

JOURNEY AND METAMORPHOSIS-TRAINING TO INDUCTION:
AN ACTION RESEARCH PROJECT IN TECHNOLOGY PROFESSIONAL
DEVELOPMENT AND CREATION OF A TEACHER INDUCTION PROGRAM

An Action Research Project

By

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Submitted to the Graduate School of Education and Psychology
Pepperdine University
In partial fulfillment of the requirements for the degree of

MASTER OF ARTS

July 2005

Major Subject: Educational Technology

ABSTRACT

This report is based on the findings of action research conducted at Greenhill School, an independent pre-k to 12 college preparatory school in the Dallas Texas area. The research focused on the training and development aspect of my practice as the director of technology at the school. There were three distinct cycles of action research starting with a technology skills assessment survey of the current faculty and staff.

The results of this survey refocused each of the additional cycles with the second being an attempt to increase reflective practice of the faculty by formalizing a reflective process utilizing reflective prompts and establishing a means for faculty to engage in dialogue in an on-line forum. The third cycle emphasized a shift in training methodologies used in delivering technology training to the faculty. Rather than focusing on the development of skills, the workshops were structured so that the technology content was situated in the context of the practice of a teacher. Pedagogy of teaching with technology was modeled during these workshops utilizing learning theories as the content of study to be delivered. The emphasis was taken off the development of specific technology skills allowing faculty to experience learning with technology.

The results of these three cycles have allowed me to formulate two additional cycles as follow-up as well as the development and introduction of a new teacher induction program at the school. The teacher induction program will focus on the development of a community of practice with the focus being on the improvement of teaching practices while reflecting on current learning theories. The technology training is incorporated into the delivery and facilitation of the induction program. Teachers will experience learning with technology.

ACKNOWLEDGMENTS

Here I would like to take a moment to thank those that have helped me achieve this moment. First I would like to thank my fiancé and best friend Rhonda Blackburn for her encouragement and patience. Thank you for understanding and encouraging me along the way. I look forward to our next educational adventure together.

I would also like to thank the incredible individuals that comprise the Super Seven Cadre. The honesty, vision, encouragement and support from this group have been incredible. I am honored to be counted among this group: Scott Allen, Karen Connaghan, Tara Cowe-Spigai, Jim Kenney, Matt Midura, Bernard Burchette, Michael Dulay, Karen Elinich, Christain Greer, Kari Hoiem, Xing King, Brooke Molnar, Jason Quevedo, Michael Sweeney and Susan Tiss. Thank you for all of your comments and the time sharing ideas via IM and Tapped In. This group is the best.

Margaret Riel needs a special mention. She has been an incredible inspiration throughout this entire project. Thank you for your guidance and your wisdom. You were very gracious in your readings of this work and I appreciate your insight. You have been a force of change within me.

Vince Mikulski, thank you for allowing me to bounce ideas around and Mark Crotty for reading some of my work and being my reality check on this project. Our discussions have been very encouraging.

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CHAPTER 1

INTRODUCTION

Background

It has been said that you teach as you were taught. Since most of today's educators went through school before computers were in school or when educational technology was in its infancy, it comes as no surprise that many teachers struggle with effective implementation of technology in their teaching. How can I change this trend at my school?

The literature discusses training situated in the context of teaching. Much has also been written on new teacher induction and its ability to increase teacher retention and its effectiveness in preparing teachers to succeed in their new school.

In this report, I explore new training possibilities through the completion of 3 cycles of action research. Action research is the systematic, reflective study of oneself and their environment. The researcher examines their work and looks for opportunities to improve. As stakeholders, they propose actions to help them improve their practice and reflect to develop the next cycle. This action research was conducted at Greenhill School where I serve as director of technology.

Greenhill School serves approximately 1250 students from ages 3 through the 12th grade with approximately 200 faculty and staff.

When Greenhill made the commitment to technology, a technology plan was developed establishing clear goals and a realistic strategy for using telecommunications and information technology to improve education. Greenhill School's Technology Plan was developed as a result of school-wide strategic planning which identified technology

in education as one of the key capabilities the school must have in order to be successful in its mission.

In 1996-97, the school installed a network infrastructure and developed the Technology Department. At the start of this program, the entire employee base was required to take technology classes to satisfy a mandatory technology training requirement of 10 or more hours per year. This worked well in the beginning. Training was on basic use of the technology as most faculty and staff were new to technology.

E-mail and the Internet were new concepts to most Greenhill employees. Very few had any knowledge of Microsoft Office or teaching with technology. These early classes focused on the basics. Most of the workshops were 1-2 sessions long and averaged 1.5 to 2 hours each session. The classes were held at the end of the work day. These workshops seemed to work well for the initial introduction of technology at Greenhill School.

In 1999, I moved from the classroom to become the director of technology. During that first year, I continued offering workshops following the same format. However, I spent considerable time analyzing the effectiveness of these workshops and determined that we needed to make changes.

In the year 2000, we started to offer more intense workshops in the form of full day (8 hour) sessions offered on weekends and in successive blocks at the end of the work day. These sessions were conducted using the corporate model for applications training and were offered in beginning Word, Excel, PowerPoint and Access. The faculty and staff that attended these sessions made measurable changes in their technology

knowledge and the classes were structured to fit their immediate needs. All examples and exercises were based on the use of the application in their workplace.

We also began an intensive program of one-on-one training with faculty and staff. This allowed us to focus the training on the specific needs of the individual. While we were able to continue addressing the basic needs of the faculty, we added greater emphasis to integration of the technology into the classroom and implemented “just in time” training opportunities. We identified our web as a great resource for developing greater integration and began to work with faculty to develop their own web pages.

New tools for developing and delivering technology training were employed. Tech tips and clips- short instructional “white papers” and video clips were developed for training purposes on common skills that seemed to be lacking in large numbers of the employee population. We also used these tools to deliver instruction on new technology as it arrived at Greenhill School.

We have also offered week long training workshops for teachers specific to integration of technology into the classroom. These have been very successful in the past and should continue in the future.

Statement of the Problem

There has never really been an analysis on the technology skills of the faculty and staff of Greenhill School and as such, the training programs are often driven by the types of calls that were received and logged at the help desk.

While there have been have had continuous training opportunities at Greenhill School, the faculty and staff that currently take advantage of these opportunities are small in number. Most faculty and staff have learned the basics during the initial introduction

of technology at Greenhill School but have failed to continue to grow. The pool of faculty and staff that are actively involved in technology professional development has declined. At the same time, we have a turn-over rate in excess of 30 employees each year. There have been several faculty members that had been very active in technology professional development in the past that have moved on to other schools.

Of these 30 plus new employees, 10 of them are fellow positions which are one year assignments. All of these new employees enter the community August of each year. These employees usually include a mix of faculty, staff and fellows.

These employees are given about 3 hours of training serving as an introduction to technology services at Greenhill School. This introduction takes place two weeks prior to the start of school and is divided between two days. While we have considerable training opportunities for employees at Greenhill, there is no formal evaluation and tracking program related to training. New employees are encouraged to make arrangements for training as they see the needs. However, this seldom happens.

What follows is a discussion of related literature and the results of 3 action research cycles. Much has changed since the start of this project and plans are in the works for additional change and new action cycles. These changes in training practices are starting to create positive change in the use of technology in the classroom as well as improving my relationships with the faculty and staff.

CHAPTER 2

REVIEW OF LITERATURE

Need for Teacher Technology Training

Today, more than ever, we are living in a technological world, a digital world. A freshman in college today is the first of a generation of digital natives that has grown up in world of interactive and communication technology. However, teachers of these digital natives are more like digital immigrants. When immigrants learn a new language, they generally have some type of accent. As immigrants, teachers don't think and speak like their students (Prensky, 2001). Prensky feels that "students today process information differently than their predecessors" (2001). He points to work by a doctor at Baylor College of Medicine who feels that the differences go far beyond the "differences in processing, their brains may be fundamentally different because of these experiences" (2001). This might imply that we need to entertain the possibility of these differences and alter our teaching methods to increase the probability of success for students who are comfortable learning in a digital world.

Continually evolving technology constantly presents teachers with additional challenges requiring them to craft new uses in their practice. Historically, teachers have been slow to embrace the use of technology as an element of change in their practice. Change as a result of technology has created problems related to teacher training, retraining and curriculum integration (Westbrook, 1993 as cited by Valovich, 1996). The fact that computers were accessible to students before teachers had the opportunity to master them places teachers at a disadvantage (Valovich, 1996). This again highlights the difference between the digital native and the digital immigrant.

The question then becomes how to best help teachers develop their technology skills so they are comfortable enough to effectively utilize technology with their instruction (Valovich, 1996). Technology professional development in schools should be context based rather than generic. Training is often generic in nature and focused on basic application skills (Valovich, 1996). It has been found that effective training for teachers utilizes modalities that link the skills to classrooms and instruction rather than software specific skills (Meehan, 2002; Anderson, 2002).

With a teacher's time being a premium, any trainer must be cogent of teacher's time commitments. This means that programs that are able to provide "just in time" and "on demand" (Meehan, 2002; Anderson, 2002) training may be more effective with the more generic types of training.

Teacher Retention

Teaching is recognized by many as a difficult profession with limited financial rewards. As a profession, "teaching has also traditionally been characterized as an occupation with high levels of attrition, especially among beginners (Grissmer & Kirby 1987, 1997, cited in Ingersol & Smith, 2004). Fifty percent of new teachers leave the profession within the first 5 years of entering (Huling-Austin 1990; Ingersoll & Smith, 2003, cited in Ingersoll & Smith, 2004; Darling-Hammond & Sykes, 2003, cited in Wong, 2004).

While a teachers' education focuses on the construction of knowledge in some subject area, it has little to do with the profession of teaching. So what makes a teacher and how do you retain them in the profession? Teachers are developed over a period of

years through structured professional development programs (Wong, 2004). One way to accomplish this is through a well structured induction program.

Teacher Induction Program

Induction is a system wide, coherent, comprehensive training and support process that continues for 2 to 3 years then seamlessly becomes part of the lifelong professional development program of the district to keep new teachers teaching and improving toward increasing their effectiveness (Wong, 2004, p. 42).

Induction programs are often for all new employees to a school whether it is their first year teaching or have been teaching for years (Ingersoll & Smith, 2004).

There is often confusion regarding the structure of an induction program. While mentoring is an important part of induction, it is not in itself induction. Mentoring can be described as an action whereas induction is more process oriented (Wong, 2004).

Mentoring by itself has not been shown to be very effective. Wong writes, “Principals and new teachers rated mentoring the least effective way to help new teachers” (2004). In contrast, a well designed induction program has the ability to increase retention of new teachers to the profession and develop expertise. You could describe induction as a comprehensive professional development program where “new and veteran teachers interact through collaboration” (Wong, 2004). They are or can develop into a community of practice where “apprentices, young masters with apprentices and masters some of whose apprentices have themselves become masters” [practice] (Lave & Wenger, 2003).

A typical induction program might include a 4 to 5 day program before the start of school where new employees would be introduced to the school culture and begin a process of forming a cohesive group. The program would be tailored to specific needs, monitored leading to structured and systematic professional development spanning 2 to 3

years providing mentoring, professional dialogue, and networking to help build community and the construction of knowledge through learning circles and community of practice (Wong, 2004).

One aspect of a successful induction program that is of particular interest is that of professional portfolios.

An electronic portfolio is a collection of work captured by electronic means that serves as an exhibit of individual efforts, progress, and achievements in one or more areas (Weidmer, 1998, cited in Capraro, 2003).

These portfolios should be reflective of the teaching and learning experiences of the teacher in the induction program. The desire would be to establish a pattern of collecting reflective artifacts relating to the individuals practice of teaching. The portfolio would contain authentic teaching and training experiences where products of these experiences are captured illustrating levels of proficiency and they should be reflective in nature (Valovich, 1996; Capraro, 2003; Meehan, Obler, Schiorring, Serban, 2002).

Induction as a Community of Practice

Induction programs that are well designed have many of the characteristics of a community of practice. According to Wong, teachers in these programs must not feel isolated. Rather, there should be a climate that encourages the “collegial” exchange of ideas. The qualities below are common among successful induction programs:

- Have networks that create learning communities
- Treat every colleague as a potential valuable contributor
- Turn ownership of learning over to the learners in study groups

- Create Learning communities where everyone, new teachers as well as veteran teachers, gains knowledge
- Demonstrate that quality teaching becomes not just an individual responsibility, but a group responsibility as well (Wong, 2004, 51)

The call for scholarly exchange of ideas and interaction between new and veteran teachers, echo through much of the literature. It would also appear that Zone of Proximal Development plays an important role in group dynamics of community and individual construction of knowledge. Social interaction between the members of the community, both new and veteran, functions as cognitive apprenticeships when knowledge is situated in the context of the community of practice (Nyikos & Hashimoto, 1997).

Social interaction is a condition indispensable for the function of apprenticeship and scaffolding....One primary observation arising from this study is that without a strongly supportive social component, the potential for learning (or ZPD), for both the individual and the group was radically undermined (Nyiko & Hashimoto, 1997).

It is also noted in the literature, that tutor and learner, interacting with each other, must reach a consensus about goals and possible approaches to solutions to problems. This is a feature common to Vygostvy's zone of proximal development and speaks to the community of learning and community of practice that creates new identities and the role of scaffolding in creating those identities (Cheyne & Tarulli, need date).

Prior Experience and Learning

While context is paramount in learning and remembering, the context itself can be key to how an individual will learn and develop. While knowledge is connected to past experiences, "individual knowledge has feeling connected with it... pleasant facts and unpleasant facts, appealing ideas and offensive ideas" (Bereiter & Scardamalia, 1993). Bereiter and Scaradamalia refer to this as impressionistic knowledge. They argue that in

some cases, strong impressionistic knowledge is required for the development of formal knowledge. Teachers that have had a difficult time with technology in the past may have developed strong feelings and as a result, have learned that they want nothing to do with technology in their practice. Other teachers may have had wonderful experiences with technology in their practice and embrace what it has to offer.

Considering impressionistic and prior knowledge when designing a professional development program will maximize the individual growth of the participants. By considering participants prior experience with technology training programs can be tailored to the individuals improving their effectiveness.

Summary

Teachers embody the spirit of education and examples of life-long learning. By practicing continual learning in their discipline and craft, teachers will develop a greater commitment to the school and their practice. Learning occurs in social constructs with teachers sharing their knowledge and experience of the craft with other educators. This community of practice fosters collaboration leading to further development of individual's practices. As teachers are engaged in authentic personal professional development, they develop a ...(insert bridge here).

With the rapid changes in technology, there will always be the need for continual professional development to assist teachers to remain current. Because of the ability of technology to aid in the collaborative process of learning in a community, it is a natural tool to use within a community of practice. There is a real need in schools for programs that will increase the success of new teachers. Teachers new and veteran can benefit from such programs.

Possible Solution to the Problem

One possible solution might be to develop a training program for new faculty and staff. This would change the focus of technology training from the current faculty and staff where we are well aware of their abilities to the new faculty and staff. This program would start with a basic introduction to technology at Greenhill starting with the current model. However, there would be a formal assessment that included self assessment as well as outside assessment of the technology skills and needs of these new employees. At the school, we often refer to these employees as the “rookie class” and a sense of community is already being established. Building off this sense of community, the data from the assessments is then collected and analyzed determining the technology training needs for the “rookie class” of faculty and staff. A custom program is then developed to meet these needs by first focusing on bring each employee up to a basic level of competency in technology and familiarity of technology resources at Greenhill School. We then focus on growing these skills past basic literacy fulfilling specific needs of the rookie class. Methods of delivery for the training would include small group training, tech tips and clips, one-on-one training, quick tip workshops, topic specific workshops for in depth training in specific applications and integration and on-line delivery of technology training.

The rookie class would also team up with members of their departments that are strong in their technology skills and can serve as a resource. At the end of the year, the rookie class should complete a new survey to assess their current level of technology skills and determine further training opportunities. The goal would be to develop a new

employee base that is stronger in technology thereby increasing the over-all technology literacy of the employees at Greenhill School.

Successful induction programs share many characteristics with communities of learning and communities of practice. If a community of practice can be situated so that learning in the community is contextual with the practice and authentic, real growth and change will occur.

Successful technology training programs have been found to model elements of induction, communities of practice and communities of learning. It has been reported that programs that train in the context of the practice are more successful. Authentic instruction that is tailored to the specific needs of the community is more effective. A desirable technology training program would be unique and comprehensive moving teachers beyond mouse clicks to a deeper understanding of the possibilities and turning eyes toward their own practice and collection of artifacts with critical reflection followed by action that generates change and the construction of knowledge. To that end, a multi modal technology training program that is tightly integrated in an induction program for new employees leading to ongoing development of individuals and community of practice is a worthy goal for any school.

Research Question

How will the development of a formal professional development program addressing specific technology needs of employees of the school affect change in the use of technology in classrooms, offices, and the exchange of dialogue related to pedagogy or technology integration?

CHAPTER 3

CYCLE 1: IDENTIFICATION OF TECHNOLOGY SKILLS

The first step in redesigning the technology professional development program is to determine the basic technology skill level and knowledge of technology resources available at the school. This process will involve a systematic approach and serves as a springboard to future cycles. I feel it is important to have an accurate picture of the current environment so that the effects of my future actions can be more easily understood. By surveying my current faculty and staff, I will also be able to evaluate the effectiveness of such a survey tool in evaluating the technology skills of employees. Results from this survey can be compared to trends in calls to the help desk. This will allow me to informally assess the validity of this type of self report.

CYCLE 1: Identification of technology skills and knowledge of current employees at Greenhill School. This information will be collected through a comprehensive survey.

Research Questions for Cycle 1:

1. How will understanding the technology competencies of the current employees of the school help me develop a professional development technology program that better serves their needs?
2. How will the use of this survey instrument with current employees help me create a similar assessment tool for new employees?
3. How will my attention to the needs of the new employees affect the way they relate to me and other teachers at the school?

Actions Taken During Cycle 1

The first step in redesigning the technology professional development program was to ascertain the basic technology skill level and knowledge of technology resources at the school. This was accomplished with a self-assessment survey. Looking at various survey methods, I chose a model that would allow me to group questions into categories and reduce the number of actual pages necessary to deliver the instrument. I believed that the structure of the survey was important and that grouping would increase the yield of survey responses.

I also reviewed helpdesk logs and discussed common training issues with the technology staff that serves as technology support for the school. This became a basis for developing most of the questions. We also met as a department to discuss the basic skills necessary for employees to efficiently use technology in their jobs.

The Survey Instrument

The survey was organized into 11 categories (see Table 1) with most questions requiring a Likert scale response: Never heard of it, Heard of it but don't know how, Limited: just learning, Competent: can complete satisfactorily and Expert: can teach others.

TABLE 1
Survey categories

<i>Section</i>	<i>Topic</i>	<i>Discussion</i>
1	Basic Skills	Basic computer skills related to working in a windows environment and network
2-5	MS. Office	Competencies with the MS office Suite: Word, Excel, PowerPoint, Outlook
6	Internet	Knowledge of the world wide web and use of internet browsers
7	Software	Knowledge of additional software resources available a the school
8	Hardware	Knowledge of additional hardware resources available at the school
9	Future Training	An opportunity for faculty and staff to express their desire for additional technology training and topics for future training
10	Training Methodologies	Respondents were asked to respond to options for training schedules and methodologies
11	Demographics	Respondents supplied demographic data while not supplying information for individual identification

Implementation of the Survey Instrument

The survey questions were all drafted and then entered into Survey Monkey. This was then released on a limited basis for review by a group of critical friends. Data and comments were collected related to this limited release and adjustments were made to the questions and survey format. All test data was purged from the system and then the survey was released to the entire employee community of the school.

A letter explaining the purpose of the survey was sent out via school e-mail to all employees and a link was provided to the survey. The survey was sent to 380 employees. This list includes full-time faculty and staff, part-time faculty and staff, adjunct coaches

and part-time aftercare personnel. There was a 29% response rate to the survey with 111 employees responding. Adjusting the expected response to focus on the core staff, the response rate was closer to 45%. This also represents the employee base that would normally be involved in this type of training. Table 2 below illustrates the response rates of the core staff based on primary assignment at the school. For the purposes of this study, the maintenance staff and instructional support were included in the staff numbers. Instructional support includes Nurses, Learning Specialists, Psychologists and Librarians. The structure of the survey allowed for the isolation of maintenance staff from other respondents. Faculty was defined as teaching at 100% of assignment.

TABLE 2
The response rates for core employees at the school.

<i>Core Staff</i>	<i>Core Staff Numbers</i>	<i>Number Responding</i>	<i>% Responding</i>
Faculty	138	69	50
Staff	73	21	29
Fellow	10	1	10
Administration Team	13	13	100
Maintenance	14	1	.07
Unknown	NA	7	
Totals	248	112	

Initial Analysis of Results

The survey responses are extensive, however, for this research cycle the scope of analysis will be narrowed to focus on several key areas: skill sets related to core software available on all campus computers and skill sets related to software which, for the purpose of this study, has been categorized as potentially facilitating curriculum integration. Other areas of focus for this cycle include: perceived need for additional training, desire for additional training and preferred training models, methods and times.

Analysis of Core software Skills

The school has standardized on the Microsoft platform and Microsoft Office Suite is installed on all computers on campus. I have classified the following applications as basic literacy applications and where employees would need a working knowledge to effectively fulfill their responsibilities: Word, Excel, Outlook, PowerPoint and Internet Explorer or other Internet browser.

Each question set for these applications had a Likert scale response of:

- Never heard of it
- Heard of it but don't know how
- Limited: just learning
- Competent: can complete satisfactorily
- Expert: can teach others

Assigning a value of 1 to 5 for these responses, the mean value for competency level for each application was calculated for each skill surveyed. Table 3 illustrates these values and the ranking of proficiency in these applications related to surveyed skills.

TABLE 3

Rank and mean values for all skills surveyed for each application. All mean values are based on a 5 point scale with 5 demonstrating the greatest proficiency.

<i>Rank</i>	<i>Application</i>	<i>Mean</i>	<i>N</i>
1	Word	4.33	111
2	Basic Skills	4.13	111
3	Outlook	3.51	109
4	WWW	3.39	109
5	Excel	2.90	107
6	PowerPoint	2.88	108

MS Word

Microsoft Word is used by all employees on campus as the main word processing tool. It was one of the first applications available to the staff when the network was established in 1996. Extensive training on this application had been done in the past. The results of the self-assessment related to proficiency in Word were not surprising. Most respondents (61%) rated themselves as expert: can teach others. This was by far the highest rated application on the survey as it related to specific application skills. However, it is interesting to note that when asked in a later part of the survey to rate their over-all skill and comfort level (not related to specific skills), 49% rated themselves as Comfortable with the software- Intermediate and only 45% of the respondents rated themselves as advanced- can teach others. This is in contrast to the 61% that rated themselves as expert in Word. This would seem to imply a realization of additional skills beyond their knowledge. Yet, when asked about future training in Word, 66% declined future training. It is possible that they do not need additional training beyond their current knowledge to effectively perform their job. However, calls to the help desk lead me to believe that there is a sizable population that is working ineffectively with limited or incomplete knowledge of the program.

MS Outlook

The school uses MS Outlook with Exchange for e-mail. These applications have been in use at the school since the introduction of the network. E-mail was new to most employees 8 years ago. Every employee has an email address and e-mail has become the main form of communication on campus. Outlook received a median aggregate score of 3.53 for the skills surveyed ranking it 3 out of 6 (see table 3) for the basic applications

surveyed. 60% of the respondents identified themselves as intermediate users-comfortable with the software. Comparing this with the calls into the help desk, this would seem to be an accurate reading. There have been few requests in the past for additional training by the teachers and staff. However, there have been some requests from administrators for training of their teachers and staff. Specific training requests have been in the area of calendar features as they desire to make better use of this feature with their staff. These requests have been by division with most of the requests coming from the lower school. There have also been some requests by the administrators of the upper school for additional training to make use of additional functionality with their staff.

Looking at responses to individual questions, it is clear that there are gaps of knowledge in key areas of functionality and resources provided in MS Outlook. The following table highlights some of the more prominent skill sets where employees selected the second option- Heard of it but don't know how. These skills were selected because it is believed that employees with these skills will be more efficient and effective using this tool to communicate with the community. While all of these skills would add to their efficiency at the job, some of them could also have a positive impact on their use of technology in the classroom and enhance the ability for classroom communities to communicate.

TABLE 4

The percentage of respondents lacking skill in the use of these function of MS Outlook.

<i>Question</i>	<i>Percent responding they had heard of it but did not know how to perform task or skill.</i>
Subscribe to listservs*	31%
Create a meeting invitation to an appointment*	29%
Create rules to handle e-mail	28%
Create a discussion group in public folders*	52%
Copy appointments from Greenhill master calendar (public folders) to personal calendar	50%
Setup a read receipt*	28%
Create voting buttons*	34%

* Knowledge of this skill should have a positive impact on a teacher's ability to communicate with the class community and or increase their ability to integrate this technology into their teaching.

Efforts that focus on increasing these skills should have a positive impact on the efficiency of the community to use Outlook as a tool for communication within the organization as well as with the classroom community.

Internet

The responses to the questions related to the World Wide Web (WWW) pointed to some discrepancies related to perceived competency levels. The school maintains a dedicated T1 line for Internet access. The Internet is one of the most prolific tools at the school. While employees may not have many of the other applications at home, most do have Internet access. When the Internet goes down for any reason during school hours, the calls immediately arrive at the help desk. It would be safe to say that everyone at the school uses the Internet sometime each day. With this type of usage, the responses to this part of the survey were surprising. 80% of the respondents rated their over-all skills with MS Internet Explorer and the WWW as competent or higher. The mean score for the skills measured related to the WWW was 3.39 placing it 4th out of 6 (see Table 3) in the

basic software competencies. This places competency related to surveyed skills related to the WWW somewhere between “limited: just learning” and “competent: can complete satisfactorily”. This discrepancy in the results might be related to the mix of answers from faculty and staff. Further analysis will need to be completed to determine the trends as they relate to additional training in this area as 47% of the employees surveyed do not want additional training with using the WWW as an educational resource. This number does include non teaching staff which would affect the results of this part of the survey.

The skill sets that ranked highest related to the WWW were the basic skills of simple searches, navigation, creating and organizing bookmarks, copying text from a web page and saving images. Skills that rated lower were searches using advanced Boolean logic, evaluation of websites for accuracy and relevancy, adjusting preferences in a web browser, citation of electronic sources (a skill needed by educators), skills related to authoring and posting a website, and skills related to downloading and installing software from the Internet.

The results of this part of the survey seem to point to a population that is well versed in the basic skills of using the Internet with little desire to grow beyond these skills. However, based on calls to the help desk and my personal interaction with employees at the school, there does seem to be a need for additional training as users are making requests that show their need to function beyond these basic skills. Further analysis and study in this area is needed to better determine the needs of specific constituents of the school community. It is not unlikely that the faculty would have very different skill requirements than the support staff and as such, training should be focused on differential skills of the various functional positions of the community.

MS PowerPoint

The results from the question set related to knowledge of MS PowerPoint were a bit surprising given the prevalence and potential of this tool. PowerPoint ranked lowest (mean score of 2.88 on a 5 point scale) in the core software related to specific employee knowledge and skill. This application has been available on campus since the introduction of the network. This tool has value as a teacher presentation tool as well as use as a tool for students' project presentations. When asked about creating a new presentation, the responses seemed to be equally divided between the last four categories ranging from heard of it but don't know how to Expert: can teach. Beyond that, the majority of the responses fell into the "heard of it but don't know how" category. Yet, this application received a mean rating of 3.30 on a 5 point scale for over-all competency. While the results would suggest that teachers are not utilizing PowerPoint in their classrooms, the lack of use might also suggest a lack of engagement with technology in their teaching. Further study will need to be done here to determine the effect additional training would have on the use of this tool in the classroom. However, over-all lack of knowledge in this application suggests an area that must be explored for future development.

MS Excel

The final application being considered in this survey as a core application is MS Excel. This application scored second lowest of the core applications weighing in with a mean score of 2.90 (on a 5 point scale) on the specific skills being studied. However, when the study group was asked about their over-all competency in this tool the mean response was 3.63 (on a 5 point scale). This placed Excel above PowerPoint and almost

on par with Internet Explorer. Most of the respondents felt they had a basic working knowledge of Excel but would not be able to perform tasks beyond simple spreadsheets.

This is a tool that has implications for productivity as well as integration into curriculum. There are several seasonal activities that are performed annually by many members of the community that require them to interact with existing spreadsheets. The help desk receives an elevated level of calls during these times for assistance on simple manipulation of these spreadsheets. In some cases, the work is passed on to others to perform as the individual responsible does not have the knowledge or skills to work at even the most basic of levels with this application. There have been extensive training opportunities in the past with full workshops given in this application. There have also been opportunities for development in one-on-one and small group environments. The calls logged at the help desk support the findings of this survey and additional training is necessary in this area. Yet, 33% of the respondents stated that they have no desire for additional training in this area. The remainder of respondents had expressed some desire for additional training in Excel.

Reactions to the structure and timing of professional development

Like most schools, time for training is an issue at this school. Teachers and staff have full schedules and setting time aside for training means giving something else up or getting a substitute to cover during the training time. In the past two years, the school has completed several studies by survey, consultant and committee that have pointed to time being a major issue.

One of my current training models emphasizes one-on-one training with standing schedules. Training is tailored to the specific needs of the individual and delivered with

an emphasis on authenticity. However, with an employee base of over 250, this method can only reach a few that can set the time aside. I have also offered short workshops and classes on specific applications. These have been met with varying degrees of success. I have created a small collection of training tips and video clips but there has been no formal delivery method or training program related to these tips and clips. The subject of these tips and clips has been drawn from the logged calls to the help desk and interaction of the technology staff and myself with the employees.

The survey asked the respondents to select the best times and desired training methods for future training development. It was not a surprise to see that one-on-one training was preferred by almost 70% of the respondents. However, there was also a lot of interest in other training delivery methods and times. Chart 1 illustrates the preferred methods and times as reported by the respondents in the survey.

CHART 1

Training- Time and Delivery: Choice of structure and time of desired technology training.



- 1 One on one training scheduled at my convenience
- 2 One hour stand-alone workshop offered 4:00-5:00
- 3 One hour stand-alone workshop during the school day
- 4 Self-service training through tech clips and tech tips
- 5 Multi-day workshop offered during the summer
- 6 CBT on specific technology subjects
- 7 2 hour stand-alone workshop offered 4:00-6:00
- 8 Multi-hour workshop offered after school in 2 hour increments
- 9 2 hour stand-alone workshop offered 6:00-8:00

The one hour stand-alone workshop offered either during the day or immediately after school (4:00-5:00) was selected by about 50% of the respondents. This would provide many opportunities to attend a short focused workshop as it would be repeated on different days of the week at different times of day. The attendance at any one of the workshops would be expected to be low but the aggregate attendance might be quite high. This has never been done at the school and would be a new method of offering technology training. I believe that this type of training may also help address the issue of

time as there would be multiple opportunities for any training session offered and the variety of times would allow faculty and staff to pick a day and time that works with their schedule.

Over a quarter of the respondents indicated a preference for the 2-hour after school workshop when the time was 4:00 to 6:00 but less than 10% were interested when the time is 6:00 to 8:00. Since this was one of the lower ranked forms of professional develop, 2 hour after school workshops will not be further explored at this time.

The interest in self-service training through tips and clips and the delivery of training through computer based training (CBT) were quite high. While there has been no formal deployment of these methods, there has been some experimentation with tips and clips. They were well received by some yet others still wanted only the written instructions. The method of delivery was by e-mail and there was not formal archive of these training tips and clips that was readily accessible. It seems that this might be an area were I can make some real progress can in training and development of current staff at the school.

General Reflection from Cycle One

The purpose of this survey was to determine through self report the level of technology competence of the current faculty and staff. This is a stepping stone to the goal of developing a technology training program for new faculty and staff in the style of an induction program as well as a way to better serve the current employees. It was important to determine the training needs of the current faculty and staff as some of them may play a role in a new training program. It was also important to determine the

competencies of the current group of employees as this would help me determine necessary changes in my training methodologies.

This cycle was very involved and the analysis of the data will continue for some time. However, this first analysis of the data has answered some questions, affirmed some suspected trends and has raised further questions.

How effective was this survey as a form of self report to measure the technology competencies of the existing faculty and staff? Most of the results from this survey were inline with what might be expected based on anecdotal evidence from my personal interactions and those of the technology staff as we interact with the faculty and staff on a daily basis.

This survey seems to have been an effective instrument for assessing the level of technology literacy at the school. As a result, I feel this type of survey would work well as an instrument to gather similar knowledge of new employees prior to their arrival at the school. Some of the survey will need to be adjusted for this group as they will not be aware of the resources available at the school and the issue of “survey intimidation” will also need to be addressed. However, while altering the survey to better match the needs of a new employee, a portion could query them on prior experience with some of the technology resources available at the school thereby creating an awareness of the technology that would be available to them when they arrive at the school.

The data collected from the new employee survey will help me facilitate the ability to tailor a training program to the specific needs of these new employees. New users with stronger skills will be identified early. Users that might have difficulty with the technology at the school could be placed in relationships with more advanced users

with the intent to share knowledge. This type of pairing could be facilitated by information gathered through a survey.

Another advantage of gathering this information prior to the arrival of the new employees is the opportunity for me to customize the new employee technology orientation. In the past, technology orientation has always been rather general as I had no prior knowledge of the technology abilities of the new employees. With the knowledge gained from the survey, the orientation can be tailored to the new employee group.

CHAPTER 4

CYCLE 2: INCREASING REFLECTIVE PRACTICE

Cycle 2- Increasing Reflective Practice

While the school contains three divisions effectively operating as subunits of a larger community, it has been difficult to formally engage faculty across divisions in professional dialogue related to the practice of teaching. This has often been a factor of time. Each division has a unique schedule and demand on faculty time. These differences are often referenced by faculty when discussions relating to additional activities arise.

I am interested in the nature of my relationships with faculty through the development of a formal means of sharing professional dialogue. I am also interested in the individual changes that might occur in participants practices and shifts in frames of references.

Reflecting on past technology professional development programs, most have emphasized the development of specific software skills. While this is important for the growth of the individual, it has had little impact on the implementation of technology in the classroom. While some teachers are using technology in their curriculum, it is usually in a traditional and passive form: PowerPoint poster board presentation. I suspect this “traditional” use of technology by computer literate faculty is linked to two points: (1) faculty have not personally experienced learning with a computer as a tool of thinking and collaboration and fail to see the possibilities on their own, (2) this style of teaching with technology requires a fundamental shift in teaching philosophy. The role of the teacher effectively changes. While current learning theories support this type of

shift in pedagogy, teachers are either resistant to the concepts, not aware of the current theories or are not clear how they would implement such theories.

Research Questions

How effective will the practice of engaging faculty members in professional dialogue related to learning, teaching and technology be in affecting change in practices of pedagogy in the classroom and the development of a community of practice?

Sub-question

1. In what ways will relationships change if faculty members are provided a means of engaging in online professional dialogue centered on provocative articles on the practice of teaching and integration of technology in the classroom?

The catalyst for change starts with understanding. Through contextual reflection on their individual practices, faculty will have the opportunity to explore learning theories related to situated readings.

Action

During this cycle, I engaged the faculty in dialogue related to the practice of teaching. Faculty were encouraged to read and reflect on short articles and videos related to learning theories. The goal was to encourage faculty and challenge them to examine the role of a teacher in today's classroom.

On a weekly basis, I sent short e-mails to the entire community featuring a short article, essay, interview or video highlighting some aspect of the teaching practice and providing a common point of reflection for the entire community. Each reflective prompt was chosen specifically to challenge the community to look at the act of teaching and learning from a new perspective. Each new prompt challenged educators to question their practice and reflect on how it fits with current learning theories.

Each mailing also included an invitation to join the learning Theory/Technology (LTT) group in Tapped In (TI) for dialogue. Securing permission from one of my colleagues to use some of his group quota, (I had used all of my current quota), I set up LTT as a place for ongoing dialogue. The room is also open to the greater TI community.

The contents for each weekly mailing were posted to the LTT group room in TI as a separate discussion providing structure for future dialogues. This was also done to facilitate communication with the greater TI community. I chose to open this dialogue with Marc Prensky's article about Digital Natives, Digital Immigrants. This article provides context for exploring the concept of today's students being fundamentally different in the ways they learn.

Four articles served as reflective prompts and were delivered over a one month period. Additional prompts were sent as they were discovered. Active discussion provided additional content for reflection. The following articles were scheduled for distribution:

1. Prensky, M. (2001). Digital natives, digital immigrants. *On the horizon*, 9, (5), October 2001.
2. November, A. Teaching Zack to think.
3. November, A. Moving beyond automation.
4. Prensky, M. The emerging online life of the digital native.

Data to Collect

Data for this cycle came in three forms: informal face-to-face conversations, individual postings in Tapped In and e-mail messages. Data was coded and evaluated from the perspective of mutual engagement- meaningful engagement and relations forming engagement- joint enterprise and shared repertoire (Rogers, 2000 and Wenger, 1998). Evidence of extension of ideas, agreement and disagreement, extension of resources, new relationships and change was also noted. All examples of conversations have had names and identifying references removed. Context has been provided as necessary.

The first form of data evaluated were logs of informal face-to-face conversations with colleagues at the school related to teaching pedagogy, theory and technology integration. These conversations were the result of informal, impromptu meetings in hallways and offices. The purpose of these logs was to record the nature of the conversation. This included initiation, duration and content. Only conversations that had connections to teaching, learning theory and technology integration were considered.

The second data set collected were individual posts and dialogue recorded in the group room created in Tapped In for the express purpose of facilitating dialogue related to learning theories and technology. These conversations were in response to articles I sent to the entire employee base as well as original postings by any member of the group.

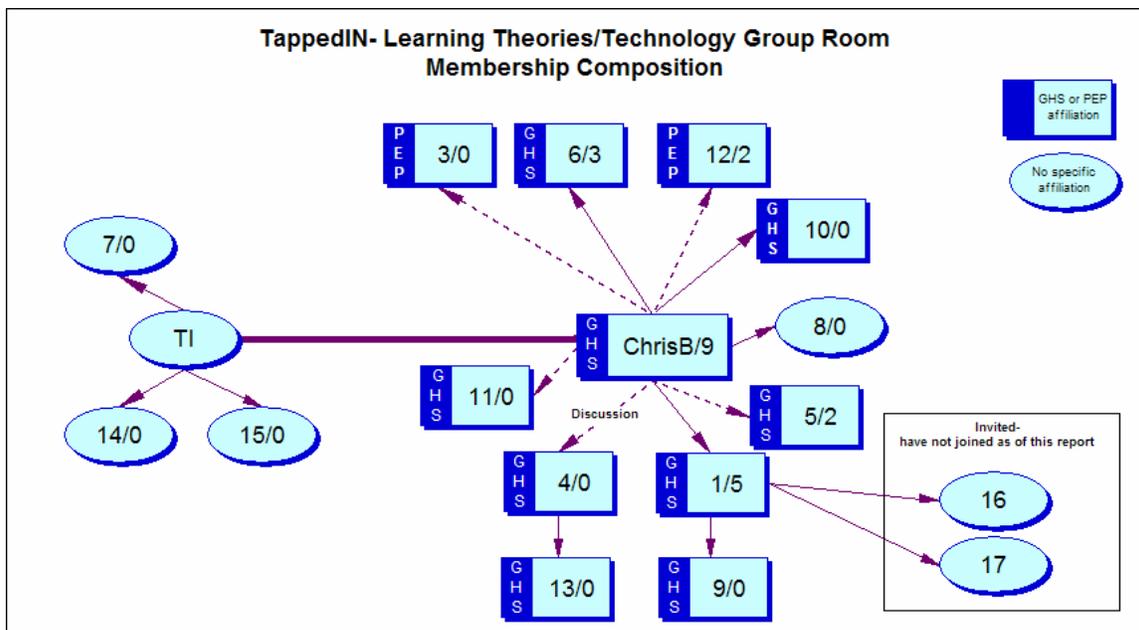
The third type of data collected was e-mail. These e-mails were connected to articles I sent to the entire community as well as individual discussions related to teaching pedagogy, learning theory and technology integration.

Data Analysis

The Learning Theory/Technology group room in TI has now been in existence for about a month. The data collected for analysis was current as of May 13, 2005. The room is still active and as a result, will continue to change. Members learned about the room and joined the group in several ways. Chart 1 illustrates the group membership as of May 13, 2005. While the initial project focused around the mailing of reflective prompts. I have noticed greater opportunities for discussions surrounding pedagogy and learning theories since the beginning of this project. This has provided opportunities for dialogue leading to members joining the group as a result of a personal invitation following informal dialogue.

Chart 2 shows the composition of the group room as of May 13, 2005. The solid arrow lines represent individuals that joined the group as a result of the initial mailings of the prompts or directly through TI. The dashed lines represent individuals that joined the group as a result of a conversation or a personal e-mail invitation. The first number is the participant ID. The second number represents the total number of posts by that participant in the forum as of May 13, 2005. The total number of posts by that date resulted in $N=21$

CHART 2

Tapped In- Learning Theories/Technology Group Membership Composition

As of the date of this analysis, 6 reflective prompts (see table 1) had been sent to the community consisting of 248 individuals. Of these recipients, 138 were faculty and 13 were on the administrative team and 97 were administrative assistants, support and maintenance staff..

TABLE 5

Conversation prompts delivered during the first month of this cycle.

Author	Title/Citation	Medium	Date Posted	# of TI Posts
Prensky, M	Digital natives, digital immigrants: a way to look at ourselves and our kids	Essay	April 6	11
November, A.	Teaching Zack to think	Essay	April 14	0
November, A.	Moving beyond automation	Essay	April 14	3
Prensky, M	The emerging online life of the digital native	Essay	April ()	3
Papert, S.	Edutopia- Interview with Dr. Papert	Interview/ Video	April 29	1
	eSchool News	News	April ()	0
Learner.org	A Private Universe		April 20	2

Analysis of Posts to Learning Theory and Technology Room in Tapped In

Evaluating the contents of the responses to each of these reflective prompts has shown the presence of the 6 criterion discussed earlier: extension of ideas, agreement, disagreement, extension of resources, new relationships, change and relation to practice. The following discussion consists of sample posts responding to each of these criteria. The names and other identifying information have been removed to protect the identity of the group member. Context has been included as necessary.

Extension of Ideas

Responding to a question, posed to the group by member 2, regarding accepting change, member 5 responds:

“As you say, change happens and we can embrace it or not. The more important question for me, involves the ways visionaries and risk-takers can affect change. Why is that so hard?”

With this post, the author builds on a concept presented earlier and focuses the group reflection in another direction.

Agreement

This quote comes from the 8th post in a thread and makes reference to agreement with two prior authors (2 and 5). The author says:

“I agree that we are in the midst of many changes and must consider how best to proceed, not just with adolescents but with young children as well.”

As well as showing agreement with others, this author also extends the thinking to younger children. This is pertinent as this individual is the only one in the group at this time that teaches the very young. This comment helps to draw the conversation across the entire age continuum.

Disagreement

This quote from author (6) makes direct reference to items from the prior post where author (1) reflects on their practice as it related to the reflective prompt. The discussion referenced here demonstrated the principles presented in the prompt as action in member (1)'s classes. Disagreement is healthy when respectful as it allows for greater perspective, differences of opinion and diversity of practice. Author (6) writes:

“I’m glad your ____ classes are in step with creative learning practices. You are teaching a _____ driven class (*class name*) with computers. I however, deal with young children, who have to learn to read and in our college prep environment they therefore need to be proficient readers (at the very least). I found reading Prensky’s article very depressing...”

Extension of Resources

It is through the extension of resources that the group’s discussion can move beyond the ideas of the group. The following quote by member (5) clearly demonstrates the sharing of new ideas by extension of resources. Author (5) writes:

“...to learn about change, check out the work of Fullan and Kotter. Robert Evans also has a great book called *The Human Side of School Change*.”

New Relationships

This is the one criterion that was not clearly evident in the posting data. However, when combined with data collected in face to face conversations, the formation of new relationships was very evident. The following is a new relationship between member (1) and member (6) and is connected to the quote listed in disagreement above. After member (6) posted their response to member (1), member (1) came to my office to talk. This had become a regular practice and the frequency of visits have increased with the practice of reflection in TI. On this particular visit, member (1) was talking about the

post by member (6). “Did you see what that (lady/man) wrote? What did you think?”

This opened the door for a discussion of differences in teaching styles, fear and the validity of the post. However, the realization that member (1) did not know member (6) even though they walked by the office of member (6) each time they came to my office was revealing. These people have worked on the same campus for the past 2 years yet never knew each other. Yet, they were both open to discussing learning theory, practice and pedagogy. About a week later, member 1 came by my office deciding they would introduce (himself/herself) to member (6). It is also interesting to note that 3 days passed before member (1) wrote a response to the post of member (6). This is what they said:

“Thanks for taking the time to reply to my comments. After thinking about your email, I think that in a broad sense, teaching is about recognizing students’ learning styles and modifying your teaching to accommodate their learning styles. From your anecdote seems like you are doing just that! Congratulations!”

This response demonstrates reflection on the original prompt, the individual’s practice and the practice of another individual in context with the reflective prompt. It also signals the beginning of a new relationship through professional dialogue and while dissenting opinions, they were respectful in their exchanges. I have to wonder how long it would have taken them to meet each other and engage in meaningful, purposeful, professional dialogue if it were not for the use of TI as a meeting place of ideas.

Change

The following quote was a postscript at the end of a posting. It speaks for it’s self. The author writes:

“All this tappedin discussion has really been a wonderful experience for me! This discussion gives me the opportunity to examine my thoughts and write them write down.”

Relation to Practice

The following quote is a wonderful example of reflecting on one's practice in context with one of the reflective prompts. The author makes the following observation related to their practice:

I have a rather brilliant (*subject*) student who has taken it upon himself to create a (*project*) using (*resource*). He is enlisting other students to help him create objects such as (*object list*). He has also advertised for students to help with voice-overs for the (*project*).”

As these are examples of each criterion, the full analysis involved all of the posts for the entire room. Each post was analyzed for the criteria listed above. Since it was possible for a single post to have multiple criterion included as well as multiple counts of an individual criterion, I used the following method to code each post. Posts were grouped by original reflective prompt and assigned an identifier based on the prompt. Since there were 6 prompts, the identifiers are 1 through 6. Each post was then numbered within a prompt. This allowed for the identification of an exact prompt and post. All 7 criterions were assigned an ID (A) through (G). Using these codes, each post was analyzed counting the types of criterion and the numbers of times that criterion was found in evidence. The data was recorded using the following schema: (criterion prompt:post-frequency). Example: A1:7-3 translates to extension of ideas found three distinct instances in post 7 within reflective prompt 1. Table 6 is a summary of the results for the first month of exchanges posted in the Learning Theory/Technology group within Tapped In.

Table 6

Summary of 1st month of exchanges in LTT group room The data is coded as follows(prompt:post-frequency).

Criterion	Coding (prompt/criterion value)	Summary
A. Extension of idea	1:2-1, 1:4-2, 1:7-3, 1:10-1, 1:11-2, (9) 3:1-3,3:2-1, 3:3-2 (6) 4:2-1 (1) 7:3:1, 7:4:1 (2)	18
B. Agreement	1:1-1, 1:3-1, 1:7-2, 1:8-1, 1:4-1, (6) 7:3:1, 7:4:1 (2)	8
C. Disagreement	1:2-1,1:4-1, (2) 4:2:1 (1)	3
D. Extension of resources	1:7-2, 1:9-1, (3) 4:2:1 (1) 7:1:1 (1)	5
E. New relationship	1:2:3-1, (1) includes face to face data	1
F. Change	1:5-1, 1:6-1 (2)	2
G. Relation to practice	1:1-1, 1:2-1, 1:5-1, (3) 3:1-3, 3:3-1 (4)	7

While most of the data collected comes from discussion in the LTT room in TI, data also was also collected in tow other areas: face-to-face conversations and e-mail.

Analysis of Face-to-Face Conversations

Since the start of this cycle, I have noticed an increase in my dialogue with others on campus surrounding the topic of learning theories. While it is possible that I have been more cognizant of these conversations, the frequency of these conversations has increased since the start of this cycle.

Since starting this cycle, I have engaged in over 25 separate conversations related to learning theories. Most of these conversations were initiated by others through simple references to the reflective prompts they had received in their e-mail. All of these conversations were informal.

The conversations logged represent interactions with 9 different individuals. Of these 9 individuals, 5 joined LTT in TI and 3 of these have contributed posts to the group.

It is also important to note that of the 9 individuals, 2 were teachers that I had little contact with until this cycle. Of these 2, one has very strong opinions about these learning theories and related pedagogy, stating to me the importance of continuing this exercise. However, this individual has yet to post their comments in LTT. Asking this individual why they had not posted, they responded that they were fearful of putting their thoughts in writing for others to read. This individual was not alone in this thought as several others had alluded to not wanting to record their thoughts. Others made reference to the lack of time resulting in their inability to participate. One individual said of the digital native, digital immigrant article, “the article made me irritable” While not opposed to joining such a formal discussion, reference was made to teaching 8 classes making it impossible to participate in the group this year.

Analysis of E-mail

The e-mail received related to this project has been minimal. Several were simple responses expressing thanks for sending the articles. The following are excerpts from 6 of these messages.

Author 1 writes:

“Thanks for the articles!- I would really like to learn how to set up a classroom webpage...

Here the author acknowledges the articles then makes known their desire to establish an online environment for their class. This is the first time this year that this individual has contacted our office with a desire to increase their use of technology.

Author 2 writes:

Interesting article.

Author 3 writes:
Great article- Thanks for sharing

Authors (2) and (3) both acknowledge the article but with different responses. Author (3) clearly enjoyed the article. However, their response does not help me to understand their thinking in respect to the article. Author (2)'s response is also ambiguous. Later in the cycle, I had an opportunity to talk to author (2) about the article and the project. It was clear that author (2) had thought about the reflective post and how it related to their practice. Neither author (2) or (3) has joined LTT. Additionally, author (2) cited a lack of time as a hindrance to their participation.

Author 4 writes:
“Thanks for the article, Chris. It's very thought provoking--and provocative. My first reaction is somewhat defensive, I'm sure. I can see how certain kinds of skill and knowledge based learning are very well suited to a digital approach. Vocabulary and grammar games, for example, seem more attractive than flashcards and diagramming sentences on the chalkboard. But the heart of what I do, wrestling with ideas (*subject*) and questioning what it means to be human in a universe of mystery, doesn't seem to me to have much to do with computers. I don't think much has changed since Sophocles, Jesus, and the Buddha. How's that for an immigrant mentality? Anyway, thanks for making me think.”

Here is a response by an individual who clearly reflected on the implications for their practice related to the prompts. From the response, it seems that this faculty member has some resistance to the ideas presented and does not agree with the ideas that students today have these fundamental differences in the way they learn. While this is a response to the Digital Native, Digital Immigrant prompt, and the article was more about learning theories than computers, this faculty member seemed to focus most of their response on the technology. This would have been a wonderful post to have in the group room as it demonstrates a depth and purpose of reflection that would add to the depth of

conversation in the group. This author joined the group but has not contributed to the group conversation.

Author 5 writes:

“Hallelujah!!! I can only hope that those who've been fighting this change for years will at least view this video....it's been like beating my head against a wall!!! ... Thanks, Chris...keep 'em coming!”

Author 5 shares their enthusiasm and support for the ideas presented in a video sent to the community discussing problem based learning models. This author also expresses some frustration with this type of discussion in the past and encourages me to continue with the project. However, the author never does join the group.

Author 6 writes

...thank you. I'm not a teacher but I like to follow these things.

This message was a bit of a surprise. The author lets me know that although they are not a teacher, they find value and interest in reading about this topic. This however is the extent of involvement by author 6.

Of these 6 individuals, only one has joined LTT and none of them have posted their comments in the LTT forum. While there is support for sharing these ideas, there is hesitation to join the group to formally discuss these ideas.

General Reflections from Cycle 2

I had expected many faculty members would join this group in conversation. The faculty at the school is strong in their opinions and has historically been vocal in meetings and small groups. While there has been quality feedback in the three data forms discussed earlier, the level and intensity of discussion has not been as high as I might have expected. I believe this might have some relationship to the time of year this project started. Teachers are coming to the end of another year. This usually means there is an increase in daily tasks and increasing demands on their time. I was impressed with the

additional conversations that took place outside of the LTT room. There was also indirect evidence supporting the existence of discussions about this project outside of my presence. I believe the faculty is open to these types of discussion in an informal environment- water cooler talk. However, the formal aspect of this project might have been met with some discomfort among some faculty. I point to evidence of faculty making their opinions and ideas known to me through e-mail and conversation yet not taking the step to share with the wider community. This evidence speaks directly to my third sub-question: How open will teachers be to sharing their views and opinions in a public forum in response to articles challenging the traditional methodologies of teaching?

Teachers that joined LTT and contributed were very open with their ideas. I was impressed by the level of reflection related to personal practice. Elements of mutual engagement, joint enterprise and shared repertoire were in existence in the postings of the room as discussed earlier. Several posts were very reflective and demonstrated considerable thought about the material presented and their personal practices. With the quality of discussion in this new forum, why didn't more teachers join the group? Why did some members fail to contribute to the group? What was the difference between the teachers that joined and those that did not? Beyond the issues of time and timing, could there be something about the school culture that limited participation? What else could I have done to increase the number of faculty members engaged in dialogue centered on learning theories, technology and pedagogy?

It is also important to note that only one member of the administrative team has joined the LTT group. The reflective prompts were sent to the entire community with the

invitations but I have only had dialogue, related to this project, with one administrative team member. Why have the others not joined? I purposely have not made specific requests to each division head as I wanted to group to form on its own. However, there has been no dialogue with these individuals on learning theories, technology and pedagogy. While I could have initiated the conversation, that was not the focus here. I do know that in the case of one individual, the technology might have been an issue. It appears that personal invitations and opportunities for face to face conversations on these topics may be a necessary augmentation. This is something that I will have to consider as I try to develop this CoP.

It is possible that the technology itself might have been an issue for others as well. For most of this community, a discussion forum such as TI is a new experience. I believe that it would be beneficial to offer several introductory sessions on working in the TI environment. These sessions would allow faculty the opportunity to interact with each other in the TI environment with access to individual help. This being said, two members of LTT are known to me to have weak computer skills. Yet, they successfully and independently set up an account in TI and joined LTT. Neither member however, posted to the group. I had an opportunity to discuss posting with one of these individuals and they expressed hesitation to put their thoughts in a place for others to read. They also expressed how much they enjoyed reading the dialogue that was taking place. In short, they were content watching from the side. This brings me back to the question of culture and what could be done to increase participation.

Looking at culture, the school has a climate that really pushes the students to perform in all areas. The school tries to focus on academics, arts and athletics equally.

This places pressure on all students to participate in multiple activities. Teachers feel this pressure as well. The students work hard and much is expected of them. Our students get into some of the top colleges in the country providing evidence of jobs well done. This might also factor into the low number of participants. I believe that there are many that do not see the need for change. The theories that have been presented represent change. While there has been an effort by some at the school to fight the concept of “we have always done it that way” or “we have a precedent”, the concept is still present on the campus. Without a perceived need to make changes, there is little reason to participate in discussions about change when time is so limited. I must focus on raising awareness for the need to change in our practice. One way this might be accomplished is to focus on current reports, studies and news items related to these issues. There have been many this year and they might help raise awareness to levels that stimulate a teacher to the next level of action and dialogue.

Communities of practice (CoP) take time to develop. This is just the beginning of this process. With new teachers joining each year, this might be a group that would have greater response to these types of discussions. Integrate this type of dialogue into a teacher initiation program. This would help take the focus off the technology and place it on practice and pedagogy. The technology would be a means of delivery for this information and a means to continue dialogue. The current room could continue next year but a room for the “class of 2005” faculty would provide them with their own space. Ownership and collaboration of ideas in this space along with other aspects of an induction program might make a difference. Giving faculty several reasons to go to this space may elevate the frequency of visits increasing the likelihood of greater interaction.

CHAPTER 5

CYCLE 3: PROFESSIONAL DEVELOPMENT SITUATED

IN THE CONTEXT OF PRACTICE

CYCLE 3: Situating technology professional development in the context of practice rather than development of specific software skills.

During cycle 1, I surveyed the faculty and staff about their training needs. Several items rose to the top of the list. Time resounded as a huge issue. The community was not very open to training that added hours to the day. In the past, all training classes took place after hours. During the early days of technology adoption, there were special days set aside for technology training. Neither of these models were popular then and were not favorable in the survey. However, there was interest in having training options during the day repeated multiple times throughout the month. There was also support for short workshops that focused on a specific skill or technique.

This model led to development of a training model allowing faculty and staff to attend sessions between classes or immediately at the end of the day. No allowances were made for class coverage. I have found from past experience that many teachers do not want to use class coverage to release themselves for professional development.

This year, the school added a work day to the schedule where faculty and staff were granted a day without students or meetings. The purpose of this day was for faculty and staff to use the time for purposes they saw fit. Seeing this as a unique opportunity, I put together a set of classes to offer that day. These classes were optional as this was not a technology training day. While the survey from cycle 1 pointed away from community

interest in training in technology integration, I chose to make all of the classes relate to use of technology in education. Each class offered was focused on introducing faculty to new models of using technology in education.

Research Question

How effective will the practice of delivering technology professional development in the context of practice be as a method of increasing effective use of technology in the curriculum?

Sub-questions

1. How effective will the practice of offering multiple sessions of the same workshop be in reaching the faculty and staff?
2. What times and offerings will be the most successful for professional development in educational technology?
3. How open will the faculty be to technology professional development that emphasizes pedagogy and is delivered in a way that models effective use of technology in an educational setting?

Background

Action

This cycle has two parts: (1) a workshop that was repeated multiple times over the period of a month, (2) a series of workshops that occurred on a faculty workday.

For the first part of this cycle, I developed a one hour workshop to introduce the community to blogs. It is clear from the skills/ knowledge survey that the community had little knowledge or experience in this area. The course was described as follows:

This short session is for those that have limited knowledge about blogs. Blogs have taken the Internet by storm. The power of blogging has changed the face of politics, and media reporting placing the power of the press in the hands of the people. No wonder Time magazine made bloggers the people of the year.

In this one-hour hands-on session, you will set up a personal blog and view other blogs that are on the net. If you have been wondering what all the “blogging” fuss is about, this workshop is for you. The educational potential of blogging is huge.

During the month of April, 4 sessions were scheduled with each session being on a different day of the week and time of day. Announcements were sent to the entire community to solicit sign-ups.

Part 2 of this cycle took place on a single day. April 29th, was set aside as a faculty workday. The intent was that teachers could use this day to grade papers, plan for future classes or complete any outstanding work. There were no scheduled meetings. This became the target date for a day of adventures in educational technology.

Drawing from the model of short standalone workshops, I planned 5 workshops each between 1 and 1.5 hours in total length. The theme for the day was adventure and discovery. With the exception of one of the workshops (Internet searching), they were all designed to be introductory. The intent was to allow teachers to explore possibilities. The goal was to stimulate thought about implementation rather than develop expertise.

Session 1, the blogging class was an additional offering of the class offered during part 1 of this cycle and utilized the same resources and rationale for making the offering.

Session 2, Searching the Internet: Techniques to Improve Your Yield, was the only class offered that was designed to introduce specific skills with the purpose of developing expertise. The survey of faculty and staff demonstrated a need for this type of training. 31% of those surveyed responded that they had never heard of Boolean logic

when searching the web and an additional 19% had heard of it but did not know how to perform such a search. Combined with the common complaint by faculty that students always turn to the web and often cite the first few hits returned by their search, it was obvious that additional training was necessary in this area. I developed a one hour workshop that focused on advanced search skills using Boolean logic. Using content I developed for a parent workshop on the Internet, I modified it for this short workshop. The focus was on building a personal Internet profile by finding personal information on the Internet using advanced search techniques.

Session 3- “What is So Smart About a Smartboard?” was designed to educate interested faculty on the potentials and possibilities of teaching with a Smartboard. While the technology has been around for sometime, it is only recently that teachers at the school have shown any real interest. We will be installing several new boards next year. Some of these are by request while others are being installed to provide access for future development. One of my greatest fears with this technology is that teachers will use them as glorified whiteboards. In this workshop, I focus on possibilities outside the realm of a whiteboard. The goal here was to get faculty to think out of the box. This was a demo workshop where I prepared in advance several different types of lessons for varied curriculum. The tool was shown to be useful as a power presentation tool as well as a tool for collaboration and recording the construction of knowledge.

Session 4- “What is the difference between a blended course and a blended drink?”, explored several different tools and techniques for teaching a class in a blended format. The school has WebCT as learning management system (LMS) and this workshop focused on teachers could use the tool to centralize their online content in a

blended course. The tool was new to most of the participants and so a quick overview was appropriate. However, this session focused on pedagogy and walked the participant through an experience of learning in a blended format. During the 1.5 hours, they received information delivered in a traditional format. They were then taken into the world of online learning by participating in online chats, accessing online resources for reflection in a blog (Papert's: Computer as a Condom) then responding to the blogs of others. They were then taken to a threaded discussion where they were asked to reflect on three leaders of their choice and what characteristics made them a great leader. The session ended with a quick tour of a wiki constructed to document the collective wisdom of the group related to characteristics of leaders.

The 5th session had only one non-faculty participant registered. Since this session was specifically for faculty, the session was canceled.

Data to Collect

During this cycle, I collected data related to the organizational demographics of the individuals attending, notes and reflections I created after the workshops as well as the results of post workshop surveys.

Data Analysis

This cycle included a total of 5 different workshops. Part 1 included one workshop repeated 4 different times. Part 2 had a repeat of this workshop with 4 additional offerings. While a large number of participants attended only one offering, there were faculty and staff that attended multiple workshops (chart 1). While 26 individuals participated in these workshops, the aggregate count of workshop participants

including multiple sessions was 42. Of these those that attended one session, half again as many attended two.

Examining the attendance by workshop was also important to understanding the effectiveness of these two workshop models (Table 7). The first model (part 1) offered the community multiple opportunities to attend a given workshop over the period of a month. The second model (part 2) offered the community the option to attend workshops of their choosing on a single day.

CHART 3

Attendance Trends: N=26 while the effective aggregate number of participants counting multiples is 42.

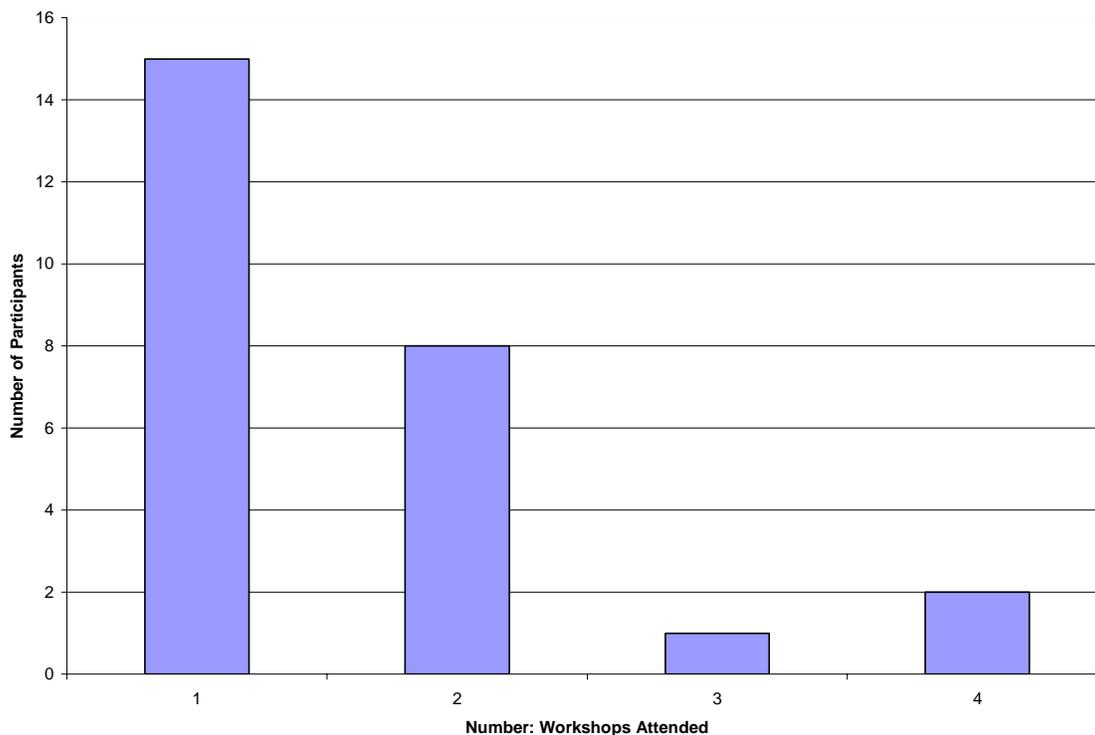


TABLE 7

Attendance by Workshop. A total of 26 individuals participated in these workshops.

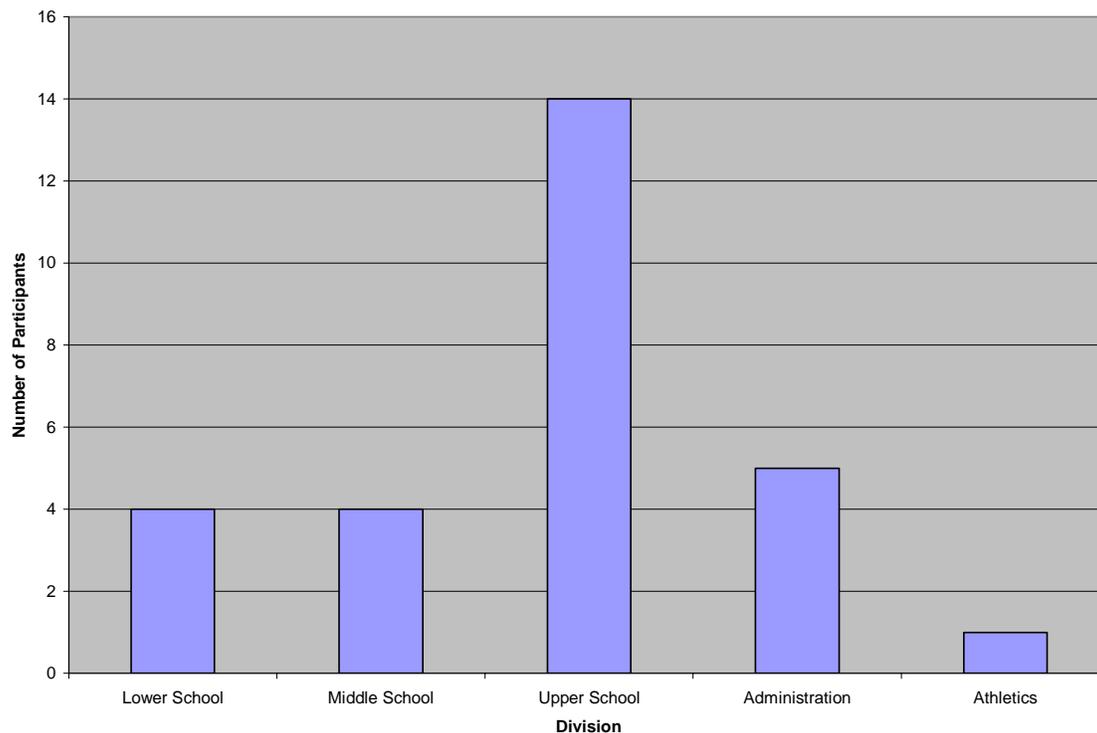
<i>Session</i>	<i>Attendance</i>
Model 1	
Introduction to Blogs	13**
Model 2	
Introduction to Blogs	3
Searching the Internet	7
What is So Smart About a Smartboard?	12
What is the difference between a blended course and a blended drink?	7
N=	42

***Model 1 attendance values represent the aggregate of 4 workshop offerings. N=42 includes individuals that attended multiple sessions*

Looking at the distribution of participants across campus, the greatest number came from the upper school. Almost three times as many participants were from the upper school than any other area (chart 3). The second most represented group were members of the administrative support staff. While the emphasis of all the workshops was use of technology in education, these members of the administrative support staff were interested in blogs.

CHART 4

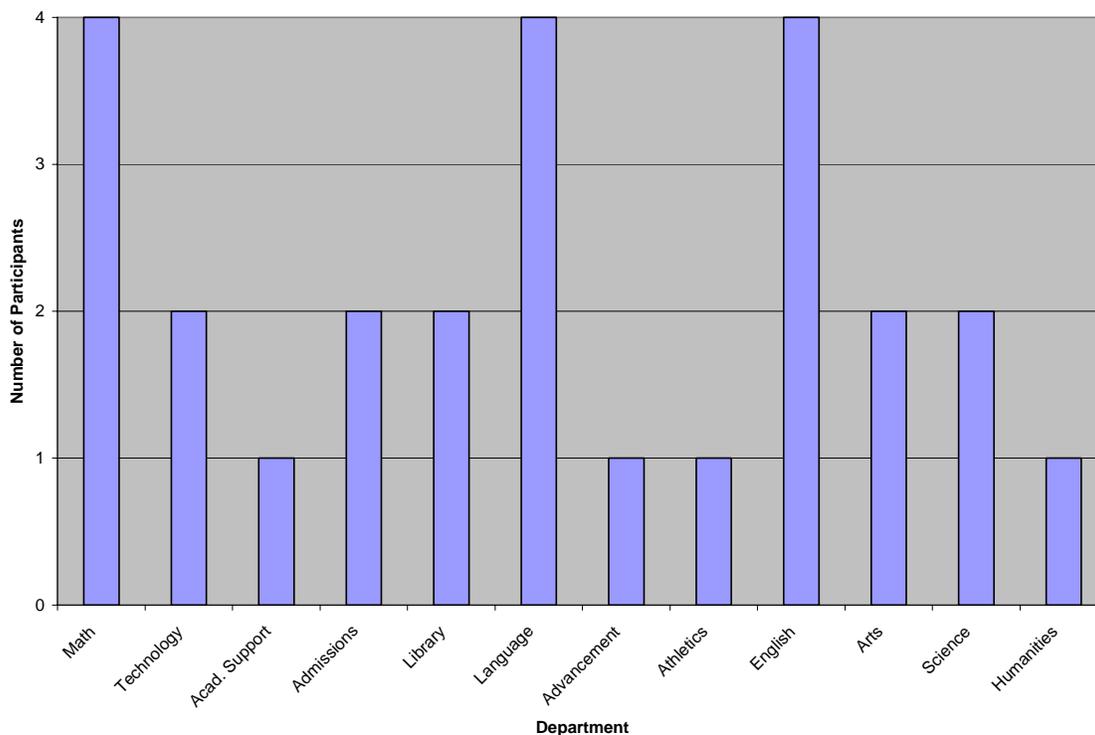
Demographics of participants by division. N=26 for all workshops.



It might also be helpful to look at the participants by department. The workshops were general by design and appropriate for all disciplines. Participants in these workshops came from a variety of disciplines. However, there were three departments that had 2 times as many as any other department. Math, Modern and Classical Languages, and English each had 4 participants attending the workshop (chart 5).

CHART 5

Total workshop attendance by department. These are aggregate numbers for all workshops presented in cycle 3.



Looking at the results of the workshop evaluations supplied little additional information that could be used to shape the future direction of these types of workshops. All of the responses to questions related to the quality and scheduling of the workshops were recorded as Very Satisfied and Satisfied (see appendix AA for copy of workshop survey). When asked if they would recommend the workshop which they attended to others, all said yes. Several of the participants included comments asking for additional follow-up workshops. I also received several e-mails as follow-up from the workshop. One of these really stood out as the response was not at all expected. The following are the contents of several follow-up e-mail messages from participants of several workshops held on April 29th:

1. I really enjoyed both workshops, and my head is abuzz with ideas. Thanks for your time and energy!
2. Thanks so much. The smart board workshop was most beneficial and informative. I am very excited about it. Perhaps we can do more of this during disorientation week.
3. I want to again thank you for Friday's tech classes. I really did find it interesting, helpful and (I can't believe I'm going to say this) inspiring. It was offered at a perfect time. The length of time was just right for me. It had enough detail but not so much that it was overwhelming. It was also great to have the opportunity to go back to my desk and play around a little bit with what we had done.

It would seem from the follow-up e-mail and the workshop evaluations that the workshop program was a great success. Besides the comment in message 2 above, there were several others that responded in comments on the evaluations that they had an interest participating in similar workshops during the closing week of school after classes are done and students have left. This is a program that I am currently working on assembling for this year.

General Reflections from Cycle 3

The new types of workshops offered during this cycle were quite successful. While the survey showed that there might be little interest in classes emphasizing integration, there still seemed to be considerable interest. Why the discrepancy? I suspect that these classes were so different than prior offerings that teachers might have been attracted by their curiosity.

The session on blogs was by far the most heavily attended of the workshops offered. During these workshops and through the post workshop evaluation, it became evident that there was a lot of general interest in blogs. While they have existed for some time, they have only recently become main-stream. With blogs making it prime-time,

news of bloggers having an impact on the 2004 presidential election and Time magazine elevating bloggers to the status of “people of the year”, it is not surprising that there was considerable interest in blogging.

The session on Smartboards garnered the second greatest attendance. During the past year, I installed a Smartboard in one of our teaching labs. This has proven to be a point of interest for many this past year. I also had several conversations this year with faculty returning from conferences describing the incredible technology that is the Smartboard. We are currently building a new lower school and adding to the existing upper school. Both of these projects are scheduled for completion this summer. As part of this project, I have planned to introduce additional Smartboard resources in both locations. We will also see the addition of a second computer lab in the lower school increasing opportunities for additional computer access.

Based on post workshop surveys, none of the participants had taught with a Smartboard and most had limited knowledge of their possibilities. I believe there will be considerable effort required in Smartboard training next year. This training will need to emphasize pedagogy as well as software and hardware training. Effective use of the Smartboard is to make the magic of the technology transparent. This will only come with increased proficiency. Reflecting on questions asked during this workshop, it may also make sense to group future Smartboard workshops around pedagogical functionality. While each discipline had specific pedagogical and functional questions, there were commonalities as well. These commonalities become the basis for future workshop planning and groupings. Interest surrounding this technology is currently high providing

a potential tipping point for educational technology at the school. Creative use of the technology and increased access will be fundamental to its success.

Of the departments attending, Modern and Classical Language has been the most aggressive in implementing educational technology in their curriculum. Math has been the least receptive in the past to technology use in their curriculum. It is important to note that each of these departments will have access to Smartboards next year. Both Math and Languages have expressed considerable interest in this technology. Earlier in the year, I had the opportunity to share emerging technologies available at the school with the Math department chair. It is possible that this meeting helped to increase interest in the department as I was able to share in an authentic way, the blending of different tested and emerging technologies as they might be used in a common lesson taught by one of our Math teachers. I am also aware that there is additional pressure from other members of the community to introduce technology to the Math curriculum.

The majority of the participants from these groups are also from the upper school. Reflecting on the high percentage of participants from the upper school, there are several things that come to mind:

1. I was a full-time upper school teacher and currently teach one class in the Science department.
2. I know the upper school teachers much better than I know the teachers of the other divisions. My relationships are considerably deeper.
3. Students and faculty in the upper school have greater access to technology resources at the school. There are 5 labs available to students and faculty of the upper school compared to 2 in the middle school and 1 in the lower school.

4. Students of the upper school have considerably more freedom in their schedule than students in other divisions increasing their access to available technology resources.

Considering these points, I do not find it surprising that more teachers of the upper school participated in these workshops. This is consistent with prior technology professional development at the school. One area that I will need to explore in greater depths is the establishment of deeper relationships in the other two divisions. This is a startling revelation to me and one that I will want to aggressively examine with the start of the new school year.

CHAPTER 6

FINAL REFLECTIONS AND FUTURE ACTIONS

Final Reflections

This year's journey through action research started with a look at how I structured professional development programs at Greenhill School. With a critical eye turned toward training, I found myself a year later looking at induction. The year started with a review of technology training and has ended with a vision of teacher induction involving far more than just technology. This year was a journey from training to induction

So how did I get here? What have I learned along the way? Where am I going in the future?

I started the journey with the idea that I needed to know the current state of the school with regards to technology proficiency. I had this belief that highly proficient faculty would equate to greater implementation and integration of technology in their teaching. I also started with a sense of frustration at the current faculty with regards to their efforts to remain current in technology. This led me to focus my vision on new faculty. Realizing that I wanted a picture of the technical abilities of the new faculty prior to the start of the year as well as the ability to understand the current faculty's technical abilities, the survey was a logical place to start. While I believe the survey was successful, several big ideas emerged.

The release of the survey had some interesting and unexpected results. One employee reported that he considered himself to be quite computer literate. However, after completing the survey, he realized just how much he didn't know. He wrote:

“It took me twelve minutes. It’s very easy to go through. But it is a bit intimidating. I feel like I’m relatively savvy and willing, but I still felt as if the survey pointed out how little I really know.”

This employee would be considered an advanced user at the school and has been a leader in integrating technology effectively into the curriculum. Other employees commented that “theirs was the survey that reflected very little experience.” The survey was designed to be comprehensive and cover many different aspects of technology at the school but I never considered that it might be intimidating. I am not sure what this means in the big picture. However, I suspect that I might want to review the survey for future use as I did not intend to have employees feel intimidated.

There were certainly questions on the survey where only a handful of people would have had any working knowledge. This was by design. This helped me to assess the level of honesty in self reporting as well as capture some of the more obscure areas of technology use on the campus.

One idea is to begin to develop a community of learning related to technology in the education with the current employees. I am looking for real change in the classroom as it relates to teaching and technology. However, I believe that my focus may have been too heavily focused on the technology skills. My belief that raising the overall technology skills would naturally lead to increased integration may not be the best model. While I still believe that these skills are important, I also feel that in order to affect real change in the classroom, I must engage the faculty in stimulating dialogue and readings related to learning theory and pedagogy. By starting this dialogue this year with current employees, the culture of professional dialogue will be introduced allowing for integration of the new faculty with the existing. Since time has been identified as a major

issue by the school, this might be an opportunity for me to explore the use of technology to address the issue of time by implementing asynchronous discussion groups.

Another observation from this survey is the way current faculty and staff has developed their knowledge in technology. It seems that some employees have developed their skills to competencies necessary to minimally perform their job functions. There seems to be heavy reliance on others to do work that could be done by them if they had the knowledge and skill. This is supported by calls logged at the helpdesk. The survey showed rudimentary knowledge of several of the core applications. Since these applications have gone through several upgrades since the introduction of the network, the methods of working with some of these tools is out of date. There is a need for additional on-going training.

The applications which the faculty and staff seem to be most fluent in are the “back office” applications. These are the applications that are needed to perform the daily tasks of communication, document production and record keeping. Many of the skills and knowledge of applications that have direct impact on education scored very low. While more study needs to be done in this area to normalize the data, it appears that integration is primarily at the student level and because the students demonstrate a generally greater fluency in technology- digital natives. While this is not unusual, the effective use of technology for the construction of knowledge in class would be greatly enhanced if teachers were more familiar with techniques of integrating technology while keeping current learning models in mind. One possible way of addressing this would be to re-implement summer technology integration workshops. The summer workshops have received considerable interest in the past and the survey points to continued support.

The following is a new model that I have developed that would change the focus from the technology training to technology experience. This model also draws upon student's natural propensity toward technology.

Imagine a group of teachers gathering for a week to work as a group to solve real-world problems. These would be problems that have no single answer and really can't be solved in the time that is given. Teachers would produce a series of artifacts that chronicle their journey as a group toward understanding. Now what if the problems are situated in their practice? What if the questions revolved around the craft of teaching and learning? What if the challenge was designed to deepen their personal understandings of how people learn, how knowledge is constructed?

What types of artifacts might be left behind? How would the teachers be engaged? What would be the methods of learning? What resources would be used? How would they use the technology? How would they gain the technology skills?

Now enter the mentors- students. During this week, teachers and students would be engaged in a common learning experience. Together, they would explore the world of learning and knowledge construction. Teachers would find themselves situated in their profession as well as personal learners. Students would work from the perspective of learners and mentors. Together they would work as a team, breaking down the traditional barriers that often exist between teacher and learner- barriers often arbitrarily defined by age.

Teachers and students would be selected and encouraged to volunteer. The desire would be to include teachers from all disciplines and levels. Students could include grades 5 and up. Students would have to be recommended for the program as the level of

engagement would be intense and require long hours from all. Ability to work as a team would be very important. I envision a maximum of 20 people in the first program with students and teachers being equal in number. This would then allow us to create 2 larger groups of 10 as well as break down into groups of 5 for some activities.

At times, the groups would be able to interact as one large group. However, there would also be the opportunity to physically isolate the groups and allow them to use appropriate technologies to communicate and collaborate.

The emphasis of this program would be authentic learning situated in a social construct. Participants would be asked to do things that they might not normally do. However, reflecting on these experiences will help them to develop a better understanding of the process of learning and knowledge acquisition. Each learning adventure will provide a chance to teach as well as learn.

This type of workshop would be unique and has never been done at this school in prior years. I see the benefits of such a program as being immense as it would allow a core of teachers to experience the social construction of knowledge as pedagogy to developing technology integration skills. At the same time it would, draw on the strength of students in the area of technology as guides to help foster an environment of shared expertise- faculty and student strength supporting each other in the shared endeavor to learn.

The study also looked at the preferred training schedules and methodologies. While it was no surprise that the preferred method was one-on-one at their convenience, the relatively high score for the self-service tips and clips as well as CBT opens the door to additional training models. I feel that the higher interest in this type of training may

also be related to the issue of time. I have done minimal exploration in this area at the school. This looks like a great area to start another research cycle. Why did self-service and CBT score so high? What attracts employees to this type of training? How can this type of training be authentic? How effective would this type of training be at the school? What structure can be developed that would engage the faculty and staff as learners and what type of accountability can be associated with this type of training? Can this training draw on the more advanced skills of others in the community as the start of a community of learning (CoL)? While not all training should be done in this method, there are areas identified by the survey that could be addressed through this type of training. Exploration in this area could have potential for an on-going training program that becomes a shared part of a community of learning.

The second cycle was a shift of focus from skill assessment to engagement. Engaging the community in dialogue focused on learning theories and pedagogy, I found myself drawn into new relationships and functional shifts in my existing relationships. The big idea here was relationships leading to community; specifically the role my relationship would play.

This past year, I was able to practice many of the principles of learning theories related to construction of knowledge with my science class. Modeling online methodologies employed by professors of the Online Masters of Educational Technology program at Pepperdine, I experienced teaching in a blended format based on constructivist theories. Through these experiences, I noticed a shift in my relationship with my students. While I was the teacher, they began to also view me as another learner

in the class. This new role in the relationship of teacher to student was exciting for all and helped me to see the value of this approach to teaching.

This experience helped to bridge a gap between myself and the faculty I train. In the past, most of my discussion with the faculty had been grounded in the mechanics of using specific software. While I would attempt to discuss the use of technology in the classroom, all discussions would eventually circle back to the mechanics. I believe that my new role in the classroom gave me new credibility with the faculty as I was also seen as a practitioner of the techniques that I was presenting.

When I started my attempt to engage faculty in discussion of pedagogy and learning theory, my role in relationships with faculty began to shift from technology to include being a resource in learning theories. This is not to say that everyone embraced these ideas or even welcomed the dialogue. However, I found myself now working with faculty in new ways as well as forging relationships with faculty where I had little prior contact.

This experience helped to shape my vision for the third cycle. I saw the opportunity to model the practice of teaching with technology in a constructivist approach. In my training sessions with the teachers, I moved the emphasis off specific skills and replaced it with pedagogy. This was done by situating the training sessions in the context of learning theories. While these were clearly technology training sessions, they were also sessions on learning theories. The technology became the means by which we participated in the training.

Future Cycles

1. Development of an online professional development program in technology
2. Development and implementation of social construction of knowledge workshop centered on development of technology integration
3. Development and implementation of formal teacher induction program

The first of these cycles centers on the development of an online training center for the school. This action cycle will play a very important role in the development and implementation of the teacher induction program and will be implemented throughout the development and execution phase of the induction program. This cycle is

The second follow-up cycle introduces a new concept in professional development for the school. Here students and teachers will learn side by side, each serving in the roles of teacher and student and working as a community of learners situated so that traditional barriers between student and teacher are removed allowing each to draw on the expertise of the other.

The third and final follow-up action discussed in this section is an action representing the culminating reflections on the literature and previous completed cycles. This cycle explores the development, proposal and implementation of a new teacher induction program at the school.

Future Cycle 1: Development of an online professional development program in technology

One of the findings from the survey conducted in cycle 1 was a desire for employees to have the ability to increase their technology skills remotely through online

training programs. Such a program includes simple help information that they could access online as well as more in depth training on specific applications and skills.

Research Question

In what ways will a formal online professional development program tailored to the needs of the school community change the way employees use technology and approach training in the future?

Sub-questions

1. By formalizing the online delivery of technology training, in what ways will teachers and staff use online training for the acquisition of technology skills?
2. How will formalizing the development of online technology training change my relationships with employees and the way I work with them individually.
3. What online methods and techniques will prove most effective for developing understanding and acquiring new skills with technology?
4. Not all technology skills and types of technology can effectively be taught through an online training program. What technologies and skill sets will prove to be more easily and effectively taught through an online training program and which technologies and skill sets are still best taught using other methods?

Background

We have informally experimented with online distribution of training materials over the past three years with the introduction of Tech Tips- a short step by step instruction for how to perform a basic computer function. These instructions usually include screen shots and sequential directions. During the first year, we wrote a series of

these instructions based on calls logged at the help desk and personal observations made when training individual teachers.

The next year we added video instructions for many of the Tech Tips. These we called Tech Clips. During this time, the tips and clips were emailed to the community. Clips were placed in a shared drive on the network with a link included in the e-mail. At times however, we e-mailed out a clip without a written tip. While many found the clip to be more than sufficient for the learning process, there were still those that requested written instructions. We decided that we would write the tips first then include a clip as we could produce them. The combined tip and clip proved to be very effective with many members of the community.

In the case of tech tips and clips, the information was not centrally located and the primary way of accessing the information was through a link in e-mail. This made it difficult for employees to find this information as many did not save the e-mail links. In hindsight, this was not the most efficient way of distributing the tips and clips.

There were times that I found the tips and clips in the computers recycle bin. This was often discovered when working with a teacher or staff member. Several times, I had the experience of a faculty member asking for help on a topic where I knew that we had created a tip and clip. This usually led to recovery of the information from their recycle bin and a request that they review the information prior to my solving their problem.

This was occurring during a time when our office performed many tasks for users where the users should have had the knowledge. The tips and clips were implemented at a time when we made a shift in our policy and started asking users to take responsibility for many of these basic skills. As long as we were there to perform these tasks, we

enabled them to ignore the need for these skills. This rapidly became a time problem as many of our calls could be handled if only the users had those skills. Therefore, we changed our policy requiring these types of calls to be training calls. We would only respond to the call when we were able to schedule an appointment for training at their location. This allowed us to meet with them and teach them the skill that they were missing.

These tasks included but were not limited to: creating a shortcut on the desktop, finding one of their files on their drive, recovering an e-mail they had deleted, creating a folder in which to save files, renaming a folder or file, and mapping to a network drive.

Some of the resounding successes from these tips and clips training methods were related to training for applications newly introduced at the school. For many of the school-wide applications, we would schedule training sessions in the computer labs for groups of employees. Often, there were conflicts in schedules and there were always some that were not able to make these sessions. For several of these training sessions, the material was presented was also placed in the tech tip and clip format. This was available to employees prior to some of the sessions as well as after the sessions. The intent was that it could be used as refreshers. Some of the skills presented would be done by an employee 2 or 3 times a year so it was easily forgotten.

We learned from these training sessions, that many of the people that missed the sessions felt that when they went through the tip and clip lesson related to the training session, they had all the information they needed and did not feel they needed to make up the session. This proved to be true in many cases as the employee then proceeded to perform the new skill without any additional help.

The use of tech tips and clips has had an impact on the frequency and types of calls to the helpdesk. However, one of the issues is that the tips and clips are not centrally located making them hard to retrieve. With the annual shift in staffing, many do not know that these resources are available. Therefore there is a need to formalize this process. The survey demonstrated a desire on the part of the faculty and staff to have this type of training available.

Action

- This cycle would have several different parts. During this cycle:
1. I will create a location on our Intranet to centralize the distribution of online training materials.
 2. I will then introduce this new training center to the faculty and staff with a short list of training material that is underdevelopment based on results from the cycle 1 survey of skills.
 3. I will explore a new model for application training. This would involve soliciting a small volunteer group of employees to take a short online course with the purpose of learning basic skills with an application that they have never used. From cycle 1, there was a large number of employees that had never used PowerPoint. This would be the test application. At the completion of this short on-line course, they will demonstrate their new knowledge by preparing a short presentation to use in their work place.
 4. Participants would then complete a short survey on their experience and recommendations on how to improve the program.

**Future Cycle 2:
Development and implementation of social construction of knowledge workshop
centered on development of technology integration**

Imagine a group of teachers gathering for a week to work as a group to solve real-world problems. These would be problems that have no single answer and really can't be solved in the time that is given. Teachers would produce a series of artifacts that chronicle their journey as a group toward understanding. Now what if the problems are situated in their practice? What if the questions revolved around the craft of teaching and learning? What if the challenge was designed to deepen their personal understandings of how people learn, how knowledge is constructed?

What types of artifacts might be left behind? How would the teachers be engaged? What would be the methods of learning? What resources would be used? How would they use the technology? How would they gain the technology skills?

Now enter the mentors- students. During this week, teachers and students would be engaged in a common learning experience. Together, they would explore the world of learning and knowledge construction. Teachers would find themselves situated in their profession as well as personal learners. Students would work from the perspective of learners and mentors. Together they would work as a team, breaking down the traditional barriers that often exist between teacher and learner- barriers often arbitrarily defined by age.

Teachers and students would be selected and encouraged to volunteer. The desire would be to include teachers from all disciplines and levels. Students would include grades 5 and up. Students would have to be recommended for the program as the level of engagement would be intense and require long hours from all. Ability to work as a team

would be very important. I envision a maximum of 20 people in the first program with students and teachers being equal in number. This would then allow us to create 2 larger groups of 10 as well as break down into groups of 5 for some activities.

At times, the groups would be able to interact as one large group. However, there would also be the opportunity to physically isolate the groups and allow them to use appropriate technologies to communicate and collaborate.

The emphasis of this program would be authentic learning situated in a social construct. Participants would be asked to do things that they might not normally do. However, reflecting on these experiences will help them to develop a better understanding of the process of learning and knowledge acquisition. Each learning adventure will provide a chance to teach as well as learn.

There would be reading and online work prior to the week-long institute. This reading and work would provide the foundation for the principles explored during the week.

Development and implementation of formal teacher induction program

This follow-up cycle represents the reflection of the past year and the first three cycles in this action research. At the start of this research, I explored the literature surrounding professional development in the area of educational technology. I suspected that this was an area where considerable improvement could be made at the school. My hope was to explore my current professional development methods, current skill sets of the faculty and other employees and identify opportunities for improvement. Early in this process, I discovered literature that discussed characteristics of effective professional development in the area of educational technology.

Summarizing this information, an effective professional development program in educational technology should:

1. Provide training in the context of use in the classroom. Learning activities should be authentic and situated in classroom use (Valovich).
2. Focus on pedagogy rather than specific software skills. Skills can be taught in context of pedagogy and offered in the spirit of “just in time” learning (Meehan, Anderson).
3. Emphasize just-in-time learning and learning on demand. Rather than covering software skills in a comprehensive manner, focus on only the skills necessary at that moment for the learning task at hand (Meehan, Anderson).

This information served as a basis for the first three cycles and specifically the development of the new training classes in cycle three and the impetus behind the development of the discussion topics for cycle 2. The literature also discussed a systematic training program for new employees known as an induction program. With the attrition rate being so high in the profession of teaching, the literature discusses how well planned induction programs increase retention of new teachers in the profession. Seeing this as a great vehicle for technology training for new employees, I wanted to explore the possibility of developing a school technology induction program for new employees.

As I progressed through the three cycles, I found I was engaging in more frequent conversations with faculty and staff. The subjects of these conversations were often pedagogy, training, and general experiences with technology. During this time, there has also been discussion regarding ways we could improve our training for new employees.

As I started to reflect on how a technology induction program might be developed, I realized that the program could be far greater than technology. This could be a vehicle to induct teachers new to the school. Through this program, new teachers could be introduced to the life, history and culture of the school as well as formulating discussions of pedagogy and development of a shared repertoire.

With an induction program that takes in all aspects of school life rather than focusing on technology, the emphasis on technology training can be diminished allowing the tech training to become more transparent. While there will still be a need for some formal technology orientation to the school. However, much of the induction program can be accommodated by using technology to deliver information, facilitate discussions, and provide collaborative work areas for the new teachers. Routine procedures for using technology at the school can be documented and placed on the Intranet for retrieval on demand providing just-in-time training. Pedagogy using technology can be demonstrated by using the tools and services available at the school to facilitate the induction program.

Realizing that this takes this project outside of the technology office and would require additional buy-in from other members of the community, I approached an individual who would have a pulse on what the needs were in areas outside of technology. This individual is currently responsible for curricular programs and is chair of the accreditation process for the school. This placed them in the unique position of reading all of the reports from all parts of the community related to the accreditation process. Taking a proposal to this individual, we have teamed up to develop a proposal that we have now taken to the head of the school. Receiving approval to proceed, we will present this concept to the administrative team for their input.

At this time, we have planned an induction program that would last a total of three years with the hope that it will naturally transition into an ongoing community of practice. This program contains three elements: emphasis on effective instruction, ongoing assimilation into the culture of the school, and unifying a cadre of teachers.

Several years ago, the school went through the process of establishing a comprehensive teacher evaluation system that focused on the implementation of a set of qualities and practices that they felt described exemplary teaching. These are: (enter trait here). We have focused the first year of the program around the theme of exemplary teaching providing opportunities for the group to read and reflect on each trait. We will be using existing technology to facilitate on-line discussions and collaboration prior to short face to face meetings on each trait in the theme for the year. We have established a tentative schedule of topics as follows:

September- Attributes of Exemplary Teaching
October- The Brain and Learning
November- Understanding by Design
January- Great Essential Questions
February- Meaningful and Authentic Assessment (Part 1)
March- Meaningful and Authentic Assessment (Part 2)
April- Unification of themes
May- Reflections and Goal Setting

We also plan to establish a common reading to help focus on the themes for the year. At this time, we are considering Frank Smith, *The Book of Learning and Forgetting*.

The technology training that usually takes place during the first week of school will change from skill based to exploratory allowing teachers to experience collaboration and learning with technology. The training will continue as they utilize the technology

throughout the course of the year with just-in-time training being delivered electronically through the development of an online training repository of skills and tasks related to life at the school as well as application tips and tricks. There will also be additional hands-on training available where effective use of technology can be experienced by the teachers. These sessions will be opened to all faculty and staff but priority will be given to the teachers in the induction program. These sessions will be a continuation of the training programs discussed in cycle 3 of this report.

It will be very important to determine the technology skills and knowledge of the induction class as this will determine the offerings and types of training that will be introduced throughout the year. It will also help to identify the new teachers that have specific expertise in technology as they can serve as additional resources within the community. This will be determined during the summer by having each new employee complete a technology survey similar to the one used in cycle 1 of this report. The survey will be adjusted so that it is more suitable for new rather than existing employees. This survey should be distributed to the new employees during the first week of August.

Teachers will be asked to be reflective of their teaching experiences and to record these reflections throughout the year. One way of helping the teachers to reflect is to give the reflection purpose. They will be asked to consider starting a professional portfolio. As they are preparing projects and curriculum for their classes, they will look for items that they are proud of and would like to feature in the portfolio. They will then critically evaluate the project for submission writing a reflective piece on their selection. Understanding that a teachers time is critical and that a new teachers time is even more precious, we believe that the extra time needed to start this portfolio will be minimal as it

will be drawing on the work the teacher currently performs to prepare for class. The added reflection should be the only item requiring extra time. We will use existing technology at the school and assist each teacher in creating the electronic professional teaching portfolio.

The second year of the program will have less formal structure and will encourage each teacher to focus on a specific aspect of their practice. They will be grouped in learning circles according to the topics of focus and will be encouraged to pursue a limited action research project throughout the year. We will have several times during the year where we will gather as an entire cadre for sharing and reflection. Technology training will continue in a blended format and will again be conducted in a fashion as to make the technology as transparent as possible and keep the focus on pedagogy. Teachers will continue to add reflective work to their professional portfolios.

At this time, the third year is still loosely designed but will focus on developing the cadre for mentoring the new induction class. I envision a program where they are able to continue to develop as a cadre while also developing in a formal mentoring program. We currently have new teachers assigned to mentors but there is no guidance or training for being a mentor. The hope is that the third year will allow for this development and that would serve as mentors for the new induction class.

As teachers transition out of the induction program, the hope is that they will be better prepared to grow in their profession and that they would feel a sense of belonging that will continue to function for years to come as a community of practice at the school.

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