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ABSTRACT

The technology triage is a workable paradigm for straightforward school-site/school-district implementation of technology resources. Development of a triage system of participant involvement and in-service staff development can help address the tendency to ineffectively allocate funds within the total picture of the school commitment to technology. Schools need more effective, redefined staff development for training teachers to fully integrate information technology into classroom instruction. The new model capitalizes on strengths of the learning patterns, de-emphasizing the processing and acquisition of large amounts of new, nonessential information and emphasizing the development of cognitive functions promoting responsibility, usefulness, and accuracy. The workshop paradigm has learners actively participate in the decisions about what is to be learned. The technology triage provides an environment of involvement at the building level. It involves performing an individual technology-learner readiness triage to find out what level and type of development is needed. The triage method classifies participants based on individual technology capabilities. There are three triage levels: the technology assistant level involves developing basic technology skills; the technology teacher level builds on the first and involves learning relevant software, hardware, and program capabilities; and the technology leader level involves learning how to best use the skills and knowledge developed in previous workshops and encouraging development of a greater pool of technology teachers. (Contains 18 references.) (SM)

TECHNOLOGY STAFF DEVELOPMENT:

Triage Using Three Mastery Levels

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Introduction

A 1995 government study reported that public schools in America spend an average of 55 percent of their technology budget on hardware, 30 percent on software, and less than 15 percent on staff development. This is about half of what technology experts recommend spending on technology training (Harrington-Lueker, 1996). There are few programs in public schools, in particular rural schools, today that offer more than a promise of the proper use of technology in the classroom (Holland, 1995). School leaders and policymakers are facing the problem of having technologically wired classrooms and no teachers or staff who understand anything more than the most basic rudiments of using this sophisticated teacher aid. There is a need to change the thinking regarding the role of professional in-service staff development in the schools as these processes relate to using technology to bring about school change and enhanced student performance (Thornburg, 1995).

This paper takes the position that the development of a triage system of participant involvement and in-service staff development can serve as a means of addressing the tendency to ineffectively allocate funds within the total picture of the school technology commitment. A possible remedy to this real world situation will be presented as a workable paradigm for straightforward school-site/district implementation of technology resources.

The Preparation Gap

One of the first, and most important steps to alleviating the confusion about the proper

uses of technology in the classroom begins in college based teacher education programs. Colleges' of teacher education are aware of the preparation gap between what the faculty know and what these same faculty know is needed in teacher preparation. The gap for teachers working in a technology based classroom and what really exist today in teacher education curricula is vast. A recent survey of education professors revealed that 76 percent indicated information technology is now a very important aspect of education; 82 percent said information technology would come into its own within a decade. However, when recent education graduates were polled more than 50 percent reported that they were poorly prepared to understand or use current information technology (Barksdale, 1996). Further, only 3 percent felt they were "well prepared." Few of these new teachers were able to work collaboratively over networks, use e-mail, or access other information technology services or capabilities beyond their local school site. The end result of this shortfall is that the public schools have to re-train these teachers on the uses of technology in the classroom. This sophisticated and dynamic training has become an additional burden to schools already bowing under other pressures related to change and performance (Bell, 1995; Long, 1987).

Second, school administrators use a different set of criteria in determining the usefulness of technology in the classroom. Teachers, the actual day-to-day users of technology in the classroom, make their decisions on using technology related to issues about how easy the technology is to learn and operate. Teachers focus on how much time and energy it takes to maintain the technology and how reliable is the technology with daily use. Administrators make their decisions about technology in the classroom on a cost per pupil and how it could revolutionize teaching and learning (Long, 1987).

New Model for Technology Staff Development

What is currently needed in school is a more effective use of staff development to train teachers in how to fully integrate information technology as part of classroom instruction. Staff development practice needs to be completely redefined. While teachers may be comfortable with old ideas on the uses of teaching aids, i.e., film projectors, slide projectors, chalkboards, flip charts, computers, networks, etc., they must give up antiquated ideas and practices regarding their use in the classroom and embrace the full potential of available technologies (Thornburg, 1995). Teacher training or staff development must break technological material into absorbable elements. Learning is better facilitated in settings where complex material, as found in technology, is divided into smaller portions over a period of time that includes significant follow-up and hands-on practice using the technology in real world settings (Brunner, 1996; Cowan, 1996; Cuban, 1995; Tally, 1995).

The Troublesome Legacy of Pedagogy

Both content and teaching methods in today's schools are disadvantageous to contemporary learners. A new education model needs to be implemented that would capitalize on the strengths of the learning patterns which would de-emphasize the processing and acquisition of large amounts of new, nonessential information and, would rather, emphasize the development of cognitive functions that focus on responsibility, usefulness, and accuracy (Cross, 1987; Davenport & Davenport, 1985; Drummond, 1992; Hultsch & Deutsch, 1981). Adoption of the following paradigm focus these workshop experiences at making the learning of technologically-based classroom instruction easier and more appropriate to the teacher's instructional preference and

student/learner's individual learning style.

One aspect of learning involves verbal learning and focuses on the issues related to cognitive or non-cognitive processes. The paradigm attends to the question, does the learner have difficulty in learning caused by physical learning processes? Physical barriers in this instance is related to inefficiency in forming S-R bonds, poor coding/encoding, storage and retrieval methods. Does the learner assimilate new material more related to noncognitive factors like personality traits or states directly related to the learning situation? This relates to the heightened cautiousness or anxiety felt by teachers and students when they feel not in control of the teaching or learning but in the hands of machines and devices. Some individuals take to the machines and devices immediately; others are more cautious and may or may not adapt (North Central Association, 1994; Hultsch & Deutsch, 1981). Some researchers found that poorer performance was simply a result of an insufficient amount of time allowed to make a proper response to the computer stimuli rather than a learning disability or anxiety. This time-for-absorption factor seems to be a major resident factor in the typical technology workshop.

This workshop paradigm suggests a dramatic shift away from the usual "sit and git" in-service experience: Traditionally the teacher sits in the workshop, gets the latest practice, and returns to the classroom as an "expert" (Hass & Parkay, 1993; White, 1995, p. 16). If we were to follow the usual pedagogical principles a content plan would be the curriculum planning emphasis. With a content plan, the organizers would concern themselves with only four questions: What content needs to be covered? How can the content be organized into manageable units? What would be the most logical sequence in which to present the content, and what would be the most efficient means of transmitting this content? (Knowles, 1981). In sharp contrast is the paradigm

this paper suggests which represents a process design based on andragogical assumptions. Andragogy allows the learner to actively participate in the decisions of what is to be learned based on personal, social, and professional needs as related to the specific learning experience. The learner is at all times engaged in the learning and has a lot of control over pace and direction within the framework of the learning activity's goals.

Technology Triage.

The essence of this technology staff development involves performing an individual technology-learner readiness triage to find out what level and type of development is needed. The triage method is used to classify the participant based on individualized technology capabilities. The triage method saves time, money, and enhances individual engagement and participation while avoiding topics that are repetitious and boring. The presentation structure of this staff development approach has three flexible and dynamic levels, each meeting technology learning needs in an orderly and progressive manner. These levels are, technology assistant, technology teacher, and technology leader.

Not only does the triage approach benefit the individual learner, but it also efficiently addresses the needs of the school district. Coupled with an individual development plan the ultimate outcome of implementation is a very effective application of meager funds directed to the schools' technology plan. The learning elements of each level include any manner or type of training within the broad boundaries suggested herein. Outside consultants would be used only in the start-up phases. With each succeeding workshop schools become more self-capable and self-reliant.

Technology Assistant

This level of training focuses more on developing basic abilities regarding technology. Here, computer nomenclature, logical and physical aspects are learned. Individuals just get comfortable with the basics of their computers.

Technology Teacher

This level builds upon the first and shows teachers software, hardware, program capabilities as they apply to their discipline and intrinsic needs. It is here the Internet and related computer capability is introduced and learned. Much of the learning is a dyad, cooperative learning or small collaborative teams. Sharing and practice imprints processes and procedures faster than teacher-talk.

Technology Leader:

Technology leader teachers and school administrators are shown how to best use the skills and knowledge they have developed in previous workshops. Within each school there is always one who is more technologically accomplished than the rest. It is this person who would enter at this level. Learner-participants will be discussing how to integrate technology, software, and hardware into their curriculum. The technology leaders will encourage development of a greater pool of technology teachers showing them how technology can permanently change how they teach in the classroom. The technology leader creates local capacity by being the local trainer for technology assistant and technology teacher workshops.

Conclusions and Recommendations

The triage discussed in this paper allows maximum flexibility to address myriad technology needs, while at the same time using existing process, i.e., staff development, workshops, courses

for credit, and peer coaching. The key to successful implementation is the engagement of the teachers, administrators and eventually the students. The triage method provides an environment of involvement at the building level. Local internal support removes much of the initial fear and trepidation commonly associated with taking control of technology. School faculty must take responsibility for controlling technology, rather than being controlled by technology.

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