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ABSTRACT

This paper addresses the successes and limitations of "turn-key" technology training in nine K-12 educational sites in the Mid-Atlantic region. It is a follow-up study, seven years after the original year-long 1993 investigation (Goss, 1995) of Internet use in K-12 schools and regional support centers. In the 1993 study of turn-key users of the Internet, six key factors emerged that determined the success of their scale-up efforts: access, skill building, ongoing support, equity, time, and costs. This follow-up study revisits those early Internet adopters. Participants responded to an online survey that addressed current use, intended use this year, linkage/relevance at site, internal support, and external support. Through analysis of survey and interview data, the study sheds additional light on earlier findings, while illuminating the successes of those with broad-based administrative support and a thoughtful technology dissemination plan. Benchmarks of successful turn-key technology integration are presented. (Contains 10 references.) (MES)

Seven Year Update Of The End-User Of Internet

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Abstract: This paper addresses the successes and limitations of "turn-key" technology training in nine K-12 Educational sites in the Mid-Atlantic Region. It is a follow-up study, seven years after an original year-long, 1993 investigation (Goss, 1995) of Internet use in K-12 schools and regional support centers. The 1995 study of turn-key users of Internet, five key factors emerged that determined the success of their scale-up efforts.

This follow-up study revisits those early Internet adopters. Through analysis of survey and interview data, the study sheds additional light on earlier findings, while illuminating the successes of those with broad-based administrative support and a thoughtful technology dissemination plan.

Background

A year long study (Goss, 1995) examined, described, and analyzed the partnership between Internal Change Facilitators (ICF) and an External Change Facilitator (ECF) working together to integrate Internet use at educational sites in 5 states: Pennsylvania, New Jersey, Delaware, Maryland and the District of Columbia. The purpose of the partnership was for practitioners to learn basic Internet skills, use the Internet, and then turn-key the use of Internet to others.

Recently there has been increasing recognition that teachers and teachers' knowledge gained from and imbedded in their everyday work, should be at the center of reform efforts and professional development activities (Darling-Hammond, 1994; Leiberman, 1995). This connection to the real-life work of teachers is imperative for lasting learning to take place. In this early pilot study of K-12 Internet use, much of the technology integration learning had to take place in the classroom environment, where experienced teachers could make the connections between student learning and new on-line resources available through this medium.

As Joyce and Calhoun (1995) point out, "staff development must not be offered as, "Here is stuff that has been researched, so use it!" Rather, effective staff development requires opportunities to be enriched by what Meier (1995) refers to as "the power of each other's ideas." As Fullan (1993) observed, "It's not a good idea to borrow someone else's vision." Thus a certain amount of time spent to establish each person's own vision and plans for technology integration is considered a vital part of staff development by many educators.

Peer coaching provides additional avenues for teachers to share expertise perspectives, and strategies with each other. Cohen, Talbert, & McGlaughlin (1993) point out "the importance of understanding how teachers respond to an ever-changing situation with knowledge that is contextual, interactive, and speculative." For this reason, teacher development programs should be structured around peer-coaching or mentoring in which the relationship between learner and coach is grounded in actual classroom practice. Learning new practices (such as technology integration) often involves changing old habits that have made teaching comfortable and predictable. This idea of a "buddy-system" proved helpful as the External Change Facilitator (ECF) offered technical assistance to the Internal Change

Facilitator (ICF) and began the work of designing a turn-key training program that would have lasting effects on these educational organizations.

In this study, the External Change Facilitator (ECF) initiated the professional development activities with turn-key strategies in mind. The study examined four key themes:

- First, the role of an outside agency to provide for successful Internet use by the ICF at each site,
- Secondly, to identify benchmarks that would indicate successful Internet integration for improved learning,
- Thirdly to identify the elements of a successful turn-key model,
- Finally a fourth goal was to identify successful dissemination strategies.

Eventually a model could be constructed and applied at other sites across the United States in order to scale-up the integration of Internet use for more teachers and their students.

The original pilot study was funded through the Office of Educational Research and Improvement (OERI), United States Department of Education. Two External Change Facilitators, Marlene Goss and John Kinslow, were assigned by Research for Better Schools, an OERI-funded, Regional Educational Laboratory to work with educational sites while providing Internet training.

The year long, 1995 study examined, described, and analyzed how the ICF learned basic skills, found time to use Internet, and integrated and applied new skills professionally. The study also examined what role the partnership between the outside agency and the ICF played to provide professional development and educational change at the site. The success of a turn-key model to disseminate the use of Internet to others was analyzed.

The results of the year-long study suggested that end users learned to use and apply Internet when the following factors are addressed:

1. **Access:** There is a dependable, consistent, and secure connection to Internet.
2. **Skill Building:** End users' skills are built through practice using telecommunication tools that align professional goals, school curriculum and classroom strategies with student needs for increased learning.
3. **Ongoing Support:** provided by an outside agency that is responsive. This supports users' risk taking and serves to inform and enhance systemic change.

Limitations recognized by participants concerned:

1. **Equity:** All participants were already in possession of computer hardware. This led to participants' concerns about schools being unable to participate if they didn't have basic equipment.
2. **Time:** More time was needed for initial training of basic skills and for practice, planning and integration into classroom activities,
3. **Costs:** If costs were not covered initially by outside funds, participation would have been impossible.

Update

Seven years after the initial study when each of the Internal Change Agents were given their first Internet account, each site was revisited to determine what happened since the original study was completed. Goss and Kinslow contacted each of the original ICFs, initially through e-mail, requesting that the participants answer the same survey that was used to collect data in 1993; additionally, each was asked to reply to an on-line survey, http://www.cyberseedannie.org/survey

Survey Questions:

1. Current Use: Have you been using your Internet connection? How? If not, why not? Problems?
2. Intended Use This Year: How do you envision your use this year? Who do you expect to train at your site? Have you devised a plan?
3. Linkage/Relevance at Site: Is the use of Internet connected to any initiatives currently focus on in the school? Has Internet fit in with the current plans of teachers or staff developers at your school?

4. Internal Support: Has the school administration supported or acknowledged your work with Internet? How about next year? What feedback do you get from administration? What does administration do to support new initiatives?
5. External Support: What support systems do you use? What support are you looking for in order to accomplish your goals?

Survey Replies:
The following is a selection of replies received for each survey question from participants.

1. Current Use:

D.B. "Over the past 7 years I have probably trained and coordinated thousands of educators throughout the state of New Jersey. I have worked in three school districts these past 7 years and have been active on the county technology consortium. I can't even imagine creating a training session involving curriculum that does not include a component of the Internet. As director of the Gloucester County ETTC for the past 2 years, I have worked with 28 public school districts employing over 3500 professional staff."

P.B. "I can't begin to capture the growth and knowledge gained since I first stood with glazed eyes as your captured telnet site whizzed by on my ancient MAC. Two web sites, status as a mail administrator, training to assist with network administration, maintaining a mailing list, adding a whiteboard to our website, hundreds of training workshops for teachers, presentations at major conferences, electronic databases, software preview center - all things that I believe came out of that pilot! Who would've thought..."

C.S. "As Curricular Technology Specialist for Germantown Academy, I assist teachers (150) in their efforts to integrate technology into the curriculum. I conduct large group staff development workshops, plan and develop technology integrated lesson plans with individual teachers, assist with classes as they implement technology integration, or develop application specific tutorials and rubrics to be used by teachers and students. This experience, along with the many in-service workshops I have conducted for my regional Intermediate Unit, the state technology initiative, "Link to Learn," regional district technology days, and presentations I have given at Connected Classroom Conferences in Los Angeles, Valley Forge, Atlantic City, Baltimore, and Chicago, SITE'98, PETC '98, PETC'99, Tel.Ed '98, South African NECC'98 and NECC'99 qualify me to give this workshop....my work and that of my colleagues at Germantown Academy is being used by the Link 2 Learn initiative of Pennsylvania as a prototype for other teachers and my curricular technology site, http://www.ga.k12.pa.us/curtech/curtech.htm, is being included on a new CD to help educators in their integration efforts."

H.J. "Yes, we've been using the Internet connection. Every IU employee (approximately 150) at this site has Internet to their desktop. They have been trained. Our internal mail is through the Internet. Many people use Internet web sites as part of their daily work. (equipment specs, special needs information, PDE information, USDOE, vendors, grant info.....)"

S.L. "We use our Internet connection every day. Teachers are constantly in the office looking up info on the Internet. In addition, many students come in, not only from science classes, to research topics for their papers and reports. It is used more than in the past!"

2. Intended Use This Year

S.L. "I am going to show my classes and other science classes how to use the Internet. I will go into the classrooms with a large screen TV and Internet hookup. This should increase our use greatly. I am also planning a workshop for teachers on how they can build a web page."

H.J. "The MCIU consortium has grown to include 16
public school districts, AVTS and private schools connected via T-1 lines. This year, we are upgrading those lines and will have dedicated T-1 lines and a 10 mb SMDS line to the Internet. There are approximately 12,000 computers on this network."

3. Linkage/Relevance at Site

S.L. "Nothing formal has been established in our school."

H.J. "Schools and districts use the connections for classroom projects, CU-SeeMe, administrative tasks, and a wide variety of functional uses. Training for the Internet is on-going. We have training for support and administrative staff as well as instructional staff. Training materials are posted on the web for district trainers to use. The MCIU website has them posted at the following location: http://mciunix.mciu.k12.pa.us/~tech/ITS/ProfDev/wrkshmat.html#Handouts. In addition, the MCIU technology committee produced a series of competency checklists for staff to self determine what workshops they should enroll in to learn technology skills (also posted on the website)."

4. Internal Support

H.J. "The MCIU administration fully supports the Internet node for the county and has provided additional funding when needed. We have upgraded the network several times over the past few years and have had no problems getting our plans through. The MCIU webpage is robust and reflects the internal support through the IU divisions of the Internet connection."

S.L. "We have support from central office. Administration at our school encourages its use! They do provide funding for Internet projects. In addition, we have a technology committee which is responsible for bringing an Internet lab into our school."

5. External Support

D.B. "Technical. Administrative. Government. Business. Technical because valuable time is lost when the technology is not working. Having the educational technology specialists in a building use their time to "fix" problems is a horrible waste of time, money, and talent. Districts need to understand when they purchase the tools they need to budget for the technical support and not rely on in-school support. Administrative support is imperative in order for any educational technology goals to be achieved. Government needs to assist the districts caught in the middle - - too poor to receive generous gifts of support from their community - - too rich to receive the dollars doled out to help disadvantaged students. The schools caught in the middle stagnate due to the "middle class" dilemma. Business needs to lend a hand. There are many ways to forge partnerships with schools. Business is now having to take graduates and train them. Business has to help schools prepare their incoming employees."

H.J . "We have good technical support through vendors and consultants, curricular support through other professional collaborations. Many MCIU staff members are trail blazers and work out problems to facilitate use of the Internet by educators throughout the county."

Analysis

All replies were analyzed looking for patterns which would help identify recurring themes or indicators. By comparing these themes with the results from the first (1995) study, a set of consistent indicators for success begin to emerge as a series of benchmarks. These benchmarks would help identify the necessary guideposts an educational site would use in order for one person at their site to have a positive impact for disseminating Internet use.

Analysis through triangulation identified the following indicators of successful systemic and turn-key use of turn-key dissemination of Internet through an educational site. These benchmarks appear to be important to help other sites successfully plan and initiate Internet use by replicating the successes of these pilot sites that have had sustained success. Save time and money.

The following benchmarks are indicators of successful turn-key technology integration:

1. Professional development programs are based on research, guided by an Internal Change Facilitator, in response to identified needs and aligned with curriculum.

2. Long term and short term technology integration plans are actively supported and funded by efforts of administration and other policy makers.
3. Outside Partnerships exist for successful grant writing, tech support, sustaining infrastructure and professional development, catalyzing and energizing internal efforts.
4. On-going assessment and evaluation is readily available to discern the impact of technology use.
5. Opportunities to tell their story through showcases, newsletters, conference appearances, and personal contacts.

These findings confirm the results of the earlier 1995 study with additional insights.

There is a direct relationship between the identified benchmarks and an ICF's ability to integrate technology systemically at an educational site. The ICF at sites without active administrative support dramatically struggle to disseminate the use of technology. Although, each pilot site's liaison is a dedicated user of Internet and an enthusiastic supporter of its integration into every classroom, without administrative support the barriers to systemic dissemination are too great for any individual to overcome.

Each Internal Change Facilitator has become a leader directly responsible for the professional development of many more teachers than were involved in the original 1995 pilot study. As a result of efforts through the application of "turn-key" methods for dissemination of Internet knowledge and skills, there are now thousands of teachers involved in regional school improvement efforts through technology integration, and especially through the use of Internet.

Closing Comments

In a 1995 study of turn-key users of Internet, five key factors emerged that determined the success of their scale-up efforts.

Research has shown that turn-key training, when used effectively, can help scale-up or increase the effective use of technology innovations in education (Joyce and Showers, 1988; Fullan & Miles,1992; Scrogan, L., 1997). Results from this study confirm that professional development focused on the use of Internet is a catalyst to dissemination of systemic Internet use for distribution of resources for students and teachers.

This follow-up study revisits those early Internet adopters. Through analysis of survey and interview data, this study sheds additional light on earlier findings, while illuminating the successes of those with broad-based administrative support and a thoughtful technology dissemination plan.

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