachers' receptivity to system wide educational change. *Journal of Educational Administration*. 33(3), 38-54.
- Wells, J.G. & Anderson, D. K. (1997). Learners in a telecommunications course: Adoption, diffusion, and stages of concern. *Journal of Research on Computing in Education*, 30(1), 83-105.
- Williams, L. (2003, February). *Finding the perfect fit: Integrating technology into the classroom*. Paper presented at the meeting of the Oklahoma Technology Association/Bartlesville Public Schools Curriculum/Technology Conference, Bartlesville, OK.
- Williams, L. & Boehm, D. (1998, October). *Finding the perfect fit*. Paper presented at the meeting of Global Learning in the 21<sup>st</sup> Century, Copenhagen, Denmark.
- Willis, J. (1992). Technology diffusion in the "soft disciplines": Using social technology to support information technology. *Computer in the Schools*. 9(1).
- Windschitl, M. (1998). The WWW and classroom research: What path should we take? *Educational Researcher*. 27(1), 28-33.
- Windschitl, M. & Sahl, K. (2002). Tracing teachers' use of technology in a laptop computer school: The interplay of teacher beliefs, social dynamic, and institutional culture. *American Educational Research Journal*. 39(1), 165-205.
- Wolcott, L. & Betts, K. (1999). What's in it for me? Incentives for faculty participation in distance education. *Journal of Distance Education/Revue*. Retrieved April 6, 2001, from [http://cade.athabasca.ca/vol14.2/wolcott\\_et\\_al.html](http://cade.athabasca.ca/vol14.2/wolcott_et_al.html)
- Yoder, M. B. (2003). Seven steps to successful online learning communities. *Leading & Learning with Technology*. 30(6), pp. 14-21.

- Young, E.B. (1991). Empowering teachers to use technology in their classrooms. *Computers in the Schools*, 8(1/2/3), 143-145.
- Zammit, K., Nanlohy, P., & Corrigan, G. (1999). Integrating on-line learning: A first attempt to integrate the Internet into a teacher education core curriculum subject. *ultiBASE*. . Retrieved March 28, 2001, from <http://ultibase.rmit.edu.au/Articles/aug99/zammit1.htm>
- Zammit, S.A. (1992). Factor facilitating or hindering the use of computers in schools. *Educational Research*, 34(1), 57-66.
- Zhang, Y. & Espinoza, S. (1997). Affiliations of computer self-efficacy and attitudes with need for learning computer skills. *Journal of Educational Computing Research*, 17(4), 371-383.

## **Vita**

Laurie Cameron Williams was born in Landstuhl, Germany on November 10, 1955, the daughter of Joan Russell Hargrave and James Quincy Hargrave. As a military family, the Hargraves moved several times prior to finally settling in El Paso, Texas in 1961 when Laurie's father was stationed at Ft. Bliss. In 1973, she graduated from El Paso's Austin High School and attended the University of Texas at El Paso. In the fall of 1974, she transferred to Texas Tech University in Lubbock, Texas where she majored in elementary education with a focus on special education and music education. She received her Bachelor of Science degree in 1977 and returned to El Paso to begin her professional career as a special education teacher. From 1977 to 1983, she taught at El Paso's Crosby Elementary as a K-8 resource teacher. In 1983, she married John F. Williams and moved to Austin, Texas. She taught 5<sup>th</sup> and 6<sup>th</sup> grade resource classes in Smithville ISD, moving to Manor ISD in 1985 to teach 1<sup>st</sup> and 2<sup>nd</sup> grade resource. In 1985, she also entered the Special Education graduate program at the University of Texas at Austin focusing her studies on emotional disturbance. In 1986, she moved to Austin ISD to teach in an emotional disturbance unit at Gullett Elementary and in 1987, her unit was transferred to Casis Elementary. After teaching special education for eleven years, she moved into regular education in 1988, working as a 5<sup>th</sup> grade teacher at Casis. In 1990, she earned a Masters of Science in Education degree. While at Casis, she became the campus representative for math education, moving to the position of the district's technology leadership team representative in 1996. During the decade of the '90s, she began working as a volunteer for KIDLINK, a global telecommunications organization for K-12 youth.



As part of KIDLINK, she developed several online projects and traveled internationally to present workshops on telecommunications integration. In 1995, she began to work as a freelance technology consultant—both nationally and internationally. Her consulting work has been primarily in the field of educational technology, however she has also been called on as a consultant in the public business sector, working for such entities as the American Airlines Pilot Association, the Texas Department of Health, and PBS' *Computer Chronicles* series. In 1998, she returned to the University of Texas at Austin to pursue her doctorate in the Instructional Technology Program of the Graduate School's College of Education Curriculum and Instruction Department.

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