DISTANCE LEARNING

... For Educators, Trainers, and Leaders

In this issue the spotlight is on

The Democractic Republic of Congo

DISTANCE LEARNING

FEATURED ARTICLES

COLUMNS

MANUSCRIPT PREPARATION GUIDELINES

Distance Learning is for leaders, practitioners, and decision makers in the fields of distance learning, e-learning, telecommunications, and related areas. It is a professional journal with applicable information for those involved in providing instruction of all kinds to learners of all ages using telecommunications technologies. Articles are written by practitioners for practitioners with the intent of providing usable information and ideas. Articles are accepted from authors with interesting and important information about the effective practice of distance teaching and learning. No page costs are charged authors, nor are stipends paid. Two copies of the issue with the author's article will be provided. Reprints will also be available.

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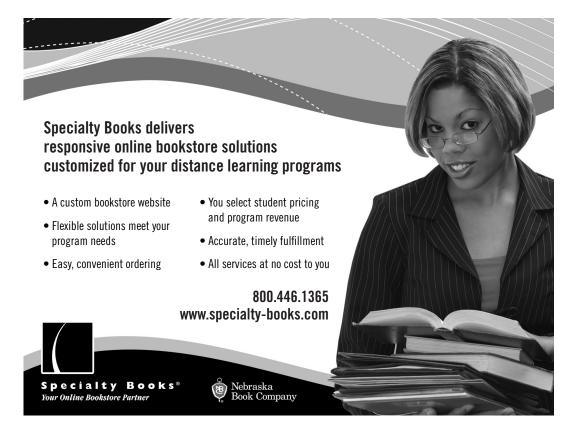
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Increasing Need for Distance Learning in the Democratic Republic of Congo

Banza Nsomwe-a-nfunkwa and Galekwa Vudawe

INTRODUCTION

The Democratic Republic of Congo, a country with 60 million people, has 450 institutes of higher education and universities; however, it only has 1500 university professors.

The need for distance learning is constantly increasing for many reasons, such as the exigency of the evolution of the work market, new content of learning requested by the population who are not currently in the Congolese educational system, the advantages of distance learning seen by busy workers in the way to learn at a convenient time, pressure created by the economic situation and social need, and the quick evolution of information and communication technologies. In a way to satisfy the population in need of learning, the Democratic Republic of Congo is experimenting with its first experiences in organizing distance learning. From our experience, we agree with all of those arguing that the training of information and communication technology (ICT) users is one of the important points of departure.

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CONGOLESE EXPERIENCES IN DISTANCE LEARNING

The Democratic Republic of Congo is in its first step in the area of using the new information and communication technologies. To enable people in the good use of ICT, there have been some seminars in ICT training.

Module of Transfer in Educational Technology

Organized by CNF (francophone Digital Campus) of Kinshasa, in this module attention was focused on the conception, development, and use of distance and open teaching. As a result, 78 professors were trained and ready to use the ICT in distance education.

Micro Program in Pedagogical Integration, 2006-2007

Seven Congolese were admitted to this program on the pedagogical integration of ICT with the University of Montreal. At the end, all seven students were assessed and obtained their diploma.

Use of ICT for Teaching and Training with the University of Strasbourg

Two Congolese students were candidates for this distance learning in the use of ICT for teaching and training with the University of Strasbourg. At the end of this program, both students were assessed and attained the degree of Professional Master from the University of Strasbourg.

Learn nett Experience

The project Learn nett is a European framework of teachers and future teachers training in the pedagogical use of ICT. The main focus of this project was to allow teachers and students to know how to learn by collaborating from a distance with other future teachers, trainers, etc.

For the period of 2006-2007, two professors and four students from the Faculty of Psychology and Educational Sciences of Kinshasa University, Democratic Republic of Congo, participated in this experience with eight other European universities (Universite Haute-Alsace Mulhouse (France), Universite Louis Pasteur Strasbourg (France), Université de Franche Comte-Besancon (France), Université de Geneve (Switzerland), Université de Fribourg (Switzerland), Université de Liege (Belgium), Université Catholique de Louvain-Lauvain la neuve (Belgium), and Université de Mons Hainaut- Mons (Belgium).

University Training

With funding from VLIR and CUD (Belgian NGO) the French digital campus of Kinshasa organized a training session of future informatics responsible from nine Congolese universities. This training session was also extended to another country (Burundi) for the participants to learn something on the conception and the location of intranet, the configuration and management of the Internet connection, the design of computer pools, administrative management of the computer center, how to repair and maintain the equipment, and how to offer technical assistance to the ICT project.

As a result, 19 technicians were trained and ready to help.

Training Project RIFEFF

Three Congolese universities became members of the French International network of training of trainers institutions from this project; the aim was to train Congolese professors in the use of ICT, resulting in 150 Congolese professors being trained in the pedagogical integration of ICT by the end of 2008.

Project "Portail EB@LE"

This project has the aim of interconnecting the universities of the Democratic Republic of Congo for education and research (RENATER, Belnet, or Geant2).

This network will allow national universities to cooperate and collaborate between themselves, and also with international universities and institutions. It will allow online publication, communication between actors and partners, to allow

reports of universities, annuaries of researchers on line.

CASE STUDY OF DISTANCE LEARNING OF FRENCH DIGITAL CAMPUS OF KINSHASA STATISTICS OF STUDENT ADMISSION (2004-2008)

We started with only 106 students in 2004; in 2005, we had 184; in 2006, we had 127; in 2007, the campus numbered 246 students; and in 2008, enrollment reached 236 (see Table 1). In terms of the need for distance learning, we believe that it is growing step by step.

The number of students in law has fluctuated—from 49 in 2004 to 80 in 2007 (see Table 2).

The number of students enrolled in life and ground sciences has grown year by year, from no students in 2004 to 85 students in 2008 (see Table 3).

However, the number of students admitted in fundamental sciences has

remained small, from 6 students in 2004 to no students in 2005, with no 6 students in 2008. This situation may be connected to the lack of interest in this area or may be the lack of distance teachers (see Table 4).

The number of students admitted in engineering sciences and ICT has increased year by year—from 25 students in 2004 to 59 in 2008. This may be because students really need to learn something connected to their jobs (see Table 5).

The number of admitted students in sciences and ICT has fluctuated, beginning with 15 students in 2004 and ending with 14 students in 2008. However, there were 30 students in 2005 and 22 students in 2006 and 2007. This fluctuation of student numbers should be connected to the need of learners (see Table 6).

From 11 students in 2004, the number of admitted students in teaching and training increased in to 28 in 2006 dropped to 0 in 2007, and rebounded to 14 students in 2008. The number of students admitted in

Table 1. Enrollment of the French Digital Campus of Kinshasa

Years	Number of Students
2004	106
2005	184
2006	127
2007	246
2008	236

Table 2. Law School Enrollment

Years	Number of Students
2004	49
2005	72
2006	60
2007	80
2008	68

Table 3. Enrollment in Life and Ground Sciences

Years	Number of Students
2004	0
2005	1
2006	44
2007	68
2008	85

Table 4. Admitted Students in Fundamental Sciences

Years	Number of Students
2004	6
2005	0
2006	2
2007	7
2008	3

Table 5.   Admitted Students in Engineering Sciences and ICT

Years	Number of Students
2004	25
2005	23
2006	53
2007	55
2008	59

Table 6.   Admitted Students in Sciences and ICT

Years	Number of Students
2004	15
2005	30
2006	22
2007	22
2008	14

Table 7.   Admitted Students in Teaching and Training

Years	Number of Students
2004	11
2005	17
2006	28
2007	0
2008	14

this area expresses in some ways the need of people to learn by distance (see Table 7).

LESSONS LEARNED

The discovery is that from the Congolese experience in distance education, we learned a lot of new things we hope to share with others in developing countries such as the Democratic Republic of Congo. Taking into account the realities of each developing country, we think that for the good success of distance learning, the distance education designer has to think firstly about the plan of integration of ICT in distance learning, secondly the diffusion of information about ICT, thirdly about equipment and software, fourthly training of ICT users. In the case of the Democratic Republic of Congo, we still face the huge problem of user ICT literacy.

We are really convinced today that the equipment is not the first point of distance learning, because we currently have some machines not yet used and still in boxes, but the users suffer "technophobia" with regards to the use of ICT in distance learning.

Also, for the good success of distance learning, we believe that the instructional designer of distance education should be qualified in the area. The design curriculum for distance education should be also interesting, functional and responding to the needs of the learners. That is why we believe that the training of users is one of the key points for the use of distance learning in the Democratic Republic of Congo.
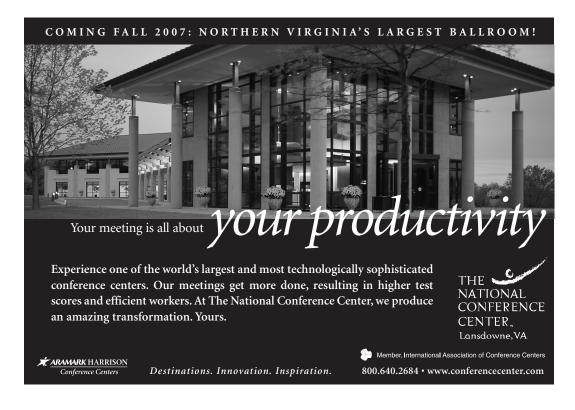
CONCLUSION

The Democratic Republic of Congo is in its first step on the long way to the effective use of ICT in distance learning in both urban and rural areas. From our trials and errors, we think that the distance educa-

tion designer should think about the plan of integration, the diffusion of information about ICT in distance learning, the equipment and software, and about training of ICT users for the effective use of ICT in distance learning.

REFERENCES

Agence Universitaire de la Francophone. (2008). *Campus numérique de Kinshasa.* Retrieved November 10, 2008, from http://www.cd.refer.org

Nsomwe-a-nfukwa, B. (2006). New Information and Communication Technologies in the Democratic Republic of Congo: strategies and measures. *Turkish Online Journal of Educational Technology, 5*(2). http://www.tojet.net/articles/525.htm

Nsomwe-a-nfunkwa, B. (2006). Are the rural schools of the Democratic Republic of Congo ready for the $100 laptop? *Turkish Online Journal of Educational Technology, 5*(4). http://www.tojet.net/articles/543.htm

ePortfolio
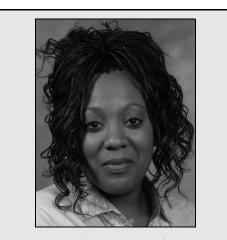
Action Research Team Professional Development Plan

Aries Cobb

INTRODUCTION

The director of technology integration at the Cleveland Metropolitan School District (CMSD) has assigned Aries Cobb, the lead professional development (PD) facilitator for technology integration, to use the problem-based learning model to continue the Enhancing Education Through Technology (EETT) project. Cobb, a grant writer, staff developer, and principal investigator of EETT, has created a new learning experience entitled ePortfolio: Action Research Team Professional Development Plan for the 2008–2009 school year for 25 teaching professionals at a targeted school in the CMSD. The targeted school has not met Academic Yearly Progress (AYP) for 3 or more years. The problem-based learning model is used for each school that has a technology integration program that is not working effectively in an effort to address the problem by examining teacher pedagogical beliefs and classroom technology use to enhance student technological literacy and reading achievement. A description and a PD design are outlined with a literature review for PD suggestions for the future.

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STATEMENT OF THE PROBLEM

In the past, the EETT program was used to assist teachers and students to achieve higher scores on the Ohio Achievement Test in reading. Both students and teachers in the 2006–2007 report on EETT in selected schools in the district (CMSD Office of Research and Assessment, 2007) showed "statistically significant gains in technological skills that are complemented by integration of technology into practice. All student groups showed gains in technological literacy from winter to spring of the 2006-2007 academic year" (p. 4).

However, students in kindergarten through Grade 2 showed the greatest gains in technological literacy and reading achievement. Students in Grades 3-8 showed little significant gain in technological literacy and reading achievement.

Teachers in Grades 3-8 failed to report a comfort level in integrating technology in the classroom. The CMSD Office of Research and Assessment (2007) found a correlation between teacher technology integration practice and teacher beliefs about exemplary technology usage.

A Framework for Designing PD

The National Staff Development Council (NSDC, 2003) staff development standards are grounded in research that documents the connection between staff development and student learning. The standards are organized into context standards, process standards, and content standards. The goals for the ePortfolio: Action Research Team Professional Development Plan is described in three stages of implementation of each descriptor (see Table 1).

Learning Experience Design

The NSDC (2004) stated, "Staff development that improves the learning of all students organizes adults into teaching communities whose goals are aligned with those of the school and district" (p. 13). According to Fogarty and Pete (2007), "Whatever the focus, action research is a proudly rewarding experience for teachers because of its immediacy to their needs. There is a host of ways to organize teachers into focus groups" (p. 152). Five types of action research teams are used in the CMSD: action research team; committees; Critical Friends Group; curriculum commit-

tee; and department, team, and grade-level meetings. Action research teams use data to attain results, increase student achievement, and enhance teaching practices by changing teacher beliefs about best practice.

The action research team at each targeted school is inquiry based. The teachers and the students explore how to achieve based on their own inquiries. The action research team conducts research focused on the needs of the students and staff. The team is a small group of staff in the school building. The leadership is defined in the group. In other words, each team member has a defined role in the action research. The research is based on the achievement of the students. The group outlines learning goals for the students and the teaching staff. The group uses best practices and the latest trends in education. The members of the group volunteer to participate in the project. The knowledge acquired by the group through action research creates knowledge in action. Action research teams are a part of a professional learning community (PLC).

Standards and Criteria of the NSDC

According to the NSDC (2003) standards, the goal of PD is increased student learning. Fogarty and Pete (2007) have provided a guide to sustained professional learning. According to Fogarty and Pete (2007), teachers and administrators collaborate with each other because "learning thrives when the conditions are right … with con-

Table 1. Goals of ePortfolio

Context	Data is always on the table in some form and members hold themselves accountable for attaining results.
Process	The study group uses a common classroom assessment to collect baseline data, monitor student progress every 6 to 12 weeks, and assess results at the end of the year on the study groups' chosen student learning needs.
Content	Working together on the development of all lesson components together, demonstrating, and debriefing results together to change teacher pedagogical beliefs to enhance student achievement.

Note: Aligned with National Staff Development Council standards.

sistency, with continuity, and with a coveted commitment" (p. 139). PLC meetings focus on what needs to be done and what needs to be learned to change the way the teachers facilitate instruction. The main focus of the PLC is PD. The teachers collaborate to become better instructors to enhance student learning.
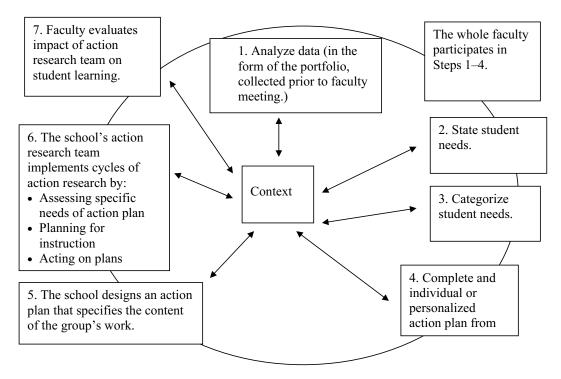
THE ROLE OF THE FACILITATOR

According to Fogarty and Pete (2007),

> The role of the facilitator is to vigorously participate through collaborative structures of the Action Research Team. The facilitator participates in the communication by monitoring interventions within the Action Research Team, and facilitating questions. The facilitator interprets the results of the collaborations using research-based strategies, confer how the team works. (p. 109)

DATA SOURCE: EPORTFOLIO

The new learning experience is planned to address teachers' belief about exemplary technology use in an effort to increase teaching and learning. According to the Center for Curriculum and Assessment (2003), an electronic portfolio (ePortfolio) is a collection produced by the writer; in the digital portfolios, this work is stored in an electronic format and accessible through the Internet or a portable electronic storage device, such as a CD. EPortfolios consist of audio clips, video, links to other media,

Lastly, the staff developer is a coach. The instructor of PD works through the situations in the action research team by counseling the participants. The intuitive coach knows how to intercede and expand on the PD process. The decision-making process is illustrated in Figure 1 and Table 2.

Source: Murphy and Lick (2005). Copyright 2005 by the Corwin Press.

Figure 1.   Implementation phase of the decision-making process.

Table 2.   Decision-Making Cycle Timeline

Decision-Making Cycle	Description	Time Frame
1. Analyze data.	The action research team looks at student data. The leader in each group gives each person one piece of data to analyze. The members look for pattern and trends, gaps or anomalies, area of strength and areas of weakness. Engage in a discussion about the different pieces of data.	30 minutes
2. State student needs.	Make a list of student needs based on the data. Each table makes a list of student needs. Discuss the list. Compile the individual list into one master list and give each participant a copy.	30 minutes
3. Categorize student needs	Categorize the student needs by sorting the needs into groups by theme or benchmark. Discuss the different categories.	1 hour
4. Write an action plan for yourself	Write an action plan for individual needs and student needs. Each action plan is targeted to the specific needs of the teacher and the students. • Write an essential question about what you would like to investigate. • Two specific student needs	1 hour
5. Form action research team.	Each individual reads his/her essential question and two specific student needs. Categorize individuals in groups based on their needs. Each group should have 3–5 participants. End session with whole faculty.	1–2 hours
6. Develop action research team action plans	• List the student needs • Use data sources that track current progress (observation checklist, etc.) • For each need, write what data indicate in the current status of the need. • For each need, write what you want data to indicate at the end of the action research team's work. • After 6–12 weeks of action research teamwork, write what the new data show.	6–12 study sessions

Source: Murphy and Lick (2005). Copyright 2005 by the Corwin Press.

multiple connections with hyperlinks, and other digital features illustrating the author's achievement. The staff developer decides to use ePortfolios to facilitate the teacher's integration of content and to provide a means of evaluating positive teacher beliefs about integrating technology in the classroom. The ePortfolio is used as a tool to watch teacher beliefs change from ineffective technology integration to exemplary technology integration into the classroom matriculate.

The ePortfolio is a reflective tool that is a collection of artifacts; that is, student work samples and teacher planning tools (Center for Curriculum and Assessment, 2003). Each artifact in the portfolio contains a description and a reflection by the teacher. EPortfolios are useful because a sample of the student work is analyzed against a rubric to identify student-learning needs and to motivate teachers to integrate technology in the classroom and as a result develop exemplary technology use and support teacher comfort level and positive beliefs about technology use. The rubric is set up in five categories: artifacts and written communication; reflections; use of multimedia, captions, and ease of navigation; layout and text elements; and writing

mechanics. Teachers are able to reflect on student work. Exemplary technology use is discussed by the action research team. Teachers develop a list of technological resources that change the educators' beliefs about using technology in the classroom.

MAJOR STRENGTHS

There are a number of rewards when working in a PLC. The rewards are based on the strength of the group. Teachers give one another support. The action research team meets regularly to plan how to achieve better student achievement. Fogarty and Pete (2007) stated, "For the teachers who are passionate about the work they do, there is no greater joy than to give something back to the profession" (p. 153).

Action research teams are change agents. It is beneficial for teachers to work in PLCs when they are working on lessons that promote student achievement. Teachers are motivated to work in action research teams when they are working toward initiating best practices. Teachers are rewarded with teaching that increases student achievement. Fogarty and Pete (2007) suggested coaches work with teachers and observed, "These practitioners are doing something they love doing, something they cannot imagine not doing" (p. 145). Furthermore, the PLC assists teachers in developing exemplary lessons and changing teachers' belief about best practices.

STRATEGIES TO MINIMIZE RESISTANCE

It is important for the leader in the school to create a comfortable climate. According to Tallerico (2005), teachers will be less reluctant to participate in PD when the climate of the school promotes success. In my own building I am not so sure that the teachers feel as if they are in a climate where they feel appreciated. The principal

in this case should encourage the staff when they are working toward a goal of the school. Also, the principal should offer suggestions when the teacher is struggling to meet the needs of the students or his or her own professional needs and deadlines.

According to Tallerico (2005), the principal should expect to meet some resistance when teachers are asked to change teaching practices. An effective principal will listen closely to all the concerns of the staff and address them individually to assure the teacher why the change is necessary. It is effective practice to demonstrate or to show the staff how the new practice can change student achievement. The best way for the school leader to do this is to point out other professionals in the field who are using the techniques and how the techniques have benefited the staff and the students.

Major obstacles in the school reform effort are (a) lack of agreement on what to do to in staff development and how the sessions are designed and (b) what the teachers should do as a result of the staff development. Resistance by the teachers is mainly because teachers feel nervous about change, teachers feel ambiguity about whether the new curricula will increase student achievement, and teachers want to know if the cost for materials to implement the change will come from the teacher or the school budget.

Teachers engage in discussions in their targeted grade-level groups. The staff is able to come to consensus. Inquired costs will come from the Title II budget for PD, and materials of the change will be purchased out of that school budget. Teachers will not have any additional costs to implement the change.

Strategies to minimize resistance are based on Tallerico's (2005) suggestion that teachers who share in leadership, planning, and designing the change effort are enthusiastically involved in decisions about the classrooms. Furthermore, Tallerico suggested PD that presents teachers

with a lead role in designing instructional assists teachers in preparing to implement the change effort. Teacher should have time to collaborate. Teachers who have opportunities to work in action research teams are occupied in a potent form of staff development that allows participants to address issues related to the new content and instructional processes (Killion, 2002).

FIVE LEVELS OF PD EVALUATION

Guskey (as cited in Tallerico, 2005) identified five levels of PD evaluation. The evaluation of the PD is reflective of the implementation and the design of the PD (see Table 3).

The Chronological Sequence for Conducting Evaluation is a tool used to measure the effectiveness of the PD. Teacher reactions, teacher learning, organizational support and change, teacher use of new knowledge and skills, and student learning outcomes are examined in an effort to use the evaluation data in future PD efforts. The participants have time to reflect on the learning of both the teaching staff and the students. The PD facilitator will use the data to design new PD for future action research.

CONCLUSION

Wiburg and Brown (2007) implied that high-quality technology PD is designed to empower with the skills necessary to use technology to foster exemplary learning environments. This paper is most effective in assisting teachers as leaders in developing PLC to form policies to increase student achievement. According to Anderson and Dexter (2000), technology leaders make decisions in a committee. The school with a PLC has strong leadership. Teachers will learn how to effectively integrate technology in the classroom with high-quality PD by working in a PLC. A technology leader can use this report as a model for high-quality PD.

REFERENCES

Anderson, R., & Dexter, S. (2000). *School technology leadership incidence and impact: Teaching, learning and computing* (1998 National Survey Report No. 6). Irvine, CA: Center for Research on Information Technology and Organizations.

Center for Curriculum and Assessment. (2003). *Academic content standards: K–12 technology.* Columbus: Ohio Department of Education.

Cleveland Metropolitan School District Office of Research and Assessment. (2007). *Documenting outcomes from EETT to selected schools of the Cleveland Metropolitan School District:*

Table 3.   Chronological Sequence for Conducting Evaluation

Level of Evaluation	Details
1. Teacher reactions	Was their time well spent? Did the material make sense? Will it be useful?
2. Teacher learning	Did participants acquire the intended knowledge? Did participants acquire the intended skills?
3. Organizational support and change	Were problems addressed? Were sufficient resources made available?
4. Teacher use of new knowledge and skills	Did participants effectively apply the new knowledge? Did participants effectively apply the new skills?
5. Student learning outcomes	What was the impact on students? Did it affect student performance or achievement?

Source: Adapted from Tallerico (2005).

Academic year 2006–2007. Cleveland, OH: Cleveland Metropolitan School District.

Fogarty, R., & Pete, B. (2007). *From staff room to classroom: A guide for planning and coaching professional development*. Thousand Oaks, CA: Corwin Press.

Killion, J. (2002). *Assessing impact: Evaluating staff development*. Oxford, OH: National Staff Development Council.

Murphy, C. & Lick, D. (2005). *Whole-faculty study groups*: *Creating professional learning communities that target student learning* (3rd ed.) Thousand Oaks, CA: Corwin Press.

National Staff Development Council. (2003). *Standards for staff development*. Oxford, OH: Author.

National Staff Development Council. (2004, May). *Results*. Oxford, OH: Author.

Tallerico, M. (2005). *Supporting and sustaining teachers' professional development: A principal's guide*. Thousand Oaks, CA: Corwin Press.

Wiburg, K., & Brown, S. (2007). *Lesson study communities: Increasing achieving with diverse students.* Thousand Oaks, CA: Corwin Press.

Using Curriculum Distance Learning Tools to Implement a Districtwide Business IT Project

Daryl Diamond

INTRODUCTION

Broward's Innovative Tool for Education (BRITE) is the Enterprise Resource Planning (ERP) Department's IT project designed to bring one business system to Broward County Public Schools (BCPS). The 3-year initiative that replaces Broward's existing, independent business systems with one integrated system, replaces some legacy systems that are

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more than three decades old. The BRITE project offers easy access to operational and educational information, including single point access and real-time information reporting through the use of SAP 6.0.

The ERP Department works to continually improve the business processes of BCPS. As the assistant director of the ERP Department, my responsibilities are to oversee the organizational change management team and the training and support center staff for the BRITE implementation. The BRITE project updated the school district's current SAP 4.6 Human Resources and Payroll modules to SAP 6.0, while implementing a brand new, fully integrated financial system for budget, materials management, and purchasing. SAP 6.0 delivers a comprehensive set of integrated, cross-functional business processes. With SAP 6.0 our school district benefited through:

- improvement in the efficiency of district operations and in our ability to manage them through an integrated finance and procurement, human resources, and payroll system;
- elimination or reduction in paperwork and redundant manual processes;
- increased accountability and transparency to the public in the use of public funds;

- providing better data for decision makers and stakeholders at all levels;
- development of an integrated Web-based professional development system for both internal employees and external participants; and
- improved service delivery to schools to assist in obtainment of our district's strategic goal of increased student achievement.

My challenge was to determine how to best utilize Web 2.0 and distance learning technologies to manage organizational change while implementing a structured approach to training and transitioning individuals, teams, and the school organization from its current state to the desired future state. Web 2.0 is a living term describing changing trends in the use of World Wide Web technology and Web design that aims to enhance creativity, information sharing, collaboration, and functionality of the Web. Web 2.0 concepts have led to the development and evolution of Web-based communities and hosted services, such as social networking sites, video sharing sites, wikis, and blogs. Web 2.0 has numerous definitions. Basically, the term encompasses the idea of the proliferation of interconnectivity and interactivity of Web-delivered content. Many regard Web 2.0 as business embracing the Web as a platform and using its strengths. Web 2.0 Web sites allow users to do more than just retrieve information.

Besides utilizing SAP 6.0 as the proven foundation for business excellence and innovation, my team looked to proven Web 2.0 and distance learning technologies to assist in the training and support of its end users. Broward County Public Schools has approximately 40,000 employees, all of whom needed to learn how to use the new SAP 6.0 system in some capacity. Training the entire staff on the new SAP system could have been a tremendous stumbling block to the project and its timetable for completion. Success for implementation

hinged on identifying and successfully using twenty-first century technology tools in this process. Using robust technologies such as Remedy Incident Management System, Blackboard Academic Suite, Elluminate Live!, Trainer Blogs, Camtasia Studio screen recorder and presentation software, an interactive project Web site using Web application programming interfaces, and LANDesk software providing system management, security management, and process management, the BRITE project was able to deliver quality and speedy customer service.

INTERACTIVE PROJECT WEB SITE

The BRITE interactive Web site provides standards-based Web resources designed to enhance online learning opportunities for our school district end users. Our interactive Web site was designed to engage participants by providing information and resources along with practice, simulations, and other learning and follow-up activities. These resources include highly interactive, content-rich simulations along with the traditional drill and practice. The SAP 6.0 community interactive Web site is supported by the BRITE project to enable advanced distributed learning and to gain feedback from end users and business process owners. The intention is to bring together both resources (simulations, quick reference guides, tutorials, etc.) and people with similar interests (budget-keepers, requisitioners, payroll contact, human resource actions processor, inservice facilitators, ESS resident experts, etc.) to establish a vibrant community where all work together to share and improve the learning of new business processes. Some of these features include Easy buttons, Ask BRITE Questions, virtual simulations, online training library, work instructions, BRITE LITES and ESS resident experts, BRITE pay calculators, remedy incident management system, Blackboard Academic Suite, Elluminate Live!, BRITE train-

ing blog, Camtasia, LANDesk, and Communicating Across Broward (CAB) Conferences.

EASY BUTTONS

Web sites are designed to offer information and assistance to those who visit the site. The BRITE Web site makes accessing vital information "easy" through its multiple "easy" buttons housed on our Web site's home page. Easy buttons help end users log into the new SAP 6.0 through the BRITE Portal, as well as guide end users to the revised Business Practice Bulletins identifying the changes in district procedures and processes resulting from the new implementation of SAP 6.0. Visit our homepage at http://www.broward.k12.fl.us/erp

ASK BRITE QUESTIONS

This feature is an online database enabling end users to post general and specific questions on any of the implemented modules (budget, finance, payroll, human resources) along with their contact information. Behind the scene (called Inside ERP), the project team reviews these questions daily and provides answers to them directly onto the database. These, in turn, automatically generate the FAQs that are housed on the Web site under the appropriate project module. Having questions date-stamped assists end users in identifying more current questions and answers. View our database at http://www.broward.k12.fl.us/erp/brite/contactus/comments.asp

VIRTUAL SIMULATIONS

Housed on our BRITE Web site are virtual simulations created to imitate many of the system transactions that end users process while doing their daily job functions. The simulations are so close to actually being in the SAP 6.0 system, it is difficult for end users to tell the difference. By fol-

lowing step-by-step guided instructions, end users get a chance to practice within a training environment that has the same look and feel as the real system. The simulations are created by a product called RWD Info Pak. Using RWD Info Pak you can create procedural documentation automatically. A content developer simply runs a business task in the application software that is being documented. RWD Info Pak captures each step, and then converts the process into professionally formatted documentation. Documents can then be printed and used for training and reference purposes, or published to our Web-based online help system through which users can quickly access the most current support documentation. View our simulations at: http://www.broward.k12.fl.us/erpdb/brite/onlinelibrary/sims/index.html

ONLINE TRAINING LIBRARY

All face-to-face training and Elluminate Live! sessions offer training manuals for end users to reference after training has completed and they are back at their work locations. However, with an implementation of this magnitude, system changes, new configuration, and the application of additional transactions require constant updating of training material. Our online training library enables us to offer the most current up-to-date material for all BRITE training courses. These courses are stored as either .pdf files or PowerPoint presentations. View our online training library at: http://www.broward.k12.fl.us/erpdb/brite/onlinelibrary/

WORK INSTRUCTIONS

The BRITE work instructions are located on our interactive Web site and are designed to help end users with work-related tasks right at their own desktops. The detailed work instructions can be accessed by either Process (finance, budget, purchasing), Role (budgetkeeper, cafeteria manager, grant monitor, etc.), or

Transaction (a specific transaction that is conducted inside SAP 6.0). Work instructions can be displayed as either a cue card without screen shots, or as work instructions in .html or .pdf formats that display accompanying screen shots. These work instructions constitute a complete online library of just-in-time reference guides for all of the finance modules implemented in SAP 6.0. View our work instructions at: http://www.broward.k12.fl.us/erp/infopak/nav/

BRITE LITES AND ESS RESIDENT EXPERTS

How does the sixth-largest school district in the nation build capacity and expertise throughout the organization after the implementation of an IT project of this magnitude? A common factor in successful large scale software implementations is providing a combination of adequate training and support to end users. All of the SAP 6.0 end users received quality training, but they also needed a solid support system. Part of the support system was our BRITE Support Center, but the project also needed to provide "go to" people in the field in addition to the support center. These "go to" individuals were called BRITE LITES (Leaders in Training, Education, and Support), and were selected for each 28 school zones and major department areas. In addition to performing their normal job and providing 12 months of support to other end users in their zone or department, BRITE LITES participated in pilot training and testing.

The BRITE team engaged approximately 275 BRITE LITES and through training and support created a learning community that uses the interactive Web site as a tool to communicate with their cadre of trained professionals. An entire page has been dedicated to informing the school district about the BRITE LITES program, a listing of the current BRITE LITES by zone, and monthly BRITE LITES updates. View our BRITE LITES Web page at http://www.broward.k12.fl.us/erp/brite/lights/members.htm

BRITE PAY CALCULATORS

While SAP 6.0 enabled the implementation of a fully integrated financial system, it also required the school district to change its practice of paying employees in advance of actual days worked. By implementing a "Perpetual Calendar" that crosses over fiscal years without interruption and is not tied to the school calendar, pay periods consist of 14 calendar days and are always paid on the Friday after the pay period ends. This is a significant advantage for district employees because the pay schedule will remain constant—even during holiday breaks, and is predictable for years to come. By combining the Perpetual Calendar with an "All Days Paid" payroll concept, the district is establishing regular pay periods with consistent pay dates every other Friday. This system benefits all employees by creating a standard payroll system across the district which pays employees for the work they have already performed, and not in advance, as was the previous practice.

We were now faced with the task of educating and enabling employees to determine what their first three paychecks in the new financial system would be under the Perpetual Calendar and All Days Paid concepts. Again we used our interactive Web site to create a Web application programming interface (API), a pay calculator; where individuals selected their yearly calendar, and by placing their annual salary into the calculator, determined their gross pay for those three pay periods. The payroll calculator provided comfort, relief, and acceptance of a new payroll system within the knowledge that users could determine whether the system paid them correctly. See the payroll calculator screen in Figure 1.
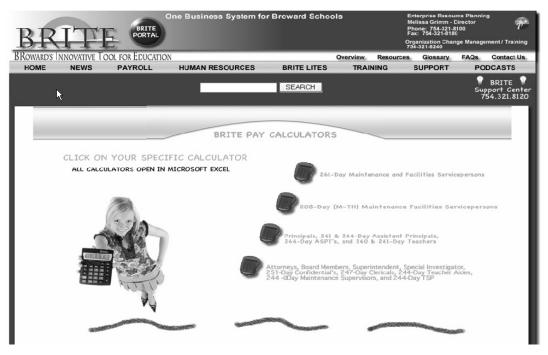
Figure 1. BRITE Pay Calculator.

REMEDY INCIDENT MANAGEMENT SYSTEM

Remedy Incident Management System is an escalation tool that helps to monitor, track, and react to high priority items resulting from project implementation. Its Web-based functionality enables multiple personnel to work on incident tickets simultaneously through task assignments and sign-offs. Multiple users can be situated anytime, anywhere there is an Internet connection, and immediately become part of the resolution team. Implementing this incident management system is an Information Technology Infrastructure Library (ITIL) best practice for resolving end user requests for service and restoring normal service operation as quickly as possible in the event of an interruption. Using this tool, the BRITE project was able to ensure the best use of resources in support of the success of end users and the school district, to develop and maintain meaningful records of all incidents, and to devise and apply a consistent approach to all reported incidents. Incident management included incident detection and recording, classification of incidents and initial support, investigation and diagnosis, resolution and recovery, incident closure, and incident ownership, monitoring, tracking, and communication. By utilizing this incident resolution technology tool, BCPS was able to focus on the end user and collect rich data for use in developing processes that preempt interruptions to service or process errors that result in calls for assistance.

BLACKBOARD ACADEMIC SUITE

The BRITE project utilized the district-wide licensing of the Blackboard Academic Suite to deliver online courses for professional development opportunities, training staff on SAP 6.0 functionalities relating to the roles of budgetkeeper, requisitioner, payroll contact, human resource action processor, and employee self service (ESS).

All 40,000 BCPS employees needed to learn how to access and use ESS to update their personal (including banking information) and payment records. With gasoline prices still uncomfortably high, and with school and department-based personnel increasingly unable to leave their work locations, our school district professionals were looking to distance learning as the means to access the information they needed to continue to conduct their business.

Blackboard Academic Suite was the platform used for the projects eLearning courses. The eLearning approach facilitated end users in becoming familiar with the pre-requisites necessary prior to their face-to-face training. It enabled everyone to be on an even playing field when they arrived at the training lab. With its management system, the district was able to account for all individuals who were required to participate in preparatory training. It enabled the BRITE project to increase districtwide adoption of the SAP 6.0 "technology" implementation by using a "technology" tool in training, drive student engagement by offering training at the convenience of the end user, securely share and collaborate around content across the school district, and meet diverse needs and various learning styles of our staff. Visit our Broward County Blackboard Virtual Community at: http://broward .blackboard.com/webapps/portal/ frameset.jsp

ELLUMINATE LIVE!

Elluminate Live! is the electronic tool we used to reach the large volume of individuals needing just-in-time training. The software application puts the instructor in one place, the end users elsewhere—wherever it is convenient—and then the training begins. The software is compatible with all platforms, and the technology enables sessions to be recorded for future viewing. With limited training labs and trainers, Elluminate enabled the district to:

- add live interaction to distance education, where trainers can be seen and heard while demonstrating lessons during a real-time online class;
- extend the boundaries of the physical training classroom;
- engage more students in more ways, training hundreds of end users simultaneously;
- promote active learning by enabling end users to take over the desktop to demonstrate their problems, use the chat and audio features to participate in discussions, and watch instruction conducted on one computer while doing their own work on another computer
- create reusable learning objects through its recording functionality;
- foster social networking with participants;
- connect individuals in a blended environment, synchronously with each other and the trainer while being at any location convenient to them; and
- enhance collaboration with trainers, as trainers watched other trainers in the delivery of instruction.

In a concerted effort to identify and resolve end user issues resulting from the implementation of SAP 6.0, the BRITE Organizational Change Management Team utilized the incidents recorded through the Remedy Incident Management system, with questions posted on the Training Blog, to deliver just-in-time Elluminate sessions offering solutions to these specifically reported concerns. Elluminate sessions enabled the project team to deliver training to literally hundreds of people at one time, demonstrating solutions to frequently asked questions, in a manner that could be archived and reviewed over and over again. Please visit our recorded Elluminate sessions at:

- http://www.broward.k12.fl.us/erp/brite/ HR/ess.html

- http://www.broward.k12.fl.us/erp/brite/HR/mss.html
- http://www.broward.k12.fl.us/erp/brite/payroll/

BRITE TRAINING BLOG

Blogging is sweeping the Internet. It is estimated that there are at least 8 million blogs in the United States alone, 32.5 million worldwide. Most of those blogs are individual diaries, but many businesses have started their own blogs. The BRITE project is just one of those businesses, instituting its BRITE Training Blog!

A blog (a contraction for Web Log) is basically a program that once installed on your Web site, enables you to simply type into a form and, when you press submit, it is automatically and immediately uploaded to the Web. It is a quick and easy way to publish our content to the Web. Although the Web has always provided a platform for expression, blogs have removed many of the technical and financial barriers that existed previously. Blogs enable anyone, both technical experts and casual browsers, to write Web pages and publish them for other Internet users to see.

Blogging is an easy-to-use yet structured communications medium, not only for personal use but also as a business development tool. In many ways, blogs are the embodiment of the Web 2.0 concept, because they are representative of the evolution from the technological focus of the Web 1.0; into a business medium, where the technology is a means of delivery. Our Training Blog provided the business services, independence, and collective intelligence that our training staff needed, in a lightweight interface that is flexible enough for our business model.

Use of our Training Blog delivered significant benefits to the training and support team throughout the duration of the BRITE project:

- Our blog made it incredibly easy to publish to the Web by simply typing and pressing submit.
- Our blog was a very inexpensive way to publish to the Web. Once our blog was established; anyone, even the most technologically challenged, was able to create blog entries. There was no longer the need to pay an outside contractor an hourly rate or ask our IT guy to create a Web page for us.
- Blogging was a fast way to publish, we simply typed and hit submit.
- Blogging was immediate. There was no more waiting for our webmaster to get around to making changes to our site. We were literally able to react on a moment-by-moment basis with our blog, putting our point of view on a crisis or other issue for the trainers to view immediately.
- Our blog was used for a wide variety of content. We were not confined to writing about one thing. The possibilities were endless. Our Training Blog enhanced collaboration and information exchange within the organization.
- Our Training Blog was great for communicating within our organization (our blog was not open to be public). This, plus its ease of use, made it a great source for internal communications, project tracking, issue resolution, and so on.

Like e-mail, blogs are now moving into mainstream business services, and it is important to establish good practice for their planning, deployment, and management, because business tools deliver increased productivity only if you implement them effectively. Our blog offered an immediate, impromptu, and simple means of expressing project ideas that a trainer could publish for others to read. Unlike instant messaging (IM), these ideas have a permanent location, which is accessible by any number of people, all of whom can respond with their own ideas. These post-

ings were not as intrusive as using either IM or e-mail messages, because our trainers were able to pick the time that best suited them to look at our blog. The BRITE Training Blog also negated the necessity for sending bulk e-mail. Our blog displays content in chronological order, so users were able to review the thread of a discussion with a greater degree of ease and certainty than is available with e-mail.

All project managers know that the key to success is communication. Often, project communication is independent of other project documentation. The use of our Training Blog centralized all documentation and provided a structured repository for current discussion; and an archive, when project elements finished. Our Training blog provided a shared space for public project notices and notes, a discussion forum for project planning, and an ongoing resource for the life of the project, which captured the decision-making processes throughout the project life cycle. Used as an ongoing project notice and discussion board, our Training Blog provided an invaluable tool for project and training management. Visit our BRITE Training Blog at http://briteupdates.blogspot.com/

CAMTASIA

Camtasia Studio allowed the training and support team to capture SAP processes conducted on a computer screen, and then shares them as videos to anyone, anywhere. Camtasia Studio was used to develop everything from training videos to PowerPoint presentations and made them look better and accessible to more people. We were able to record whatever we wanted and then we edited and enhanced it to clarify and amplify our message. We were then able to place our creation anywhere, on our Web site or blog.

Camtasia Studio captured videos of anything on our screen, whether demonstrating a form or a process within the system, with no compromise between quality and file size. Its compression technology gave us perfect-quality recordings and compact file sizes. Even when a presentation was recorded, allowing viewers to see the speaker in a video screen, helped create a human connection. We were able to aim a webcam at the presenter and Camtasia Studio captured and synchronized that video with the screen recording.

Our next steps in using the Camtasia Studio application is to align it with the Archos 604 WIFI handheld video player to upload all training material, Elluminate sessions, and video tutorials for anywhere, anytime access to important SAP 6.0 content. View some featured videos at:

- http://web.broward.k12.fl.us/erp/erptv/video/Dont%20Guess_Reset%202/Dont%20Guess_Reset%202.html
- http://web.broward.k12.fl.us/erp/erptv/video/news/Settings%20Video%202/Setting%20Check%20for%20Using%20SAP2.html
- http://web.broward.k12.fl.us/erp/erptv/video/website%20tour%20with%20betty%20brite%20flash/Website%20tour%20with%20Betty%20BRITEflash.html

LANDESK

LANDesk delivers cost-effective systems, security, and process management solutions that help IT teams automate and simplify the management of desktops, servers, and mobile devices. Our training and support center staff utilized the software package to offer problem resolutions for end users participating in the SAP 6.0 implementation. Having the ability to take over the desktops of our end users, the staff immediately identified errors in process and was able to correct those errors through demonstration. LANDesk has increased our productivity, decreased our time of call closure, minimized our down time, and has saved us significant time and money. Our support center personnel are now able to provide faster and more efficient customer

service, which has freed them to concentrate on more in-depth and time consuming projects. LANDesk has changed the way we work, allowing our customer service analysts to be better partners with our end users, prove to them the value of the software, and be more proactive in creating and easily deploying solutions that help the BRITE project succeed. The remote control feature has turned out to be not only a practical way of fixing problems, but also a very efficient and cost-effective e-learning tool. There are so many things we do with LANDesk that it has become the single most useful tool in our arsenal. This online business tool helped us resolve support and service issues more quickly than we had previously been able to do, while empowering end users to actively participate in solving support issues.

COMMUNICATING ACROSS BROWARD (CAB) CONFERENCES (E-MAIL)

The CAB e-mail System is built on First-Class, a leading communication platform for education. With its unique architecture, accessibility, scalability, reliability and security features, FirstClass provides a stable and more efficient solution for the needs of Broward County. The CAB System provides users with the ability to effectively communicate and share information anytime, anyplace, through e-mail, conferencing, calendars, and instant messaging.

The BRITE Organizational Change Management team utilized our district-wide e-mail system to organize conferences within the system. End users would be placed into the appropriate conferences to receive the news and updates specific to their role in the SAP 6.0 system. These conferences became a repository of critical information needed for end users to suc-cessfully complete their job functions in the new SAP 6.0 system. New e-mails are red-flagged so that end users know what was currently residing for their review.

LESSONS LEARNED AND MOVING FORWARD

Web 1.0 was the movement that took place during the beginning of the Internet. At that point, the primary use of the Internet was to take print media and post it online. Web 1.0 saw books, news, music and everything else being moved into a digital format. After all these data were posted online, the online community began to look for ways to share it all. Here entered Web 2.0, which aims to enhance creativity, information sharing, collaboration and functionality of the Web. One of the most adopted solutions involves the idea of social networking to create a community.

Using our Web site and other distance learning technologies, the Organizational Change Management Team and the Training and Support Center staff hope to further develop this sense of community for our SAP 6.0 district end users. In addition, we promote each community member to be responsible for contributing information to the rest of the users. Some profess that where Web 1.0 was "read-only," and Web 2.0 is "read-write," Web 3.0 will be "read-write-execute." With data online thanks to Web 1.0, and with sites able to share data through social networks (Web 2.0), the next obvious direction is to do something with this massive amount of data we have available. A common way of viewing the potential for Web 3.0 is the use of the Internet as a platform where we will see the data being integrated and applying it into innovative ways that were never possible before.

Distance Learning Library Services

Keeping Up With the Times

Simone Primus

INTRODUCTION

Libraries are vital components of academic institutions. Davis-Underwood and Lee (as cited in Cain & Lockee, 2002) indicate use of library services contributes to academic success and student retention. For students learning at a distance, library services become even more vital since local access to resources may be unavailable. The rise in the number of institutions participating in distance education reflects an increasing demand for distance library services. The American Library's Association of College and Research Libraries (ACRL) recently released its revised Standards for Distance Learning Library Services. The standards are built on the principle of Access Entitlement whereby "Direct human access must be made available to the distance learning community through instruction, interaction, and intervention from library personnel" (ACRL, Bill of Rights section, para. 2). Library services must be available to distance learners regardless of their location.

Libraries provide access to resources as well as instruction on locating, accessing, evaluating, and using resources successfully. Striving to meet the information and research needs of its distance learners, libraries "ensure that the distance learning community has access to library materials equivalent to those provided in traditional settings" (ACRL, Resources section, para. 1). These resources should be sufficient to fulfill assignments, to support curricular needs, to meet teaching and research needs, and to facilitate the acquisition of lifelong learning skills. In support of distance learners, libraries provide rapid, reliable, and secure access to electronic resources such as full-text catalogs and databases of scholarly journals, books, dissertations, newspapers, and eBooks. Document delivery and inter-library loan services are available where full-text access is not, allowing distance learners to receive their information in a timely manner. Additionally, distance librarians help learn-

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ers identify local libraries from which they may receive service.

Resource availability is only part of what libraries are about. A major component of library service is ensuring users can effectively access and use these resources. Distance libraries provide the human side of resources referred to by Simonson, Smaldino, Albright, and Zvacek (2004). The remainder of this article describes how distance libraries personalize and provide service through the use of various information communication technologies.

REMOTE ACCESS AND THE PERSONAL TOUCH

PERSONAL COMMUNICATION

Distance library staff has several options for communicating personally with distance learners. Instant messenger (IM), chat, or online conferencing software are commonplace. The Kreitzberg Library at Norwich University, for example, uses Meebo to chat with students from several instant messaging services such as Yahoo!, AOL, MSN, and Google Talk. Ask a Librarian is a service designed to provide real-time assistance to users at a distance. Ask a Librarian services vary, however, depending on the institution or organization providing the service. Some offer a toll-free number for phone assistance, and most offer live text chat and 24-hour e-mail response. In Florida for example, Ask a Librarian is a statewide service and users may connect with librarians outside their institution as librarians from around the state staff the service. Clicking on the "Ask" icon on library Web sites will usually take the user to a page where they can begin chatting via text or to instructions on how to contact the library staff. In addition to chat services, distance libraries provide webinars and individual instruction to students via telephone and online conferencing software such as WebEx and Elluminate.

PODCASTS

Distance libraries also use a variety of information communication technologies in providing services to remote independent learners. Audio and video streaming is used to provide library orientation, information and instruction. The George C. Gordon Library at Worcester Polytechnic Institute produces "Library Audio to Go," a podcast focusing on specific information resources and topics related to library research. The Sheridan Libraries from Johns Hopkins University offer podcasts with computer tips, a lecture series with visiting authors and other professionals, library news, and a tour of the library facility. Podcasts are useful for distance learners who can take learning with them, wherever they go.

RESEARCH GUIDES AND TUTORIALS

Research guides and tutorials are another means of communicating with and instructing students. These electronic help pages can provide subject guides or resource lists, instruction on how to conduct research, instruction on using databases and Web resources, help on locating books and articles, information on plagiarism and copyright, and help with citations and style guides. Many libraries offer access to electronic tools such as ResearchSoft and EndNote to assist with compiling bibliographies. Distance libraries use tools such as Captivate to capture, create, and demonstrate how to use such applications. Tutorial presentations vary from fully text-based to completely interactive with the use of audiovisual media and can be accessed via the library Web site.

In addition to working with students, distance librarians "work collaboratively with teaching faculty in distance-delivered programs to integrate information literacy into courses and programs in order to foster lifelong learning skills" (ACRL, Management section). Research tutorials can be part of distance coursework delivered syn-

chronously using conferencing software such as Elluminate or asynchronously delivered via a library Web site or a course management system. At Nova Southeastern University, distance doctoral students complete several library research modules linked within WebCT.

LIBRARY 2.0

Rainie (2006) discussed three characteristics of digital natives that have significant implications for libraries. First, digital natives, born with access to technology, take for granted the ability to access and share information from multiple sources using multiple devices. Second, for this social group, "conversations, research, and learning never end" (Rainie, 2006). Third, digital natives hope for assistance whenever they need it, including help from librarians. Embracing change and responding to the needs of this new learner, many libraries are moving "from the traditional library as place and toward a more ubiquitous presence, striving to meet users where they are" (Mathews, 2007, p. 83). Distance learners are served in this effort through Library 2.0 or libraries use of blogs, wikis, social bookmarking, social networking sites, and virtual worlds. The Library 2.0 focus is on community and user-created content. The remainder of this article explores some of the tools academic libraries are using to engage distance learners while providing them the resources they need to be successful.

BLOGS AND WIKIS

Many distance libraries are using blogs as a timely communication tool to inform patrons about events in the library, to provide news on updated resources, to solicit feedback, and even as subject guides to assist researchers. Northwestern University Library blog keeps patrons current with library news, and the Virginia Commonwealth University has a library suggestion box within their blog where patrons can make their voices heard in library related issues. Ohio University Library's business blog provides tips, tricks, and tools for the business researcher. Blogs generally allow users to add comments to blog postings, which is another way for patrons and library staff to communicate. Bloggers have the advantage of subscribing to the site's RSS feed to be sure they receive updates instantaneously.

A wiki is a Web page that can be edited by users generally without the need for special software. This feature makes the Wiki an ideal tool for librarians to maintain subject guides. As sources become dated, it is easy to remove them from the listing and just as easy to add new references. Additionally librarians or users can add descriptive annotations to assist other users in their searches. In addition to its blog, the Ohio University Library maintains the Biz Wiki, a general collection of business information resources. Biz Wiki provides research guides specific to business as well as information on specific business reference books, journals, Web sites, and databases. Video tutorials on how to search the business databases are also available. Users have the ability to add resources of their choosing to the wiki making it a rich community resource. The Ohio University Business librarian uses Digsby chat and a Twitter tracker on the wiki page to keep in touch with users.

SOCIAL BOOKMARKING

Social bookmarking Web sites allow Internet users to store, organize, and share their saved Web pages with others. As users save a Web page, they assign a descriptive word(s) or tag(s) to the page, which is then organized by these tags. If users make their bookmarks public, their tags join other users' tags. The most popular tags often appear in a visual display known as a tag cloud, with the more popular tags having larger font sizes. Clicking on any tag allows a user to see what Web sites others have

tagged for that particular word. In discussing social bookmarking's application to higher education, Alexander (2006) notes, "Pedagogical applications stem from their affordance of collaborative information discovery" (Projects and Practices section, para. 4). The University of Pennsylvania's library created PennTags, which "enable users to bookmark and tag books, articles, web sites, papers from the web, as well as library cataloging records" (Kroski, 2007, p. 101). Users of PennTags open themselves to a wealth of resources to support their academic endeavors while engaging in collaborative research. The Berkman Center for Internet and Society at Harvard Law School maintains a similar site for their community called the H20 Playlist.

SOCIAL NETWORKS

Two other social networking areas where academic libraries are making their presence known are on MySpace and FaceBook. MySpace users personalize their Web page with descriptions and pictures of themselves. They can link to friends, leave messages, upload music, and connect with people of similar interests. According to the FaceBook Web site, users can connect with people who work, study, and live around them. Users can learn about the people they meet through networking with groups organized around a company, school, or region. They can share links, photos, and videos. The Perry-Castaneda Library at the University of Texas at Austin hosts a MySpace page. It gives information about the library, upcoming events, library tutorials, place to contact the librarians, and of course a place for friends of the library to connect. Wesley College's FaceBook page gives users subject specific user guides, research tips, citation help, and more.

THE VIRTUAL LIBRARY

Second Life is a 3D virtual world where users can simulate many of the things they do in the real world such as explore, create, socialize, shop, gamble, and take classes. They can also fly and teleport, things not yet possible in the real world. A recent check of SimTeach's wiki of institutions and organizations in Second Life lists over 141 universities, colleges, and schools from around the world with a presence in Second Life (SimTeach, 2008). What are they doing there? Kay and FitzGerald (2008) lists 32 categories of education uses for Second Life, but essentially Second Life is a place for simulation, visualization, and creative collaboration. Distance learning library services fit in several categories as they provide presentations, panels and discussions, training and skills development, tutorials, displays and exhibits, virtual tours, book discussions, and reference services.

There are 14 islands in Second Life coordinated by the Second Life Library 2.0 project. Most of the academic libraries are located in Cybrary City 1 and Cybrary City 2. The McMaster University Libraries offer research assistance in real time through their Second Life avatars that staff the help desk or through IM and e-mail. The San Jose State University School of Library and Information Science uses Second Life as a place for their distance students to experiment with teaching and learning in virtual environments, and for offering virtual library services. They also support the entire Second Life community by offering a place for Second Lifers to come and learn about the *in world* of Second Life.

CONCLUSION

Changes in technology allow distance learners to interact more closely with their learning community. Distance learning libraries are taking advantage of these same technologies to reach out to students and faculty to satisfy their need for information and instruction. In responding to the needs of the new digital learner, libraries are no longer place-based. Instead, they

are striving to meet the distance-learning credo of any time, any place, taking their services to the user wherever they may be.

REFERENCES

Association of College and Research Libraries. (n.d.). *Standards for distance learning library services*. Retrieved August 5, 2008, from http://www.ala.org/ala/acrl/acrlstandards/guidelinesdistancelearning.cfm

Alexander, B. (2006). Web 2.0: A new wave of innovation for teaching and learning? *EDUCAUSE Review, 41*(2), 32–44.

Boeninger, C. F. (2007). The wonderful world of wikis: Applications for libraries. In N. Courtney (Ed.), *Library 2.0 and beyond: Innovative technologies and tomorrow's user* (pp. 25-33). Westport, CT: Libraries Unlimited.

Cain, D. L., & Lockee, B. (2002). *Student support services at a distance: Are institutions meeting the needs of distance learners?* (ERIC Document Reproduction Service No. ED468729)

Kay, J., & Fitzgerald, S. (2008). *Educational uses of Second Life*. Retrieved August 8, 2008, from http://sleducation.wikispaces.com/educationaluses

Kroski, E. (2007). Folksonomies and user-based tagging. In N. Courtney (Ed.), *Library 2.0 and beyond: Innovative technologies and tomorrow's user* (pp. 91-103). Westport, CT: Libraries Unlimited.

Rainie, L. (2006). *Digital natives: How today's youth are different from their "digital immigrant" elders and what that means for libraries*. Retrieved August 5, 2008 from http://www.pewinternet.org/PPF/r/71/presentation_display.asp

Mathews, B. S. (2007). Online social networking. In N. Courtney (Ed.), *Library 2.0 and beyond: Innovative technologies and tomorrow's user* (pp. 75-89). Westport, CT: Libraries Unlimited.

Sampson, N. (2003). Meeting the needs of distance learners. *Language, Learning & Technology, 7*(3), 103-118

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2004). *Teaching and learning at a distance: Foundations of distance education* (3rd ed.). Upper Saddle River, NJ: Pearson Education.

SimTeach. (2008). *Second Life education wiki*. Retrieved August 8, 2008, from http://simteach.com/wiki/index.php?title=Second_Life_Education_Wiki

Digital Storytelling
Using Photo Story 3 to Create Digital Stories

Duysevi Karan-Miyar

INTRODUCTION

Storytelling is the original form of teaching (Pedersen, 1995). It is a simple but powerful method to help students to make sense of the complex and unordered world of experience by crafting storylines (Bruner, 1990; Gils, 2005). Although storytelling is not new, the idea of digital storytelling is new (Meadows, 2003).

Within the last 10 years, digital cameras, editing software, authoring tools and electronic media outlets have encouraged teachers to utilize many more approaches and tools than ever before to help students to construct their own knowledge and

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ideas to present and share them more effectively (Standley, 2003). One of these powerful approaches to multimedia production is digital storytelling.

The Digital Storytelling Association (2002) describes Digital Storytelling as:

> A modern expression of the ancient art of storytelling. Throughout history, storytelling has been used to share knowledge, wisdom, and values. Stories have taken many different forms. Stories have been adapted to each successive medium that has emerged, from the circle of the campfire to the silver screen, and now the computer screen.

Gils (2005) suggested many advantages of using digital storytelling in education: to provide more variation than traditional methods in current practice; to personalize learning experience; to make explanation or the practicing of certain topics more compelling; to create real life situations in an easy and cheaper way; and to improve the involvement of students in the process of learning.

Teachers usually need assistance to develop the nature of teaching and learning through any particular application of digital technologies that may result in a shift in technology utilization. By providing a clear picture of what and how teachers and students use digital storytelling, much can be learned to facilitate meaningful integration of the technology into K-12 schools.

Within the last few years, a variety of nonlinear applications have become available that can be used in the creation of

classroom digital stories. One of these applications is Microsoft Photo Story 3 for Windows. Photo Story is available for free and helps students create video stories from their photos that are captured using a digital camera or downloaded from the Web. In a few simple steps, students can import and edit their photos one at a time, insert titles, record narration, add background music, specify locations for zooming and panning and add visual and transition effects.

Students can talk about a photo as much or as little as they like. When they are done, they click the mouse button to go to the next photo. The authoring task is done when they complete the last photo. Students can then save their stories in WMV (Windows Media Video) format and use any program that plays WMV files, such as Windows Media Player, to playback their stories.

Since creating a digital story requires skills and concepts that teachers need to teach, teachers must introduce their students to the digital storytelling concept, equipment, and software resources required to develop digital stories. Teachers must show the students how to use the digital camera, the scanner or Google Images to get pictures and import them to Photo Story with text and audio. In addition, sample digital stories should be completed by the teachers to provide first hand

Table 1.   Robin's Approach to Creating and Integrating Digital Stories

Steps	Procedures
1. Define, collect and decide	• Select a topic for your digital story • Create a folder on the desktop where you can store the materials you find • Search for image resources for your story, including: pictures, drawings, photographs, maps, charts, etc. • Try to locate audio resources such as music, speeches, interviews, and sound effects • Try to find informational content, which might come from web sites, word processed documents, or PowerPoint slides • Begin thinking of the purpose of your story
2. Select, import and create	• Select the images you would like to use for your digital story • Select the audio you would like to use for your digital story • Select the content and text you would like to use for your digital story • Import images into Photo Story • Import audio into Photo Story • Modify number of images and/or image order, if necessary
3. Decide, write, record and finalize	• Decide on the purpose and point of view of your digital story • Write a script that will be used as narration in your digital story AND provides the purpose and point of view you have chosen • Use a computer microphone and record the narration of your script • Import the narration into Photo Story • Finalize your digital story by saving it as a Windows Media Video (WMV) file
4. Demonstrate, evaluate and replicate	• Show your digital story to your peers • Gather feedback about how the story could be improved, expanded and used in your classroom • Help other groups how to create their own digital story

Source: Robin (2005).

experience in exactly what the students would be expected to complete.

Robin's (2005) four-step approach to creating and integrating digital stories into learning can assist teachers to help groups of students create, review and evaluate their stories (Table 1).
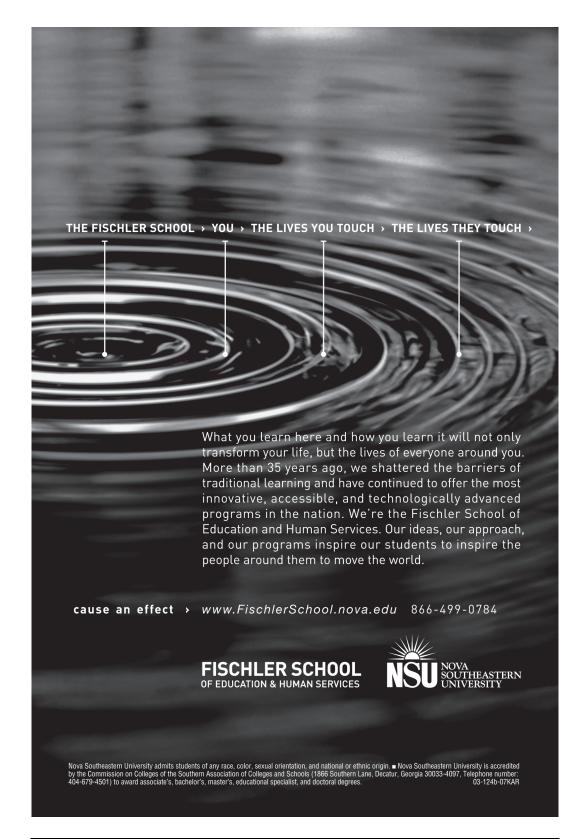
Hence, by providing a clear picture of how teachers and students can use digital storytelling, much can be learned to facilitate meaningful integration of the technology into the curriculum. In addition, teachers can gain a clearer picture and a better understanding of the impact of digital storytelling on student learning for their teaching and learning tasks. Digital storytelling is particularly useful for promoting independent learning, motivating students, extending/enriching the curriculum of the more able, and promoting explanation, interpretation, and personal viewpoint.

REFERENCES

Bruner, J. (1990). *Acts of meaning.* Cambridge, MA: Harvard University Press.

The Digital Storytelling Association. (2002). *The center for digital storytelling.* Retrieved July 15, 2008, from http://www.dsaweb.org

Gils, F. (2005, February). *Potential applications of digital storytelling in education.* Paper presented at the 3rd Twente Student Conference on IT, University of Twente, Faculty of Electrical Engineering, Mathematics and Computer Science, Enschede, Netherlands.

Meadows, D. (2003). Digital storytelling: Research-based practice in new media. *Visual Communication*, 2(2), 189-193.

Pedersen, E. (1995). Storytelling and the art of teaching. *FORUM*, 33(1). Retrieved July 15, 2008, from http://exchanges.state.gov/forum

Robin, B. (2005). *Educational uses of digital storytelling. Main directory for the educational uses of digital storytelling* (Instructional technology Program, University of Huston). Retrieved July 20, 2008 from http://www.coe.uh.edu/digitalstorytelling/default.htm

Standley, M. (2003). Digital storytelling using new technology and the power of stories to help our students learn—and teach. *Cable in the Classroom*. Retrieved July 30, 2008, from http://www.ciconline.org/home

DIGITAL STORYTELLING IS PARTICULARLY USEFUL FOR PROMOTING INDEPENDENT LEARNING, MOTIVATING STUDENTS, EXTENDING/ENRICHING THE CURRICULUM OF THE MORE ABLE, AND PROMOTING EXPLANATION, INTERPRETATION, AND PERSONAL VIEWPOINT.

Engaging Online High School Students with the use of ClassLive Pro Powered by Elluminate

Gail Y. Green

INTRODUCTION

I t is often suggested that distance education is too impersonal to keep the attention of high school students. Although Internet-based or online distance education has been more prevalent in post-secondary institutions, virtual high schools are starting to flourish on the Internet as an alternative delivery system for K-12 education (Berman & Tinker, 1997;

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Roblyer, 1999). Typically, the rationale for online learning in K-12 schools is different from that of higher education. AWESOME

Often, online education in K-12 schools focuses on expanding course offerings for students who are at risk, home-schooled, rural, or who have disabilities, or on providing access to educational resources and expertise unavailable in remote or rural areas (Mills, 2002). Berman and Tinker (1997) further contend that schools' primary motivations seem to center on offering effective, affordable course options to high-ability, at-risk, home-schooled, rural, and disabled students.

Course management systems (CMS) provide virtual environments for distance teaching and e-learning. They support critical functions of online instruction and course administration. For many educational institutions, the majority of distance courses use online asynchronous tools in conjunction with synchronous text chat or streaming video. With asynchronous distance education programs, students often experience a feeling of isolation. Throughout their program, students have to work mostly on their own, with little contact with other students and instructors. This isolation can be a serious detriment to learning for many. Interactions between students and instructors, as well as student-to-student interaction, greatly enhance distance

education by improving student attitudes and motivation, increasing completion of coursework, yielding better performance on tests and greater retention. Moreover, the increased interaction provides a sense of community to the students.

Research in distance education continues to emphasize the importance of interaction for effective learning and teaching. Previously, technologies that increase interaction have been expensive, difficult to use, and not often utilized. With the advances of technology and the all-pervading nature of the Internet, distance education has changed. It is now easy and cost-effective to incorporate interactive instruction using a new model of distributed learning that combines asynchronous online learning with online synchronous tools. Synchronous collaboration software, such as virtual classrooms, allow for real-time interaction with students and instructors. A model, which combines both asynchronous and synchronous education to connect students, instructors, and educational content in live online learning communities, is the ideal solution. The desired outcome of using these synchronous communication tools is to add value of real-time interaction that once was mostly text content. Synchronous interaction has many benefits to students and instructors, providing immediate feedback to and from the students and instructors; it replicates a traditional classroom; reduces the feeling of isolation; creates a forum for student collaborate at any time; creates a sense of community among learners; provides motivation to the students; and it is a new technology that increases student technical aptitude.

THE USE OF THE ECOLLEGE SOLUTION—CLASSLIVE PRO AT GWINNETT COUNTY ONLINE CAMPUS

Gwinnett County Online Campus (GCOC), part of the largest public school system in Georgia, Gwinnett County Pub-

lic Schools (GCPS) was a direct outgrowth of the need to use the Internet for the expansion of instructional resources for high school students. The initial involvement in providing its students with distance learning opportunities began in 1998. The flexibility and availability of offering its students online classes has continued to grow since. In 2006, GCOC had an enrollment of over 3,000 students. The virtual high school's students have varied learning types, ranging from homebound learners to students seeking accelerated classes. In addition, nearly half of GCOC's student population enrolled for the credit recovery opportunities provided by the virtual school. GCOC has served its online high school students with eCollege eLearning solutions since 1999. With the desire for synchronous technology that could more closely mirror traditional face-to-face communication, providing a critical oral component for courses like foreign languages, mathematics, science and computer applications, every student enrolled in a GCOC class experiences the real-time environment of ClassLive Pro, powered by Elluminate. Teachers engage their students on the first day of class by giving their orientation presentations as a live Web conference. This is an excellent way to demonstrate the use of the tools, review class expectations and allow students to ask questions and receive an immediate response.

CLASSLIVE PRO FEATURES

ClassLive Pro is supported by Elluminate, a leader in synchronous tools for live Web conferencing and e-learning solutions. It is a live voice-over-Internet Protocol (VoIP) and video conferencing tool for the eCollege platform version of Elluminate *Live!* The ClassLive Pro tool allows teachers to display the class syllabus and other important information on an interactive whiteboard or as a Power-Point presentation that can be seen by every student logged into their course.

Table 1.   ClassLive Pro's Voice Over Internet Protocol (VoIP)

ClassLive Pro Features
  Communications Features
  Text Chat
  Closing Captioning
  Voice over Internet Protocol
  Video

Content Delivery Features
  Whiteboard
  Graphing Calculator
  Application Sharing
  Multimedia (play movies)
  Web Tours

Classroom Management
  Polling, Hand Raising, Stepped out, etc.
  Recordings
  Moderator ESP
  Cross Platform/Low Bandwidth Support
  Breakout Rooms
  Quiz Manager

ClassLive Pro helps GCOC leverage the flexibility of e-learning's asynchronous environment, but still allows students and instructors to create a forum for synchronous feedback. As teachers review the tasks and topics required throughout the term, students can ask questions using their microphones or other tools in the chat window. Table 1 presents a list of ClassLive Pro features.

GCOC personalizes the online classroom student experience with ClassLive Pro's VoIP and video capabilities to engage its students who enroll in its online learning program. The students in GCOC's fully online classes are able to see and hear their teachers during scheduled class sessions. Using ClassLive Pro provides a highly interactive element to all online courses. The live video and voice conferences draw students into a community of online learners. Once students feel part of a larger community, they are engaged more fully in the learning process. Thus, ClassLive Pro creates the link most students need for success in online education.

EXTENDING LEARNING WITH SYNCHRONOUS CONFERENCE TOOLS

Using extended learning with the synchronous conference tools allows online instructors to see and hear their students in an entirely virtual classroom. Online programs that have used synchronous models have not often used voice as part of the learning model. Often this is because teleconferencing all the students and instructors together is troublesome and quite expensive. However, the new solutions feature built in VoIP eliminating the need for a telephone, and interaction with students is done completely over an Internet-connected computer equipped with a microphone and speakers (or headset). The added voice component provides increased human interaction, increasing meaning and understanding through a user's tone of voice. It also increases sense of "community," provides an effective and efficient communication vehicle, and offers flexibility in responding and interacting, as well as multiple methods to interact with students with differing learning styles.

Historically, these tools have involved simple elements for real-time communication such as a whiteboard and chat, but they have continued to evolve. Today's synchronous tools include new features, such as application sharing, online polling, breakout rooms, and VoIP. This tool can now be used to expand the boundaries of a physical classroom with remote guest speakers, connecting participants from other classrooms for combined lessons, and recording content for participants who may have missed a class or need additional assistance. Teachers can present a lesson from a single computer, load a presentation template in the whiteboard, and engage their students who are used to multitasking and motivated by the use of technology.

BENEFITS OF GCOC USING CLASSLIVE PRO

Using ClassLive Pro, GCOC instructors deliver interactive, real-time classes that include shared whiteboards, text messaging, and record/playback capabilities, including advanced voice over the Internet, and application sharing, participate in breakout rooms, video. GCOC participants launch synchronous sessions or recordings using ClassLive Pro directly from the eCollege CMS, which delivers a more powerful learning experience. GCOC's faculty use of synchronous tools within their online courses greatly improves the student's sense of community with the class, which has proven to increase course completion rates. The program makes use of two-way audio, direct messaging, live video, an interactive whiteboard, application sharing, breakout rooms, polling/quizzing, file transfer, synchronized Web browsing, and the archiving of sessions—all in pursuit of real-time online learning and collaboration. This real-time tool provides GCOC's online teachers with an interactive, multi-dimensional classroom setting.

GCOC also uses ClassLive Pro to make staff more productive and students more successful by individualizing learning. Best practices are employed during first-day-of-class meetings that allow students to meet their teachers and show students how to participate in their online course. This makes the review, remediation, and individualization of student instruction effortless. Using file transfer to hand out and turn in documents is easy and convenient. Application sharing is done with demonstrations that enhance student learning in many modalities, with many users engaged at once and in different rooms. As a result of its use, there has been improved student and faculty satisfaction in their online experience, leading to increased course completion and program retention. In addition to the many uses of ClassLive Pro at GCOC, Gwinnett County Public Schools personnel use these tools at county-wide meetings, for book discussions, for instructional dissemination by county instructional program leaders, and for professional development for teachers, including adjunct faculty. In addition, remote experts can address staff to keep them up-to-date on new technologies, policies, strategies, and teaching methodologies. Instructors can use their time more effectively by attending sessions without traveling, and even play back recorded sessions at their convenience.

The best way to demonstrate the benefits of live distance education and Web collaboration technology is with real-world examples. This real-time tool provides online teachers with an interactive, multidimensional classroom setting. Teachers are able to schedule classes for direct instruction for the entire class or for a small group. The virtual classroom captures the essence of a traditional face-to-face teacher/student interaction in an online format. Every online session is archived as a downloadable podcast in the event students are unable to "attend" class. No matter where the teacher or students are

located, teachers can offer virtual office hours, allowing students to drop in to ask questions or get clarification on an assignment. This tool affords students the ability to conduct group collaboration, without the need to drive to their school building where they can connect virtually to share documents, presentations, and spreadsheets. Lessons can be recorded for students to view at their leisure at any time from anywhere. Tutorials can also be made available to students as part of their course work.

APPLICATION SHARING WITH CLASSLIVE PRO

The power of ClassLive Pro enables a shared interactive whiteboard that has many flexible tools for writing, drawing, and erasing. It also enables collaboration on multiple whiteboard screens; the ability to edit, group, align, resize and layer objects; provides access to a library of presentation symbols and clipart; the ability to insert clickable URLs, to drag and drop images from a file folder; to load animated GIFs, and to insert images, clip art, and screen captures. The moderator can also grant permission to have students save (as a PDF) and print any screen with the easy-to-use menus and buttons that allow hosts to take snapshots of content for markup and share applications that run full screen while managing interaction.

CLASSLIVE PRO CAPABILITIES USED BY GCOC

GCOC uses the following ClassLive Pro capabilities to create a dynamic online learning environment for their students and faculty participants:

- Live Webcam Video—Instructors can show live video at rates up to 60 frames per second. They can take snapshots of video content and move it to the whiteboard, as well as give video privileges to

one or more selected participants, or all participants.

- Remote Control—Instructors can give control of applications or the desktop to others, enabling true hands-on training and support, and allow users to take control automatically or by entering a password.
- Breakout Rooms—Instructors can create breakout rooms that contain private audio and content (whiteboards, application sharing, etc.). Moderators can move themselves and participants between rooms freely and easily. Participants can be randomly assigned into breakout rooms and returned to the same rooms at any time.
- Virtual Labs—Instructors can create a virtual lab environment where participants can work on applications independently.
- Quiz Manager—Moderators can deliver quizzes or surveys and create questions in advance or on the spot. Participants respond and submit their answers from within the session. Results can be displayed to all (in graphical format) or kept private.
- Chat—Participants and moderators communicate using a variety of messaging capabilities, including private messaging between moderator and participant, one-to-one messaging between participants, and one-to-many messaging between moderator and participants.
- Graphing Calculator—Participants can plot one or two graphs and find their points of intersection and x- and y-intercepts. This can be done privately publicly, with viewing controlled by the moderator.
- AppSnap—Screen shots can be captured from any application or the user desktop and show it on whiteboard creating another quick and easy way to build content for class sessions.
- Synchronized Web Browsing—Instructors can push multiple URLs to partici-

pants via embedded windows, and allow participants to interact independently with content in fully functional windows, and redirect participants to any link, all at the same time.

- Synchronized Notes—All users are able to take notes in separate window. Notes are automatically saved to local computer and can be edited/merged/added to during interactive playback, saved to file, and shared with others. Users can transfer files to distribute documents, assignments, and handouts. Instructors can give privileges to participants to transfer files. When loading files, all users can be prompted to save the file, or files can be transferred silently and saved only by those who need the file.
- Interactive, Indexed Recordings—Live sessions are recorded and indexed for later play. Instructors can build a library of live sessions, or create personalized content to be used asynchronously. Recordings are interactive, allowing users to save slides, text messages, and profiles. Easy-to-use controls allow viewers to pause, forward, rewind, or navigate to a certain location in the recording.
- Polling—Instructors are able to poll participants with yes/no, true/false, or multiple-choice questions, and visually monitor responses, privately or publicly.
- Emoticons—Participants are able to express themselves to moderator and other participants with emotion indicators.
- Close a Session—The moderator is able to prevent additional participants from joining the session.
- "Stepped Out" Indicator—Participants and moderators let others know they had to step away from their computer temporarily.
- New User Notification—Moderators receive an auditory and visual notification when a new user enters the room.
- Hand Raise Notification—Users raise their hand at anytime to indicate they have a question. Users are placed in a queue. Moderators decide if they wish to have an audible notification when users raise their hands.
- Track Whiteboards and Content—Moderators have full session awareness with whiteboard content. Moderators associate all objects on a whiteboard with each participant. When participants are allowed to navigate through slides, moderators track which whiteboard screen each participant is viewing and ensure participants are on-track with assignments.
- Announcements—Moderators send text announcements to all participants, including those in breakout rooms.

EXAMPLES OF CLASSLIVE PRO IN USE AT GCOC

Figure 1 illustrates how GCOC math teachers use the math teaching tool with the use of PowerPoint presentations and the whiteboard can bridge the Wacom tablet and application share of the TI software. Students are able to get a visual and following along to see if they have come up with the correct responses, as the teacher gives visual instructions via video as students ask questions either in the text box or voice command. Working in this mode allows collaboration in real time, regardless of Internet connection speed, with everyone seeing and hearing the same thing at the same time. Participants and moderators speak to each other using full-duplex audio with built-in volume control through a standard microphone connected to the computer. Sessions can be configured to allow up to 6 attendees to speak simultaneously. In addition to showing formulas on the whiteboard or PowerPoint slide, the GCOC online math teacher uses a stylus notepad to write out formulas on ClassLive Pro's shared whiteboard tool.

Figure 2 illustrates how using ClassLive Pro is used to share an application from Microsoft PowerPoint. Working in this
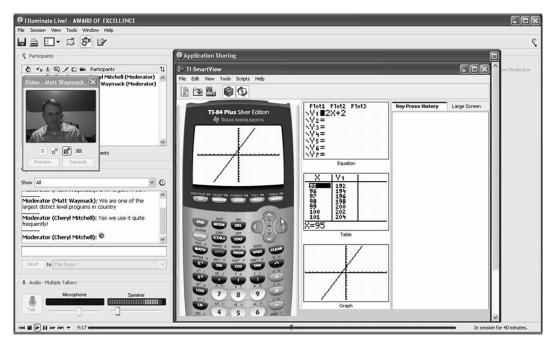
Figure 1. Using ClassLive Pro application sharing in a math class.

mode saves the teacher time by having prepared lessons and visuals available to students to show and demonstration operations during online lectures. It provides a visual outline of the class discussion, and provides clearer explanations of concepts with applications that are shared with the class in real time.

CLASSLIVE PRO PROVIDES SERVICES TO GCOC SPECIAL NEEDS STUDENTS

In support of the Americans with Disabilities Act (ADA), Section 508 of the Rehabilitation Act, and the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI), ClassLive Pro provides the flexibility to allow all individual users to experience live distance education and Web collaboration environments. GCOC special needs students are able to participate as equals in their ClassLive Pro session. Other features have also been implemented that allow students with a range of disabilities and other challenges to participate and to feel that they are a part of the class community. There are features that promote accessibility, including keyboard access to menus and dialogs, closed captioning, enlarged video, user-defined color, and screen reader compatibility.

CONCLUSION

The use of ClassLive Pro has many benefits for GCPS, as it captures the essence of face-to-face instruction and empowers learning and collaboration for the entire school system. Using ClassLive Pro provides a highly interactive element to their online campus program. The live video and voice conferences are the greatest benefit of pulling students into the community of online learners. Once students feel part of a larger community, they are engaged more fully in the learning process. ClassLive Pro creates the connections most students need for

Beyond Synchronous VoIP capabilities, the ClassLive Pro conferencing tool offers richer and more interactive features than any other whiteboard tool.

Figure 2.   ClassLive Pro application sharing with a PowerPoint presentation.

success in online education. Since the implementation and use of ClassLive Pro GCOC, students have achieved better end-of-course test scores and fewer students have dropped out of the program.

Using ClassLive Pro also allows the online campus administrators to attract and retain qualified instructors and leverage limited teaching resources. It is available to the entire school system to conduct professional development to teachers and administrative staff without costly travel or teleconferencing, and increases the efficiency and effectiveness of faculty and staff meetings. It also provides an efficient means of dissemination of instructional information.

Synchronous tools are becoming more commonly used in all distance education environments, which enhances the quality of a student's online experience. Beyond synchronous VoIP capabilities, the Class-Live Pro conferencing tool offers richer and more interactive features than any other whiteboard tool.

REFERENCES

Berman, S., & Tinker, R. (1997). The world's the limit in the virtual high school. *Educational Leadership*, *55*(3), 52-54.

Elluminate, Inc. (n.d.). *Elluminate live! Features and benefits.* Retrieved August 11, 2008, from http://www.elluminate.com/products/live/live-features.jsp

Mills, S. C. (2002). *School isn't a place anymore: An evaluation of virtual Greenbush online courses for high school students*. University of Kansas: Schiefelbusch Institute for Life Span.

Roblyer, M. D. (1999). Is choice important in distance learning? A study of student motives for taking Internet-based courses at the high school and community college levels. *Journal of Research on Computing in Education*, 32(1), 157-171.

Shein, E. (2008). One-stop shopping with learning management systems. *T.H.E. Journal Online.*

Using Online Office Applications

Collaboration Tools for Learning

Ann L. Kieser and Fay Ortiz Golden

INTRODUCTION

At one time, completing a team assignment in the traditional college setting meant holding a meeting at the library or someone's dorm room. The assignment was usually sectioned off and assigned to each team member who would then take his or her respective assignments home to research and complete. The finished product would consist of several sections of information synthesized into one report. The final document was usually generated with the help of a word processor as the writer of each section would deliver their contribution on a storage device, such as a floppy disk, to the editor of the team. The editor would then assemble the final document.

Later, with the arrival of the Internet, the process to complete group assignments was facilitated through the use of e-mail accounts. Each contributor of the assignment could deliver his or her document electronically. Copies of the documents could be e-mailed back and forth in order

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for the team members to make comments and forward changes.

In the secondary school environment, teachers and students are also confronted with challenges when a group project is assigned. Documents (which for this article include word processing, spreadsheets, and presentation software) are often created by individual students at their own computer. Sharing the documents with each other can be cumbersome on a school network when certain rights prohibit students and teachers from accessing the document from another student's folder. The final copy is often produced with a lot of copying and pasting between individually created documents.

Unable to access the saved network document from home, students are forced to e-mail the document home or save it to a portable storage device. Multiple roadblocks abound once the document leaves the school network. It is not uncommon for the teacher to hear that the student "forgot" to return e-mail the document, that the e-mail attachment document did not go through, that the portable storage device was lost, that a team member with the needed document is absent, and so on.

The examples listed above describe methods of student communication that were originally intended to serve as an exercise in teamwork and collaboration. Until now, the tools available for learners to collaborate did not always provide a realistic collaboration experience. This article will showcase the technologies that facilitate collaboration using Web-based office applications. We will first provide some background information on the role of collaboration and learning. This will be followed by a section on the development of communities for an online class. The next section will highlight the emerging online office applications. We will conclude with our personal experience both teaching with and using one of the online office applications, Google docs.

THE NEED FOR COLLABORATION

Alluri and Balasubramanian (2006) define collaboration as "a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (para. 1). Collaboration has been recognized as a necessary and fundamental success factor in many organizations (Sonnenwald, Iivonen, Alpi, & Kokkinen, 1999). To compete in a global environment, government, non-government, and academia use teams to find solutions to complex problems. Collaboration has also been designated as a necessary component for active learning.

Given the research on the benefits of collaboration, students are often encouraged to collaborate in both online and traditional classrooms. Benefits of collaboration include developing critical thinking skills, discussion and consideration of ideas, and social skill development. Collaborative learning environments can be designed to account for different learning styles, increase relationships between the student and the teacher, and reduce classroom anxiety.

Many current pedagogies incorporate collaboration. Engagement theory and constructivism are two just two examples that advocate for collaboration. Kearsley and Shneiderman's engagement theory is founded on collaborative team learning. In *Engagment Theory: A Framework for Technology-based Teaching and Learning*, Kearsley and Shneiderman noted that student activities should "involve cognitive processes such as creating, problem-solving, reasoning, decision-making, and evaluation" (para. 3). They further noted that students learn when "meaningfully engaged in learning activities through interaction with others and worthwhile tasks" (para. 3).

Social constructivism theory emphasizes the importance of collaboration in the learning process. Learning is social and requires participation in a social process of knowledge construction. Knowledge occurs through a web of interactions, and

is distributed and mediated by the people and the tools that they use for interacting (Kaplan, 2002).

COLLABORATION AND ONLINE LEARNING

Collaborative learning in an online environment is different than traditional classroom learning and requires a different kind of instructional design for teachers and a different type of work on the part of the student. There are a variety of strategies and tools that may be used to encourage collaboration in an online environment. Sonnenwald et al. identified a broad framework synthesizing three main approaches needed to create an engaging collaborative online environment. These three approaches focus on people, process, and technology. The following summary of these three approaches is intended as a starting point when creating online or blended collaborative environments.

For Sonnenwald et al., the people approach refers to strengthening the bond between the students in the class by defining roles, creating subgroups, and supporting individuality. This can be done by describing the different roles and relationships in the community, detailing responsibilities and interdependencies. Providing a way for learners to create personal profiles that include photos or links to personal Web sites, bloggers or wikispaces would support student individuality.

The process approach establishes the protocols for collaboration to occur by establishing operating norms, clearly defining the goals and objectives of the course, aligning goals and objectives with the learner's expectations, and creating a buddy system to build a support structure. Asking each student community member to log in once a week and post one question and one response is one example of establishing an operating norm. Clearly defining goals and objectives of the course

and aligning goals with objectives helps to create an open and sharing environment and will help foster trust.

The third approach used to create an engaging collaborative online environment is the technology approach. The technology approach requires that technology be easy to use and transparent in the learning process. Simple, user-friendly access is the most important characteristic to consider.

According to Kearsley and Shneiderman, technology allows for engagement not possible by other means. Online learning must be designed on the framework of engagement for technology-based learning and teaching (Kearsley & Shneiderman, 1999). Opportunities for collaboration that are integrated into an online course design engage the learner with the subject material and with other students to enrich the learning experience.

ONLINE OFFICE APPLICATIONS

One of the hurdles faced in distance education is the creation of a document on which two or more people collaborated. Students are often faced with having to separately compose, share, and combine separate writings into one final document. Too often, the technology gets in the way of learning due to compatibility issues such as proprietary software or the incompatibility of different software programs. Valuable time and energy is spent on resolving software related issues. When collaboratively editing a document, team members must find a way to circulate the document amongst themselves. This process is cumbersome process, often involving the document to be e-mailed as an attachment from one team member to the next, each individually revising the document. Each team member is forced to wait upon the editing and schedule of another team member.

Emerging Web-based office application programs allow users to create documents, spreadsheets, presentations, and databases

online. Common Web-based office application programs include Google docs, Zoho, and ThinkFree. Accessing and using these Web-based office applications require just a few easy steps: create an account, create the document, and share the document with others. These applications allow the creator to share the document with others by granting them the rights to be a collaborator or a viewer. Multiple people are able to access the document for viewing and editing at the same time. Google docs allows for synchronous and asynchronous viewing and editing. Generally, the online office applications support most common files, such as .doc, .xls, .odt, .csv, and .ppt. Created documents are stored and saved online, alleviating the need for local storage and providing access anytime from any location. A definite bonus to cash-strapped school and students is that these programs are available for free. Table 1 offers a comparison of the three online office programs.

Web-based office application programs also help the instructor to monitor plagiarism by making it possible to go back and trace the revisions made by each student. Instructors are also able to determine which members of the team contributed to the creation of the document and which members did not contribute to the document.

REFLECTION: USING GOOGLE DOCS

Our personal experience with online office applications has been with Google docs. We have both experienced using Google docs from two perspectives: from the perspective of a teacher using Google docs in a secondary classroom setting and from the perspective of using Google docs to create documents for our postgraduate coursework. As secondary classroom teachers, Google docs made it possible for our students to collaborate on various projects. For example, the marketing class worked in teams to create business letters seeking sponsorship ads from local businesses. Each team shared a document on Google docs with each other and with the teacher. This provided synchronous monitoring of student work and opportunities

Table 1.   Features of Online Office Applications

Feature	Google docs	Zoho Writer	ThinkFree
File types supported	Text, images	Text, images	Text, images
Software/Web-based	Web-based	Web-based	Web-based (Java)
Public/private collaboration	Public/private	Public/private	Public/private
Text chat	Yes	No	Unknown
Ability to track revisions	Yes	Yes	Yes
Support for RSS feeds	Yes	No	Unknown
Email updates	No	Yes	No
Real time co-editing	Yes	No	No
Ability to add comments	Yes	Yes	Yes
Spell check	Yes	Yes	Yes
Export/file formats	doc, xls, pdf, html, text, rtf, odt	doc, pdf, html, rtf	doc, docx, pdf, html, xml, txt
Price	Free	Free	Free

Source: Adapted from VanderMolen (2008).

for immediate feedback as the students worked. The revision feature provides a mechanism to monitor participation and monitor the thought process of the students. Having the document available online made it easy to access from home or any other remote location. Another great advantage was that production was not slowed down by one student's absence.

Google docs also enabled students to engage in shared note taking. Students shared a document to record the notes for a class. Collaboration about notes taken in class helped those who were poor note takers and those with poor keyboarding skills. Students were provided time during the class to reflect on the notes and make necessary changes and clarifications. Again, using Google docs aided students who were absent from class by making the class notes easily accessible.

Our second perspective, and perhaps a bit more insightful, comes from our experience using Google docs for collaborative writing. In fact, this entire article was created using Google docs. Separated by 60 miles, we brainstormed, collected and shared resources, composed the rough draft, made revisions, and produced a final document without having to personally meet. Since Google docs allows for synchronous and asynchronous viewing and editing, we were both able to edit the document at the same time or sign-in and work at a time that was convenient. Wait time for a revision or change was eliminated because changes were automatically saved and viewable by the other team member. Peer editing occurred on a continuous basis as comments were inserted to communicate with each other. Highlighting and different font colors were used to call attention to important parts of the document. To further enhance communication and collaboration, we were able to open Google Talk, Google's version of instant messaging, to discuss the assignment as we were viewing and editing the document together. We were able to compare all revisions made to the document and could revert to any previous document if needed. By the time this document was finalized, there were 1719 revisions tracking the development of our article. The final document was produced by exporting the text on Google docs into Word. Converting from Google docs into Microsoft Word required some minor format editing.

SUMMARY

Based on our experiences with collaboration through the use of Google docs, we know that Web-based office applications provide collaborative creation tools that result in coordinated, synchronous activities. These activities lead to knowledge construction, which enhances both the learning process and the learning experience. The knowledge we gained through our interactions was enriched through our use of Google docs. We constantly questioned and challenged each other as the writing process unfolded. Being able to work on the same document in a synchronous format provided a richer and more meaningful collaborative learning experience.

Web-based office applications are collaborative writing tools aimed at facilitating the editing and reviewing of documents by multiple individuals in real time or asynchronously. These tools are flexible and useful in learning groups and educational settings. The benefits offered for collaboration through Web-based collaboration tools should be used in distance education classes to expand the level of collaboration and engagement for students and instructors in an online learning environment.

REFERENCES

Alluri, K., & Balasubramanian, K. (n.d.) *Achieving development goals: Collaboration in education and development.* Retrieved August 2, 2008 from http://pcf4.dec.uwi.edu/collaboration.php

Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education*, 27(2), 139-153.

Good, R. (2007, March 1). *Collaborative writing tools and technology: A mini-guide.* Retrieved August 10, 2008, from http://spreadsheets.google.com/pub?key=pe48NjIzZGzkklhz4VF_xcQ

Kaplan, S. (2002). Building communities: Strategies for collaborative learning. *Learning Circuits Online Magazine.* Retrieved August 2, 2008, from http://www.learningcircuits.org/2002/aug2002/kaplan.html

Kearsley, G., & Shneiderman, B. (1999, April 5). *Engagement theory: A framework for technology-based teaching and learning.* Retrieved August 4, 2008, from http://home.sprynet.com/~gkearsley/engage.htm

Sonnenwald, D. H., Iivonen, M., Alpi, J., & Kokkinen, H. (1999). Collaborative learning using collaboration technology: Report from the field. In A. Eurelings, F. Gastkemper, P. Kommers, R. Lewis, R. van Meel, & B. Melief, (Eds.), *Integrating information and communications technology to higher education* (pp. 241-258). Amsterdam: Kluwer Academic.

VanderMolen, J. (2008, August 1). *Collaborative writing.* Retrieved August 11, 2008, from http://www.techlearning.com/showArticle.php?articleID=196605337

Distance Education for Chronically Ill Children

Cynthia Wilson-Hyde

INTRODUCTION AND BACKGROUND

For most American children of school age, the fall season traditionally brings the excitement of the start of a new school year: new classes, new teachers, and experiences with friends old and new. For some children, however, these experiences are nothing more than hopeful wishes that they may someday experience first-hand. These children are prohibited from attending traditional school due to chronic illness. "Most epidemiologic studies indicate that 10 to 15% of the childhood population of the United States has a chronic illness. Approximately 10% of chronically ill children, or 1 to 2% of the total childhood population, have severe chronic illnesses" (Perrin, Ireys, Shayne, & Moynihan, 1984, p. 11).

With a total school age population in the United States of over 73.7 million, and over 40 million children in primary and elementary grades, the number of chronically ill young children is a large population (over 800,000 children) that thus far has not attracted much attention or support from the educational or political communities. Common childhood illnesses are accepted as a normal part of child development, and most run their course in a few days without any lasting harm to the child. In contrast, a chronic illness is one that is defined as "one that lasts for a substantial period of time or that has debilitating sequelae for a long period of time" (Perrin et al., 1984, p. 11). In addition, the Council for Children and Adolescents with Chronic Conditions has added the following conditions to the definition of a chronic health condition. A chronic health condition is one that is biologically based, lasts for an extended period of time, brings about a significant change in the life of the child, and requires more than the usual amount of medical care (Council for Children and Adolescents with Chronic Conditions, 2008).

Chronic illnesses may include such familiar illnesses as asthma, diabetes, kidney disease, sickle cell anemia, Crohn's disease, and cystic fibrosis. It appears that some chronic illnesses among children are on the rise. The prevalence of disabling asthma, as reported in the National Health

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Interview Survey, has increased 232% since 1969. In addition to the rise in some chronic diseases in children, more children are surviving severe medical events or congenital conditions that would have been fatal even a decade ago due to the advances in medical care. In many cases, an acute incident may evolve into a chronic medical condition that allows a child to survive, but severely limits the capability to participate in normal schooling and play. The combination of more instances of childhood illness coupled with more survivors of life-threatening conditions has led to an even greater population of children with chronic conditions that limit their attendance at school. Many chronically ill students suffer no impairment to their ability to learn, but are limited only in their ability to regularly attend classes at the school site; this sub-population of children with illnesses will be the focus of this paper.

Although the number of children with chronic illness is a significant number, very little attention has been given to this national health and educational issue. In a report published in 1984 dealing with issues specific to the educational needs of chronically ill children, researchers noted that "our nation, ordinarily attentive to problems of children and families, has lagged in its response to the urgent needs of children with chronic illnesses" (Perrin, Ireys, Shayne, & Moynihan, 1984). Public education in America has not historically addressed the needs of students unable to attend school due to medical conditions, but federal policy changes since the 1960s have made some progress in defining the responsibility of school systems to the student population of chronically ill children. In a 1983 speech at the National Symposium on Public Policies Affecting Chronically Ill Children and Their Families, then-Representative Al Gore remarked that

> The facts are clear, and the facts have been pinned down by the Vanderbilt

group. Their study clearly identifies a forgotten part of our population, the children, and the families with children, with chronic illness. It is clear that much needs to be done. (Gore, 1983, p. 8)

Beginning with the Elementary and Secondary Education Act (ESEA) of 1965 and following with provisions in the No Child Left Behind Act (NCLB) of 2002, national educational policies began to require that educational experiences be provided for children that are chronically ill under a provision for children with disabilities. The actual implementation of the individual educational plans (IEP) is left to the state educational systems. States provide various options for students unable to attend classes. Options may include visiting teachers, hospital classrooms, and a transfer to home-schooling enrollment, but access and quality of service varies from state to state, and guidelines for the education of chronically ill children, are inconsistent across the nation. Obtaining a designation of "disabled" is often difficult for children with chronic conditions that do not manifest in actual physical or mental deficiencies, and in some cases the designation limits the educational opportunities for the child. Many parents resist seeking this designation for their ill children for fear that it will stigmatize the child during the future school years.

LEARNING ENVIRONMENTS FOR YOUNG STUDENTS

The learning environment for young students is important in preparing them for successful educational experiences. In a 2004 report, *Serving Preschool Children Under Title I* (2004), the Federal Department of Education researchers stated that "language development emerges from social interactions and rich experiences, and self-assurance in a group setting helps children profit from school experiences" (p. 4). A primary school classroom is also a clear reflec-

tion of Bandura's social learning theory; young children learn by watching and modeling behaviors of those around them. There are severe negative implications for young students unable, due to illness, to interact with peers and teachers during the optimal periods for their cognitive and social development. One side effect of chronic illness in children is a high rate of absenteeism due to the illness or medical treatment. Repeated hospitalizations, doctor's visits, and home confinements can disrupt learning patterns and break the continuity of relationships with peers. Students may miss crucial building blocks of learning, and be unable to maintain a consistent path of learning experience. Students may be unable to develop and sustain normal childhood relationships due to confinement in the hospital or at home. Academic under-achievement in the early years of schooling may lead to a severe drop in self-esteem, and set an unhealthy pattern for the student in the long term. Shiu stated that students unable to attend school regularly may become "failures in their eyes and the eyes of their classmates. In this context, the school setting can quickly become a place of failure, both academically and socially" (Shiu, 2004, p. 3). In addition to missing out on academic and social interactions, the patterns of attendance established early in the academic career of a student set the expectations for future behaviors. Research shows that "children with high absence rates early in their school career tend to continue to have high rates throughout their schooling which are useful predictors of future school failure and early leaving (Weitzman, Klerman, Lamb, Menary, & Alpert, 1982).

TECHNOLOGY AND DISTANCE EDUCATION FOR CHRONICALLY ILL CHILDREN

Advances in technology can be utilized to help provide real-time, interactive educational experiences for young students with chronic illnesses. Even in school districts that are under-funded, do not have trained technology staff, or are not yet equipped with traditional video-conferencing equipment that would facilitate the full broadcast of classroom activities, some simple technologies can be easily implemented into the primary and elementary school classroom. Through the use of low or no-cost technology solutions, chronically ill students can connect from home or a treatment center with the their classrooms and classmates. Participation in even a small portion of the everyday classroom activities can mitigate a portion of the negative consequences of missing school due to illness.

SHARING THE CLASSROOM ENVIRONMENT THROUGH TECHNOLOGY

A primary or elementary school classroom is a rich collage of colors, pictures, and posters. Shapes and bright colors are everywhere, and student work usually adorns the walls. Pictures of classroom activities, seasons, weather conditions, alphabet letters and numbers reinforce learning concepts. In the federal report *Serving Preschool Children Under Title I*, conditions for an age-appropriate learning environment for primary and elementary school children should include displays of children's work should be placed throughout the room, and the room should be print-rich, with letters of the alphabet, labels, and printed directions clearly displayed at the children's eye level (Serving Preschool Children Under Title I).

One of the deficiencies sometimes noted in the treatment or sickroom environment when it doubles as a learning environment is the lack a classroom "feel." A small bit of simple technology can be used to allow a homebound student a gateway into a rich traditional educational classroom environment. Through the use of an inexpensive webcam and micro-

phone, a computer, Internet connection, and free Skype voice over Internet protocol (VoIP), young students in a home or treatment environment can see and interact with their live school classroom. The webcam technology at the classroom end captures and transmits both the audio and video portions of the broadcast in real time via Skype and the student can interact as though he or she were attending school in the classroom. Another webcam and computer set-up in the location of the remote student allows students in the classroom to see and hear their classmate as well. Children can converse; ask questions of one another, and share photos, drawings, and stories just as they do in a real classroom, all the while including the student in the remote location.

For children who are unable to participate in a class field trip to a zoo, aquarium, or museum, a virtual trip to the same type of venue can serve to provide a similar experience. Many virtual field trips are available online and even students without health issues are participating in these trips from their classroom computers. If classroom students sketch and write their observations of the field trip and then display them on the classroom walls, a student unable to participate in the actual trip can draw and e-mail a drawing of his virtual field trip to be printed and included in the classroom gallery display. Again using the Skype set-up, a student in a remote setting could easily give his or her oral report about the virtual trip just as the other students do about their live journey. Keeping children connected to their regular academic and social network is cited as important for the mental and emotional health of chronically ill children and can also reduce difficulties experienced by children during their eventual school re-entry (Fels, Shrimpton, & Roberston, 2003). Consistent teacher interaction is also important for educational progress as well as social development of young students. Through the use of simple technologies, the teacher

can interact with the remote student in the same fashion that he or she does with students in the classroom. Federal guidelines indicate that "at the universal level, all children should receive sufficient density of positive feedback from their teachers" (*Serving Preschool Children Under Title I* page or paragraph number needed –Ed.). The use of appropriate technology allows all students, regardless of location, to receive regular feedback from their teachers.

One-on-one discussions with the teacher are also possible through instant messaging or video chats, and e-mail drop boxes allow students to submit homework at the same time as local students. Students in treatment who are unable to participate in real-time class activities can view and listen to recorded class lessons if they are prepared by the teacher, and respond through recorded or videotaped responses. Families can interact through e-mail or live chats with the teacher to maintain a teacher-parent relationship in the same fashion that parents of local students do at the school site.

An added benefit of having young students interact in an ongoing fashion with their healthy peers lies in the mental health benefits derived from the experience for both categories of student. Ill students get to establish and maintain normal friendships with peers that will perhaps be continued once the student is medically stable enough to attend school on-site once again. Healthy students are able to interact with their ill classmate and develop an attitude of empathy and tolerance for individuals suffering from disabilities.

ADDITIONAL TECHNOLOGIES TO SUPPORT THE LEARNING EXPERIENCE FOR OFF-SITE STUDENTS

Many new low- or no-cost technologies are available that can support the sharing of various classroom activities with students in homebound or treatment locations. Web

2.0 applications that allow students to collaborate with their classroom peers provide opportunities for interactivity and collegiality for off-site students. Free voice recording programs such as Audacity permit young students to easily record experiences or narratives for playback to their teacher or classmates. Teachers can also record instructions, lessons, or comments using the Audacity program, and make the files available via the Internet or e-mail. Applications for digital storytelling such as Photo Story provide a vehicle for expression for students that can be shared across distance. In the same way, on-site classmates can create digital stories to share with class members not in attendance. The use of digital photography to record and document activities can provide local and off-site students alike a glimpse into the environments of one another, as well as documenting classroom activities. The free VoiceThreads application allows students from multiple locations to use the Internet to record impressions of photos and create collaborative projects. The Jing screen capture application allows teachers to provide a video clip of screen shots for students as a means of explanation of a topic. Elluminate provides free interactive "v-rooms" for teachers or students to meet with up to three friends at a time for collaborative work. With the cooperation of school administrators, teachers, technology support staff, and parents, students unable to physically attend school can share in a classroom environment from any location simply by harnessing the power of the Internet and using currently available technologies.

CONCLUSIONS

It appears that there is a tremendous need for young students with chronic illnesses to be able access educational experiences comparable to those provided to their healthy peers in the public school system. There are cost-effective, user-friendly tech-nology solutions that can be employed to help fill the gap in the educational experiences of chronically ill young students. More research is needed to establish best practices in distance education for very young students and to provide implementation guidelines for school districts, teachers, and parents of students facing health issues. Processes for establishing an equipment set-up and maintenance program for families with chronically ill students needs to be established to insure that the technology is easy to use and to maintain. Protocols and professional development training for teachers in the primary and elementary grades need to be established to help guide the process of providing the live classroom environments that would be necessary for ill students to access. Patterns of use and training for parents also need to be set up to ensure that the program would run smoothly. Even though there is a framework of initial work to be done, it is important that the American school system does not continue to neglect some of its youngest and most forgotten students—those with chronic illnesses.

REFERENCES

Council for Children and Adolescents with Chronic Conditions. (2008). Retrieved July 27, 2008, from http://www.ccachc.org/

Fels, D. I., Shrimpton, B., & Roberston, M. (2003). Kids in hospital, kids in school. *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2003* (pp. 2358-2363). Chesapeake, VA: AACE.

Gore, A. (1984). Remarks made at the National Symposium on Public Policies Affecting Chronically Ill Children and Their Families (pp. 7-9). Retrieved July 28, 2008, from http://0-www.jstor.org.novacat.nova.edu/stable/1491498

Newacheck, P. W., & Halfon, N. (2000). Prevalence, impact, and trends in childhood disability due to asthma. *Archives of Pediatric Adolescent Medicine*, 154, 287-293.

Perrin, J. M., Ireys, H. T., Shayne, M. W., & Moynihan, L. C., (1984). Education and

chronically ill children: A need based policy orientation. *Peabody Journal of Education*, *61*(2), Retrieved July 22, 2008, from http://www.jstor.org/stable/1491499

Shiu, S. (2004) Maintaining the thread: Including young children with chronic illness in the primary classroom. *Australian Journal of Early Childhood, 29,* 3-10*.*

United States Department of Education. (2004). *Serving preschool children under Title I.* Retrieved August 1, 2008 from http://www.ed.gov/policy/elsec/guid/preschoolguidance.pdf

Weitzman, M., Klerman, L. V., Lamb, G., Menary, J., & Alpert, J. J. (1982). School absence: A problem for the pediatrician. *Pediatrics, 69,* 739-746.

Establishing a Relationship Between Virtual Instructor and Student in the Online Classroom

Stefanie A. Lassitter

INTRODUCTION

Sloan Consortium's annual review in 2007 reported that nearly one in every five students takes an online class, a 10% increase from 2006 (Russell, 2008). The rise in enrollment can be attributed to various factors from convenience to high gas prices. Although at some colleges, the tuition is slightly higher for an online class compared to an on-ground

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class, some students are saving money on the cost of gas, child care, leaving work early, and book purchases (with the use of cost-saving e-books). The trend of online education continues steadily and with this trend comes issues such as the rise in plagiarism/cheating, peer-instructor collaboration, and student attrition. These issues can be addressed by establishing a "connectedness" in the online forum between instructor and student.

CLARIFYING THE ROLE OF VIRTUAL INSTRUCTOR

Studies show that instructors who prefer to teach online exude a greater enthusiasm and commitment to the course and curriculum (Gallient & Oomen-Early, 2008). Initially, many instructors assume that online teaching will be easier, but many find their initial assumptions to be inaccurate. According to McKenzie, Mims, Bennett, & Waugh (2000), "76% of instructors believed they spent more time preparing and delivering an online course compared with a traditional face-to-face course" (as cited by Gallien & Oomen-Early, 2008, p. 465). One online instructor recently commented to my colleague that he was "afraid" of the workload in a newly revised, student-centered online course. This instructor, like many of us, realized the enormous work-

load that comes with online facilitation. However, what sets many online instructors apart is the willingness to continually keep abreast of the technology and different ways to "e-deliver" a curriculum that identifies with many learning styles, as well as address more serious concerns at work in the virtual college.

With this in mind, it is vital that instructors deciding to transition into distance education truly prepare themselves for the workload, as well as the need to demonstrate a firm "connectedness" in the virtual classroom. A few years ago, I applied for an online teaching position, and once my application and curriculum vitae were credentialed, I was placed in an online training program. The training software resembled the software instructors would use once they successfully finished the course. I recall the postings of several of my classmates who felt frustrated that they did not have an immediate response from the instructor. Another peer complained about the difficulty in reading lectures online, as opposed to having a tangible training manual. One instructor posted a response the instructor, "This is too much work!" With this, she withdrew from the training. Without realizing it, she most likely saved the college and future students the headache of dealing with a disenchanted instructor. With the rapidly growing interest in online teaching, it serves virtual colleges well to require discipline-appropriate training that realistically involves the amount of work by including simulated grading and feedback exercises.

ADDRESSING VITAL ISSUES BY ESTABLISHING A VIRTUAL RELATIONSHIP

PLAGIARISM PREVENTION: COACH, NOT CONDEMN

The issue of academic honesty is a rising concern among most college educators and institutions: "Academic fraud in the United States is so widespread … that the problem is undermining the validity of American degrees. The United States [is especially vulnerable] … because it is at the forefront of many of the technological developments…in higher education, such as distance learning …" (Lai, 2007, para. 5-6). As a result, there is a growing distrust between instructor and student that leads to a change or shift in the instructor's approach with his or her students. A professor recently remarked about her student's essay, "This is just *too* good to be true." A submission to Turnitin.com revealed that the essay was "clean," but the instructor spent hours submitting portions to Google.com, and other search engines trying desperately to isolate one sentence, even a phrase in order to justify her "hunch." Is this what grading has come to—a frenzied search for evidence in order to ensure academic integrity in a frenzied search for justice? To avoid this, a discourse must take place in the online classroom *before* students are tempted to plagiarize. As Palloff and Pratt (2007) have noted, "when a course is well constructed, is learner-centered, community-based, and promotes learner empowerment and self-reflection, the notion of cheating should not become a concern" (p. 209). I recently sat in on a plagiarism prevention meeting with six of my colleagues. We discussed ways to prevent plagiarism before it happens, not after it happens. It is vital that the instructor offer a coaching response when incidents of plagiarism arise: "a first offense at plagiarism is treated as an opportunity to educate students about how to properly cite someone else's work" (Embleton & Helfer, 2007, para 5). Part of establishing a strong connection with the student is offering a degree of trust, and a coaching—not a condemning—response to plagiarism.

"SETTING THE TEMPERATURE" TO ACHIEVE PEER CONNECTION AND COLLABORATION

Building a collaborative community of online learners through the facilitation of an instructor should demonstrate a consistent "presence" in the classroom; whether we realize it or not, students tend to look to each other and the instructor for connection, validation, and feedback. However, some students transitioning from the on-ground college experience to the abstract online experience admit that they aren't sure how they will understand their professor and peers without the use of backchannel signals and body language. Therefore, instructors must create strong peer connections resulting in collaborative writing, discussion, and learning. Students discover that discussion forums allow for the power of anonymity. Lieblein (2000) notes, "One of the main advantages of online discussion forums is that they take away the apprehension, embarrassment and pressure students often have about contributing to live-class discussions" (as cited by Lam, 2007, p. 4). As one study by Whipp & Chiarelli (2004) reported,

> Some students … commented that toward the end of the semester, when online discussions were no longer required, their motivation to stay engaged waned. One student stated, "I depended on the interaction with other students to keep myself motivated, and when that wasn't there, my motivation dropped a lot." (as cited by Artino, 2008, p. 34)

Peer connection and collaboration relies upon the level of participation of each student as well as the instructor. The instructor plays a large role in helping a shy group to connect with each other. Likewise, the instructor is responsible to ease escalating tension, and even address virtual "bullying." As educators, we can set the "temperature" in a classroom: chilly (non-responsive, no customer-service skills), or hot (micromanaging, nit-picking due to conflicting agendas that may have nothing to do with the core outcomes of the course; as a result, the student is confused and perhaps over-stimulated). A former colleague once observed two of her online students disagreeing on a topic. Rather than allow them to work through the minor issue, she deleted their postings and quickly wrote them an e-mail explaining why arguing does not resolve anything. Her response was incorrect. The students weren't swearing, or "e-yelling" (using explanation points, all caps, etc.). Rather, they were attempting to iron out what appeared to be an initial misunderstanding. This instructor stopped what could have been a valuable learning experience for both students by over-reacting and reading too much into their discussion. This stemmed from her concern that the classroom would accelerate out of her control. This is a concern among many instructors; however, there must be a balance between facilitating and micromanaging. A "warm" instructor remembers that there is a plethora of learning styles in the classroom, and should be sensitive to a student's need for consistent, constructive, but polite feedback. A "warm" instructor also knows and accepts that students occasionally disagree, and when to intervene.

According to Richardson and Swan (2003), students evaluated the role of their instructor's "social presences" surprisingly high: "perception of social presence … accounted for 35% of the variability in students' overall satisfaction with the instructor" (as cited by Gallien & Oomen-Early, 2008, p. 467). Specifically students respond to the instructor's attempt to reduce "psychological distance" (Gallien & Oomen-Early, 2008, p. 467) by asking questions, being personable, sincerely encouraging, and avoiding the "canned response." Canned responses fail to reach beyond

"good" and "thank you for submitting." [Why are we thanking students for doing their job?] Rather, we must offer a more sincere and appreciative approach. While students love appreciative feedback, the canned responses become quickly outdated, and the quality of the student's work may slip.

STUDENT RETENTION: "SHOULD I STAY, OR SHOULD I GO?"

Online learning offers flexibility for the non-traditional student. On the other hand, there are other obstacles that may impede one's commitment to the course, such as lack of self-direction and motivation. Many students are not completely aware of the enormous commitment involved in an online course. The instructor is responsible for assisting the student through this transition in the classroom. To do this, a mentoring role must begin with each student. Maureen Andrade (2007) discusses a study on student retention:

> One program included a seminar component (Crissman, 2001), and the other featured both faculty mentoring and integrated content (Franklin, 2000). The programs varied in the number of courses linked. In both cases, peer and faculty support seemed to be a key factor to students' learning. Most notable perhaps is the understanding gained in the Franklin (2000) study that it was the collaboration among students [and instructor], not the integration of course content, that was the most valuable. (p. 5)

One study reveals a concern regarding the retention rates in online higher education: Carr (2000) reports that "retention rates in online distance learning courses ranged from 50% to 80%, while the rates for face-to-face courses typically range from 80%-90%" (as cited by Dietz-Uhler, Fisher & Han, 2007, p. 105). Many causes for drop-outs from online classes included personal issues like marriage, moving,

birth of a child, etc. However, some students indicated reasons such as weak or confusing curriculum, and lack of instructor participation, feedback and replies to student e-mails. The latter can be highly problematic, as students want to be "heard" in this aggressive, highly technical forum. A student once sent me an e-mail that detailed her concerns with an assignment. Her tone in the e-mail seemed to become progressively frustrated, and at the end of the note, she confessed that she was afraid that I would not understand her questions and concerns, and may even ignore her note. Her past experience with other online classes taught her that she was a student number, a "faceless name" in the virtual college. My response to her was simple, assuring and prompt: "I 'e-hear' you, and understand what you're asking…." Virtual instructors aren't in the daycare business, and do not want to coddle students on their degree paths. However, we are expected to validate, encourage, and motivate them by offering a consistent, approachable presence. We can deliver a human side to virtual teaching on the LED screen by adopting the premise, "I 'e-hear' you."

CONCLUSION

The successful virtual instructor realizes the commitment of offering guidance, nurturing, and mentoring via written communication.

Through quality facilitation, and prompt responses both in the discussion forum, and in the gradebook, there is a decreased risk of attrition, and a greater chance of retention. Most educational software programs allow courses to run on their own, but a true "classroom" is one where the instructor demonstrates leadership skills by welcoming, maintaining, and seeing students out of the course while upholding the core objectives and learning outcomes.

REFERENCES

Andrade, M. R. (2007). Learning communities: Examining positive outcomes. *Journal of College Student Retention, 9*(1), 1-20.

Artino Jr., A. (2008). Promoting academic motivation and self-regulation: Practical guidelines for online instructors. *TechTrends, 52*(3), 37-45.

Dietz-Uhler, B., Fisher, A., & Han, A. (2007, September). Designing Online Courses to Promote Student Retention. *Journal of Educational Technology Systems, 36*(1), 105-112.

Embleton, K., & Helfer, D. (2007, June). The plague of plagiarism and academic dishonesty. *Searcher, 15*(6), 23-26.

Gallien, T., & Oomen-Early, J. (2008, July). Personalized versus collective instructor feedback in the online courseroom: Does type of feedback affect student satisfaction, academic performance and perceived connectedness with the instructor? *International Journal on E-Learning, 7*(3), 463-476.

Lam, W. (2004, December). Encouraging online participation. *Journal of Information Systems Education, 15*(4), 345-348.

Palloff, R.M. & Pratt, K. (2007). *Building online learning communities: Effective strategies for the Virtual Classroom*. San Francisco: Wiley.

Russell, J. (2008, August). Online class enrollment on the rise. *The Daily Helmsman Online.*

Some Time to Play
Individual Technology Adoption Decisions and a Diffusion Strategy

Tony Kahler

INTRODUCTION

It's 3 days before Winter break and you receive the package. No, it's not a present from a student or colleague, but from a vendor and your director; it is a tablet PC with a built-in Web cam. The note attached … "Take this home, have fun! Have a nice break, send an e-mail to Judy for an appointment after the break." One week later: the New Year's calendar with digital pictures from last year, check; revised syllabus for next semester, check; video chat with brother and niece, check; new Web pages with video and podcast

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lectures to supplement Power Point slides; next week while at the beach. It's not a dream. It is more than a pilot test. It's an organization with a strong vision and mission for relationships and quality support services. It is a user-friendly technology innovation diffusion strategy that provides the end-user with a new technology, and time and the opportunity to play, that is, practice, with the technology on a trial basis to learn about an innovation or how to use a technology. As indicated in a teacher survey response, the strategy could be very accommodating for some.

> Teachers should have time to play and learn with different applications already available in schools … playing gives ideas on how you use computers with students … I would like to see more release time or having computers available including a laptop for teachers to take home for extra practice [and] preparation. (Wozney, Venkatesh, & Abrami, 2006, p. 194)

The strategy being promoted in this essay involves employees interacting directly with a technology or innovation in order to explore its use and gain insight for its educational applications as part of the innovation decision-making and adoption process. The two primary elements are time and the opportunity (access and freedom) to practice with an innovation. The idea relates to expectancy-value theory and to innovation diffusion theory. The premise is that a user-friendly diffusion strategy that provides end-users with time

Table 1.   Summary of User-friendly, Time-Practice Diffusion Strategy

Theory Base	Implication for Time	Play (Practice) Addresses/Influences:
Rogers	Diffusion process takes time; Optional-adoption decisions take time	Method and manner of diffusion; Perceived attributes of an innovation: advantages, compatibility, complexity, trialability, and observability
Berge	Time relates to major barriers for adopting distance education	Influences barriers related to technical learning, credibility, informed decision-making, compatibility and confidence of innovation, and organizational change
Wozney	Time relates to experience gained from personal use of technology; There is a lack of time for technology training	Expectancy-value through personal use of computers/technologies, training/learning, access, advantage, and compatibility and confidence
UTAUT	Time relates to the period between intention to use and actual use; Perceptions about a technology change over time	Perceptions about a technology change with experience (training). Increasing experience with an innovation provides a more voluntary basis for an intention to use an innovation versus compliance of use from social influence and affects actual usage

and opportunities to practice with a technology may increase the perceived value toward the innovation and lead to higher levels of implementation. Intended or unanticipated consequences may also address issues related to organizational barriers to educational technology innovations. The caveat … time needs to be allocated for learning about new technologies. The theoretical base supporting the strategy stem from Rogers' Theory of Diffusion of Innovations; Wozney's research on expectancy-value and teachers' perceptions of instructional technologies; Berge's research on barriers to distance education; and research from Venkatesh on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. Suggestions for a user-friendly diffusion are listed to help facilitate the innovation-decision process. Incidentally, the suggestions directly or indirectly address many of the student barriers to distance education identified by Miulenburg and Berge (2005).

ROGERS

Rogers' (1995) theory of diffusion of innovation indicates that people will adopt innovations at different rates depending on their individual perceptions of that innovation, where an "innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12) and "diffusion is the process in which an innovation is communicated through certain channels over time amongst the members of a social system" (p. 5). The different categories of adoption classified by Rogers are innovator, early adopter, early majority, late majority, and laggard and characterize the relative order an individual adopts (uses) an innovation. Diffusion is they way in which awareness of the innovation is conveyed. This essay suggests diffusing educational technology innovations in a manner that conveys a client-centered user-friendly approach and that ultimately leads to an optional (voluntary) decision to use an innovation.

An individual's innovation decision-making process involves a progression through five stages identified by Rogers (2003) as Knowledge, awareness of the innovation; Persuasion, forming favorable or unfavorable attitudes toward the innovation; Decisions, choosing to adopt or reject the innovation after engaging with it; Implementation, putting the innovation to use; and Confirmation, seeking rein-

forcement of the decision to continue, re-invent, or revise the decision.

Decisions to adopt an innovation can be optional innovation-decisions, collective innovation-decisions, authority innovation-decisions, or contingent innovation-decisions (Rogers, 2003). Decisions are either favorable leading to acceptance, or unfavorable leading to rejection and decisions have intended or unanticipated consequences. Optional and collective decisions to use an innovation are more end-user friendly, and may garner more support through the innovation decision making process than top-down mandates. When educators have time and freedom to explore the use of an innovative educational technology, it is more likely that informed and supported decisions will be made about the innovation. The time, exploration, and practice with an innovation initiates the adoption-decision process by providing awareness and knowledge of the innovation. This may also expedite more accurate evaluations (persuasion and decision) to be formed, as well as more effective implementations. Though speculative, a user-friendly diffusion strategy could produce longer-term self-sustaining adoptions, which could translate to a better economic return of investment.

What influences the rate of adoption decisions is a function of its perceived attributes. Rogers (2003) identifies characteristics of the perceived attributes of an innovation as its "relative advantage, compatibility, complexity, trialability, and observability" (p. 15). Research indicates that lower levels of complexity along with higher levels of advantage, compatibility, trialability, and observability leads to faster and higher rates of adoptions (Rogers, 2003). What is being suggested in this essay is the end-user of an innovation be given the opportunity (time) to use an innovation on a trial basis and be given time to observe the use of an innovation in order to discover and discern the innovation's relative advantage over existing systems;

compatibility with current practices, curriculum, and infrastructures; and to evaluate its complexity—the potential difficulties and learning curve. For an organization, providing the time to explore an innovation as part of the decision making process may prove to be more beneficial for the organization and its individual members. Innovations perceived as having a high value are less likely to be received with resistance. To some extent, Rogers' perception attributes relates to expectancy-value theory. Research applying expectancy-value to perceptions of computing technology provides useful insight for the diffusion process.

WOZNEY

Research by Wozney, Venkatesh, & Abrami, (2006) indicates that teachers' perceptions affect the acceptance and use (adoption) of educational technologies. The results of their research are summarized:

> The study found that: (a) expectancy of success and perceived value were the most important issues in differentiating levels of computer use among teachers; (b) personal use of computers outside of teaching activities was the most significant predictor of teacher use of technology in the classroom; and (c) teachers' use of computer technologies was predominantly for "informative" (e.g., World Wide Web and CD-ROM) and "expressive" (e.g., word processing) purposes. Results are interpreted in light of the extent to which the expectancy-value model can explain the variation in teacher beliefs related to computer technology use. (p.173)

Of particular interest and relevance are points (a) and (b). Expectancy of success and perceived value relates to Rogers' perception attributes of relative advantage, compatibility, and complexity. As perceptions of relative advantage and compatibility increase, and perceptions of

complexity decrease; value and expectancy increase, resulting in higher probabilities of technology use. Increasing favorable perceptions expedites the innovation adoption process. The method or strategy suggested to increase favorable perceptions is to increase opportunities for trials and observations of an innovative educational technology (hardware, software, system, or practice). Point (b) of the Wozney et al. (2006) research lends support to the strategy. The research results indicate that personal use of computers outside of teaching activities was the most significant predictor of technology use in the class. While there are limitations to the research and transferability of the results, it is being suggested in this essay that a user friendly diffusion strategy that affords time and opportunity to practice with technology innovations may lead to favorable adoptions and effective and efficient use of an innovation. Additionally, if applied to distance education technologies, the strategy may produce intended or unanticipated consequences of reducing identified barriers to distance education.

BERGE ET AL.

While favorable perceptions may lead to a faster adoption of an innovation or technology, negative perceptions may produce barriers to adoption. In their review of the literature about barriers to technology, Berge and Mrozowski (1999) state findings from Schofield (1995). "One important factor [of a barrier to technology use] was the belief by teachers that computer use would add little value to current practice. Another belief that she reported was that existing educational software was not useful in the classroom" (p. 61). The examples relate to expectancy-value theories and "relative advantage" and "compatibility" of Rogers' diffusion theory. The examples indicate perceptions of a relatively low value placed on computer use and little compatibility with educational software. The nega-

tive perceptions create barriers to implementing a technology. Through literature reviews and research, Berge and Muilenburg (2001) categorized barriers to distance education into 10 factors related to Administrative Structure, Organizational Change, Technical Expertise, Social Interaction and Quality, Faculty Compensation and Time, Threatened by Technology, Legal Issues, Evaluation/Effectiveness, Access, and Student Support Services. Cho and Berge (2002) followed up with research leading to suggestions for overcoming the barriers. The diffusion strategy of time and play provides knowledge of the innovation that may produce an intended or unanticipated consequence of addressing many aspects of the most prominent barriers of time, organizational change, technical expertise, technology threats, and access. Research about barriers to online teaching and learning also indicate that perceptions of an innovation affect rates of adoption.

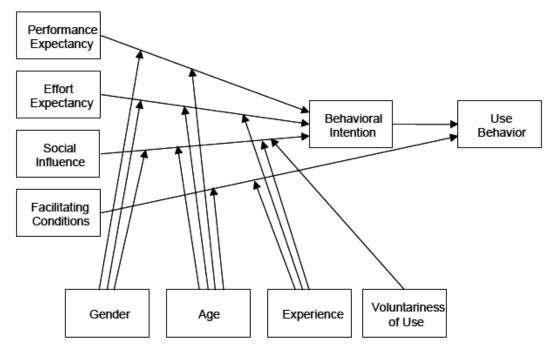## UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY

The relevance of the Unified Theory of Acceptance and Use of Technology (UTAUT) model for the suggested diffusion strategy is threefold; one is that it consolidates many of the research models and theories related to the acceptance and use of technologies and innovations; two, is that it illustrates the connection between expectancies about, intention towards, and actual usage of a technology; and three, research results indicate that time and experience with a technology serve to increase perceived values and reduce perceived complexities.

Venkatesh et al. (2003) state that

the UTAUT model provides a useful tool for managers needing to assess the likelihood of success for new technology introductions and helps them understand the drivers of acceptance in order to proactively design interventions (including

training, marketing, etc.) targeted at populations of users that may be less inclined to adopt and use new systems. (Abstract)

The training and marketing—diffusion strategy—proposed in this essay is providing time and access to technologies in a user-friendly manner that allows individuals the ability to use and understand a technology in order to make more accurate evaluations before accepting or rejecting a respective technology or innovation. Venkatesh et al. (2003) describe the UTAUT model as an integration of elements from eight acceptance models: theory of reasoned action, the technology acceptance model, the motivational model, the theory of planned behavior, a model combining the technology acceptance model and the theory of planned behavior, the model of PC utilization, the innovation diffusion theory, and the social cognitive theory. Through research studies, Venkatesh et al. (2003) condensed elements from the eight acceptance models into four common constructs that serve as determinants of an individual's intention to use a technology and the actual usage behaviors. The four constructs as describe by Venkatesh et al. are:

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance. Effort expectancy is defined as the degree of ease associated with the use of the system. Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system. Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. (pp. 447-453)

Source: Venkatesh et al. (2003, p. 447, Figure 3).
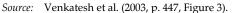
Figure 1.   Diagram of the UTAUT model.

As indicated in the Venkatesh diagram (see Figure 1), performance expectancy, effort expectancy, and social influence are direct determinants of behavioral intention; and facilitating conditions and behavioral intention are direct determinants of usage behavior. Venkatesh et al. also identified four key variables (gender, age, experience, and voluntariness of use) that were found to moderate the significance of the determinants.

The research indicates that experience (through training) and voluntariness of use, moderated the determinants. The application is that providing training with a technology, along with the optional or voluntary decision to adopt or reject its implementation, over time, moderates negative perceptions (barriers) that negatively influence behavioral intention and usage behavior. This is to say that over time with experience what was once an important issue related to performance and effort became less important. When first introduced to a technology, for example, perceptions of complexity, performance, and effort may be negative from being overwhelmed, but through training and time the perceptions of complexity, performance, and effort subside. The method of implementing a diffusion process can influence the consequences of the adoption decision.

The findings of Venkatesh et al. (2003) are consistent with research from Berge et al.; that as institutions become more mature and capable, previously perceived barriers like technical expertise and credibility become less of an obstacle. Time and favorable experiences mitigate both individual and organizational barriers.

NOTES FROM THE FIELD

The writer recently engaged in a conversation with the principal of the Federal Way Internet Academy, a virtual high school in Washington State. The 30-minute conversation was video recorded and later observed. The original intent was to interview the principal about the innovation-adoption strategy suggested in this essay. What unfolded, however, was an unscripted conversation that brought terms and concepts related to innovation diffusion and expectancy-value theories to life. The principal's description of the adoption process for a new online learning management system could serve as a case study for barriers to distance education, innovation adoption-decisions, as well as expectancy research methods like the Unified Theory of Acceptance and Use of Technology model. The most prominent factor described by the principal was perceptions towards change: "the biggest obstacle…is just the change." The principal also expressed views that support the central theme of this essay. He stated, "the best way to learn software is to sit down and play with it" and projected that time and experience will mitigate the perceived barriers towards change and the new software technology. The adoption process utilized by the school was to engage four teachers, students, and the principal in a pilot study during summer school courses. The principal's description of the rationale and process for changing the learning management system, and the experiences resulting from it, related to terms and concepts from the cited research of Rogers (2003) and Berge et al., e.g., relative advantage, complexity, compatibility, trialability, and observability; collective adoption-decision; barriers of change, technical expertise, student support structures, access; as well as student barriers of technical skills and social interactions.

CONCLUSION

The suggested strategy of providing time and opportunity to practice with a technology innovation has the goals of increasing the number of individuals with the intention to use the technology, and to increase

the rate from "intention to use" to actual usage of the innovation. The speculated result would be to increase the adoption rate and to produce higher levels of effective and efficient usage. Theoretical models may serve as a framework for research and ideal programming. It was particularly refreshing to find a living museum, of sorts, for diffusion and expectancy-value theories where the curator is a champion and opinion leader for technology innovation, distance education; as well as for teacher and student friendly adoption decisions allowing the time, access, and freedom to play with new technologies.

APPENDIX: SUGGESTIONS FOR USER-FRIENDLY DIFFUSION STRATEGY

Vendors/Suppliers of Hardware, Software, DE technologies

- Provide equipment, software, simulations, and/or user accounts along with training resources to clients or potential clients.

Administrators

- Establish policy and procedures to allow educators time to learn (explore, play, use, test), access to technologies, and when possible availability to use technologies off-campus. This might entail a check-out policy and some form of technology and media library.
- Establish vendor relationships that allow for test-drives of technologies, or simulations of the technologies, more so than official pilot studies

Trainers

- Provide enough time, training materials, and or demonstrations for educators to get comfortable with new or existing technologies

- Be customer-service, client-oriented, as opposed to technology-oriented

Educators

- Identify how new technologies fit with existing practices and curriculum, reinvent existing technologies to take advantages of efficiencies
- Request a sample copy, trial downloads, trial model/equipment, trail user account, etc., for the new technology as was done in the past for sample copies of a new textbook
- Practice with technologies at work, home, vacation—wherever and whenever possible
- Practice using technologies with other educators or local or regional user groups
- Ask questions about the technologies
- Observe others using the technologies and the results of the use
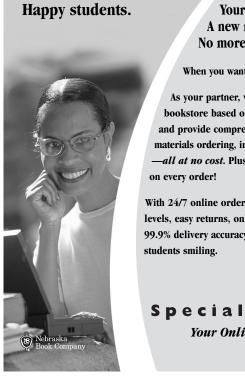- Request more time for training and learning

Students

- Use tutorials for software or learning systems when possible
- Look for and use other sources for learning software technologies from the vendor, check with the library, professor, or media help desk
- Get student sample copies, trial downloads
- Practice using technologies with other students or local or regional user groups

REFERENCES

Berge, Z. L., & Mrozowski, S. (1999). Barriers to online teaching in elementary, secondary, and teacher education. *Canadian Journal of Educational Communication*, 27(2), 59-72.

Berge, Z., & Muilenburg, L. (2001). Obstacles faced at various stages of capability regarding distance education in institutions of higher education. *TechTrends*, 45(4), 40-45.

Cho, S. K., & Berge, Z. L. (2002). Overcoming barriers to distance training and education. *Ed: Education at a Distance, 16*(1). Retrieved July 23, 2008, from http://www.usdla.org/html/journal/JAN02_Issue/article01.html

Miulenburg, L., & Berge, Z. L. (2001). Barriers to distance education: a factor-analytic study. *The American Journal of Distance Education*, *15*(2), 7-22.

Miulenburg, L., & Berge, L. (2005). Student barriers to online learning: A factor analytic study. *Distance Education, 26*(1), 29-48.

Rogers, E. (2003). *Diffusion of innovations* (5th ed.). New York: The Free Press.

Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425-478.

Wozney, L., Venkatesh, V., & Abrami, P. (2006). Implementing computer technologies: Teacher's perception and practices. *Journal of Technology and Teacher Education, 14*(1), 173-207.

Guidelines for Professional E-mail Communications

Natalie B. Milman

Although an article by Lorenz (2007) in the online magazine, *Slate*, discussed the "death of email," e-mail communications are alive and strong, even if their use is waning among teens and others who favor texting, IMing, and other forms of digital communication. In fact, in 2008, legitimate e-mail communications topped over 150 billion

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(Radicati Group, as cited in Tsatchabitscher, 2008) and over "67% of consumers preferred email as a means of being contacted by businesses" (Leggatt, 2008). A study by Weiss and Hanson-Bauldalf (2008) found e-mail "to be a viable and indispensable means of communication in academia … that has the potential to greatly enhance academic learning" (p. 48). However, the researchers also noted that it was necessary for professors to establish clear guidelines for e-mail communications—not only to set clear parameters for communicating but also to alleviate frustration by both professors and their students. The criteria they suggested for consideration in determining guidelines ranged from appropriate and inappropriate uses of e-mail, to formality and grammar, to expectations of responsiveness (e.g., how much time it will typically take a professor to respond).

In a time when digital communications of all sorts are common, guidelines for e-mail communications are needed. Even so, information about how to craft an e-mail, especially a professional, formal one, is not a typical component of acceptable use policies within most organizations. For instance, George Washington University's (GWU) "GWMail Policy" (see http://my.gwu.edu/files/policies/GWMailPolicy-FINAL.pdf) outlines standards for anyone

using a GWU e-mail account, which includes information about inappropriate uses of e-mail communications, among several other important issues. However, it does not provide commonsense guidelines for communicating in a professional manner. This article provides some general guidelines for professional e-mail communications which may be applied in professional, educational, and personal settings whether an email recipient is a colleague or supervisor at one's work, one's distance education professor, or an officer in a volunteer organization.

GUIDELINES FOR SENDING PROFESSIONAL E-MAIL COMMUNICATIONS

A general tip for writing a formal, professional e-mail message is to consider it is the same as writing a letter—and be sure to include the major parts of a letter.

1. Address the recipient in some way by title or name (e.g., Dr. Milman, Dear Professor, etc.). The easiest—and safest—way to address someone is by title—it makes it easier to avoid addressing a recipient by the wrong gender. Even if you know the recipient, referring to someone of authority by title demonstrates knowledge of the person's status.
2. Include a subject that accurately describes the contents of the e-mail. If the e-mail is about an assignment, then include a subject line such as "research paper assignment question"—this gives the recipient an idea of the contents of the message and its importance. Many professors have more than a hundred students and multiple classes, and may not know what you are referring to if you ask about "homework."
3. Provide some type of signature that includes your name. It is important for the recipient to know who sent the e-
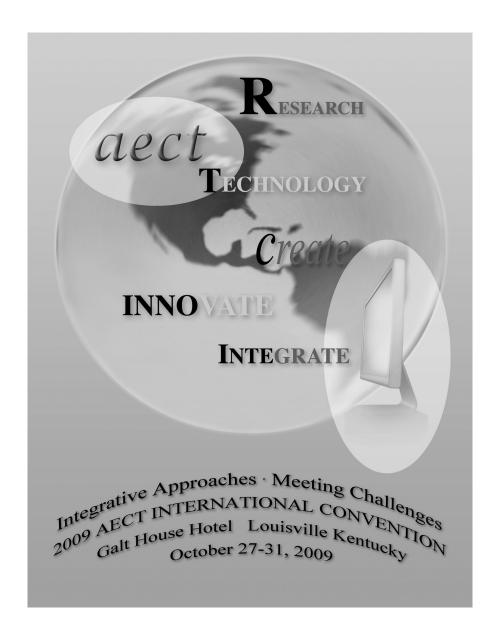
mail. Many e-mail addresses do not clue recipients in as to who sent an e-mail– and even if it does, it is not the recipient's job to guess who sent the e-mail! There have been times that I have received e-mails without an e-mail signature and from a non-university address. I had to reply inquiring who the e-mail was from before I would respond to it.

4. Use appropriate grammar and syntax. This cannot be emphasized enough. In educational and professional environments, it is important to maintain a sense of formality when communicating, especially when it is documented. Rather than thinking of an e-mail as a text message or something similarly impermanent, think about it as something more lasting like a letter (and indeed some professors and administrators print out all of their correspondence, file it in a digital file folder, and/or save it indefinitely—some even might refer to correspondence from an individual when crafting a letter of recommendation).
5. Proofread before sending! Some of us are better typists than others. Just as you should conduct a spelling and grammar check, be sure the content is accurate not only considering your intended message or question, but also the tone.
6. Do not send an e-mail that you might later regret. Always consider that your e-mail message may later come back to haunt you. This can happen when a recipient forwards your message to others, erroneously or purposefully.

Another consideration when sending e-mail involves whether or not e-mail is the best mode of communication in the first place. Sometimes, it is best to meet in person, and if that is not possible, then a phone or Web conference should be scheduled.

REFERENCES

Legatt, H. (2008). Consumers prefer email communications with businesses. *BizReport*. Retrieved December 31, 2008, from http://www.bizreport.com/2008/05/consumers_prefer_email_communication_with_businesses.html

Lorenz, C. (2007). The death of email: Teenagers are abandoning their Yahoo! and Hotmail accounts. Do the rest of us have to? *Slate*. Retrieved December 31, 2008, from http://www.slate.com/id/2177969/

Tsatchabitscher, H. (2008). *How many emails are sent every day?* Retrieved December 31, 2008, from http://email.about.com/od/emailtrivia/f/emails_per_day.htm

Weiss, M., & Hanson-Bauldauf, D. (2008). Email in academia: Expectations, use, and instructional impact. *Educause Quarterly, 1*, 42-50. Retrieved December 31, 2008, from http://connect.educause.edu/Library/EDUCAUSE+Quarterly/EMailinAcademiaExpectatio/46032

ISN'T IT TIME

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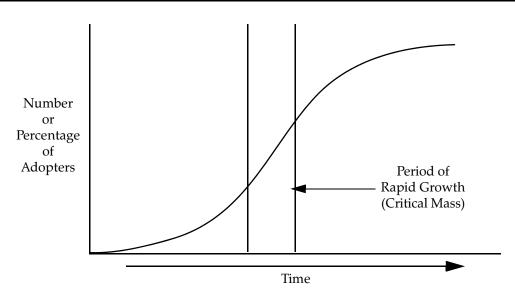

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Figure 1.   S-shaped adoption curve for an innovation.

adopt the idea. In 2007-08, 22% of college students were distant learners; it is likely that distance education has "arrived."

The game changes for distance learning leaders at this point; instead of convincing, informing, and persuading, the distance educator will now manage, support, and evaluate. After years of efforts trying to convince whomever would listen that distance education, distance learning, online learning, or virtual schooling were effective ways provide education, it will in the future be important to explain how to administer, how to improve, and to how to revise. The literature of the field will change, the ideas that support the field will evolve, and the impact of the field will increase.

And finally, critical mass is also defined as the smallest amount of fissile material needed for a sustained nuclear chain reaction. If distance educators do not want things to "blow up in their faces," then careful and unbiased guidelines and best practices will need to be made available; grandiose promises about saving education must be avoided and realistic, practical, and reasoned advice should be given.
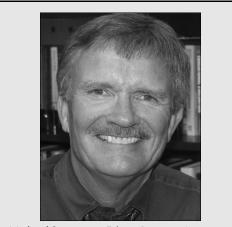
REFERENCES

Allen, I. E., & Seaman J. (2008). *Staying the course: Online education in the United States, 2008*. Needham MA: Sloan Consortium.

Rogers, E. (2003). *Diffusion of innovations* (5th ed.). New York: Simon & Schuster.

Critical Mass

Michael Simonson

Everett Rogers (2003) defined critical mass in his classic work, *Diffusion of Innovations* (5th ed.), as a crucial concept in understanding the nature of the diffusion process. Critical mass occurs at the point at which enough individuals have adopted an innovation so that the innovation's further rate of adoption becomes self-sustaining. In other words, the innovation becomes so widely accepted and used that there is little need to convince nonusers to adopt; it is only a matter of time until the vast majority

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become users. According to Rogers, an innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption.

To many, distance education is a new idea, sometimes misunderstood but often unknown, until recently. According to the latest Sloan Consortium report titled *Staying the Course, Online Education in the United States, 2008* (Allen & Seaman, 2008), distance education has become better known, widely practiced, and even politically mandated.

Staying the Course is must reading for those interested in the increasing impact of distance education in higher education in the United States. One statistic jumps out of the document—almost 22% of higher education students enrolled in an online course in the last year; a doubling of enrollment over the 5 years since the first Sloan Consortium report about online learning. Almost 4 million higher education students took an online course in 2008.

Critical mass is an important concept for distance educators because it is at this point in the diffusion of a new idea when it "takes off on its own" with little or no need for advocacy by change agents—those with a responsibility to promote the idea. Historically, critical mass of a new idea, such as the adoption of cell phones or the use of the Internet for e-mail, occurs when between 15% and 35% of potential users