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EDITORIAL

The rapid growth in technologically-mediated instruction in higher education and corporate training, along with an increase in the number of adult learners accessing this education, creates many challenges for technologists; they may find it valuable to compliment their skills in instructional technology with a broader understanding of the 'adult as a learner'. The article in this issue of DEOSNEWS presents the personal reflections of one technologist whose career path led to further study in the field of adult and distance education. She discusses the importance of this study as it relates to her present work in the university.

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I KNOW MY INSTRUCTIONAL TECHNOLOGIES:

IT'S THESE LEARNERS THAT PERPLEX ME!

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INTRODUCTION

A colleague wrote to me for some advice, so I sat down at my computer to give my response some serious thought. This was not the first time I had heard the questions he asked, and his quandary seemed to be representative of that of many erstwhile "techies" who have been caught up in the technological revolution that is transforming the landscape of higher education. My colleague has a degree in computer science and would like to continue his career in higher education or perhaps move into corporate training at a distance. His question, "What would be the most profitable course of study for me to follow, based on what you have found most practical and useful in 'real life'"?

My own educational background is in instructional systems design, distance and adult education. I share responsibility for assisting faculty who are teaching in the classroom using a range of instructional delivery technologies and train both faculty and students in their selection and use. In writing this essay I have thought back to some of my reasons for pursuing a somewhat unusual educational path. I have also drawn on my own experience base of what I have found of most use in my daily work (Brookfield 1986; Westmeyer 1998).

Those who want to become corporate trainers, faculty, or student development personnel and who have a technological background will, most likely, be working with adults in settings that integrate technology into learning and workplace environments. This might require training others in specific computer applications, in using various communications technologies, or using technologies for distance education; it may involve faculty development or working directly with learners. The "technical" training is not the problem, but teaching and learning using instructional technology goes

far beyond the technological aspects. Where does one learn how to work effectively with the teacher and the learner?

It came as a surprise to me to discover that graduate study in some aspects of adult education has been excellent preparation for much of the work I do in my present position. I have heard of degree programs that incorporate study in distance education, educational technology, and instructional systems design promoted for professional development -- but never adult education.

The use of educational technologies, especially the use of computers and computer-based education and training, is not, on its own, adequate preparation to work with adult learners in the classroom and the workplace or with the faculty and trainers who teach those adults. Nor is it sufficient preparation when the task at hand is to assist instructors in developing whole courses, to provide input into technology acquisition decisions that impact the institution, or to negotiate among stakeholders at the upper administration levels of higher education or corporate environments on behalf of adults learning at a distance. What then are the advantages of choosing graduate study in adult education? Hayes (1990) says it succinctly, in reference to distance educators who use technologically-mediated instructional delivery in some form to reach learners at a distance:

The literature on adult education can provide distance educators with a better understanding of the programs with which they may work, the characteristics of their adult students, and desirable educational practices for these learners. A broad perspective can give distance educators greater insight into influences on their own practice, suggest new avenues for research and program design, and open the doors to increased communication and cooperation with professionals involved in other aspects of adult education. (p. 25)

Foundational studies in adult education can often provide a structured opportunity in which the literature and research in the field can be studied and discussed, and related practices can be explored. Areas in which study would be particularly advantageous are 1) an introduction to adult education, its venues, and history, 2) teaching adults, which might include adult learning theory, and 3) program planning and providers of education.

INTRODUCTION TO ADULT EDUCATION

There are a number of excellent sources that document the extent of the field of adult education (see, for example, Houle 1991; Merriam and Cunningham 1989; Peters, Jarvis and Associates 1991; Titmus 1989). Most introductory courses survey the history of adult education, address the notion that learning is lifelong, examine adult learning theory and practice, introduce the concept of "adults as learners," delineate the many and varied venues where adult learning programs occur, and examine diversity issues and differential access to resources.

Exposure to the history and dimensions of the field of adult education can elicit a powerful realization there is already an existing literature and body of research that can be searched out and applied to new learning situations engendered by the use of technologically-mediated instructional delivery (Chickering and Ehrmann 1996; Collis and Davies 1995; Ehrmann, 1995).

Introductory courses in adult education often show American adult education as a diverse patchwork of programs and providers, educational purposes, and philosophies (Hayes 1990). It is perforce an

interdisciplinary field, and "adult education knowledge is a unique combination of elements of knowledge from the varying backgrounds and concerns of the different thinkers, whose work has contributed to the body of knowledge" (Jarvis 1987, 301). It is important for technologists working in higher education or corporate training situations to be comfortable seeking and filtering knowledge from multiple disciplines and to realize that no one discipline has all the answers related to the diversity of adult learners.

Introductory adult education courses often highlight issues beyond the individual learner, such as "The techniques of successful teaching, the challenges of administration, the development of policy and the problems and potentials of accelerating exchanges between different cultures" (Moore and Kearsley 1996, 2). Other issues include dealing with funding agencies and various stakeholders encountered in any program planning process (Posavac and Carey 1989; Zinn 1990). Examining these issues can lead to the beginnings of a consideration of the impact of philosophical orientation on the way in which programmatic and educational decisions are made (Zinn 1990), as well as a discovery of what the philosophical orientations of stakeholders might be. A purely technological background does not prepare one to address these personal and institutional issues.

Foundational courses often describe the history of adult education at the University level, noting its origins in departments of Extension and Continuing Education. Technologically-mediated teaching of adults often begins and is fostered in departments of Extension and Continuing Education. Such departments may be successful because they can quickly shift program emphasis to new and emerging concerns of adult clientele (Forest 1989, 341). Visiting these departments and gaining an understanding of their personnel and activities can provide prospective adult educators with knowledge of potential resources and allies within a University community. These departments may have been offering innovative, non-traditional programs at non-traditional times to non-traditional student groups for many years (Apps 1989, 281). They may have the procedures and processes in place to accommodate innovative, technologically-mediated, learning-at-a-distance programs from which to draw ideas for designing and developing effective adult learning environments in the future. Even in university communities not all wheels need reinventing when collaborative alliances can leverage existing systems.

TEACHING ADULTS

Adult Learners

Adult learning is a activity that is constant across many settings, and "is the 'glue' holding together a field that is diverse in content, clientele, and delivery systems" (Merriam 1993; Hayes 1990). Adult learners have been described as "autonomous, experience-laden, goal-seeking, 'now' oriented problem-centered individuals" (Newton 1977, 361-363). This increasingly describes "traditional" university students, as the mean age continues to rise.

Knowles (1980), an influential proponent of andragogy, which he defined as "the art and science of helping adults learn" made the following seminal assumptions about adult learners which, in a large part, still guide thinking in the field today:

As persons matures, (1) their self-concept moves from one of being a dependent personality toward one of being a self-directing human being, (2) they accumulate a growing reservoir of experience that

becomes an increasingly valuable resource for learning, (3) their readiness to learn becomes oriented increasingly to the developmental tasks of their social roles, and (4) their time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly their orientation toward learning shifts from one of subject centeredness to one of problem centeredness (p. 39).

While agreeing in general with the postulate of self-directedness, Westmeyer (1988, 33) notes that when adults find themselves in classroom-like learning situations, where much formal, post-secondary learning and corporate training takes place, "they are likely to regress to their remembered school days and passively expect to be taught." He states that "one of the tasks of adult educators is to help the learner to become self-sufficient." Adults faced with computers or other instructional technologies can reasonably be expected to react across a broad spectrum from immediate and enthusiastic adoption to disabling fear. Handing them a job aid and showing them how the power switch works may be a technically sufficient solution, but cannot give the assistance and encouragement that an understanding trainer or peer can provide.

Collis (1996, 156) describes learning in workplace contexts as "memo-style," as learners squeeze learning/training opportunities, trips to the library, conversation with colleagues, reading professional literature, and attending conferences into very short blocks of time. These learners are highly sensitive to time and cost factors when learning at their workplace. They tend to seek reliable information that has gone through some level of editorial control and tend to learn as much from their peers and mentors as from formal learning events. Adult learners can function well in groups where their peers can serve as "trusted filters, able to supply information relevant to complex situations" (Illich 1971, 158). These groups form a "knowledge web" -- a synergistic, social-collective mechanism for acquiring and deepening one's knowledge and professionalism" (Illich 1971, 159). Such learners will look for just-in-time learning that can be immediately translated into movement towards personal or work-oriented goals: the completion of degrees or certificate programs, an increase in productivity, the acquisition of immediately applicable skills.

If the use of educational technologies can be shown as productive in the rapid attainment of those goals, an adult learner has an added incentive to weather the frustration inherent in the learning curve. The study of adult learning can sensitize a technologist to the issues many non-technologically oriented adults face.

Teaching Adults

Bugelski (1971) suggests that teaching is just a myth and that there is no such operation as teaching, in and of itself. The best that can be done is to arrange conditions in which learning can occur. Among such conditions are 'showing and telling'. However, whether or not learning goes on depends more on the learner than on the teacher (Newcomb et. al. 1986, 21). Those who do arrange such conditions for learning most often consider themselves 'teachers', each with his or her own philosophy and definition of what makes an effective teacher. This in turn influences how educators plan, conduct, and evaluate educational activities (Heimlich and Norland 1994; Zinn 1990, 39).

Technologists who become adult educators need to carefully consider their own philosophical orientation, as many educators teach as they have been taught and as their unexamined personal

philosophy dictates (Beaudoin 1990; Collins 1998). Adult educators, acting in the role of a change agent, often face the dilemma of conflicting values and are troubled by discrepancies between what they believe and what they can do (Zinn 1990, 43). These conflicts can sometimes be resolved by the discovery and clear articulation of their own personal philosophy. This may help explain feelings of internal conflict when a technologist trained in a "truth/task orientation" must consider the needs of learners from a "process/love orientation" (Warren 1971).

Teaching style may be defined as "the operational behavior of the teacher's educational philosophy," a paradigm/approach, an orientation or guide (Zinn 1990, 55), a personal vision, and a critical rationale (Brookfield 1986). Conti (1990, 80) uses the term to refer to "the distinct qualities displayed by a teacher that are persistent from situation to situation regardless of the content." Technologists are frequently trained in the use of software and equipment that require specific processes be consistently followed to produce predictable results. The acquisition of competencies in such processes requires specific changes in behavior that can be defined in overt and measurable terms in behavioral objectives (Conti 1990, 81). This lends itself to a teacher-centered approach that emphasizes "one right way" of performing such operations.

Courses in adult learning and teaching can help technologists become what Knowles (1986) calls "a facilitator of adult learning," and a creator of "communities of learners" (Rogers 1967, 105) rather than didactic dispensers of their own technical content expertise. Brookfield's discussion of "principles of effective practice" could be a good starting point for gaining insight into this approach. According to Brookfield, (1986, 9-11) effective facilitators need to know about, and react to, the nature of voluntary learning, create a climate of mutual respect, operate within a collaborative mode, foster a spirit of critical reflection that helps learners question cultural constructs, and, through praxis, nurture adults towards self-directedness and empowerment.

Technologists tend to be enamored by all the "bells and whistles" of technologically-mediated learning systems. In their hands, all too often, "technology assumes a causality of its own, supplanting the teacher and resulting in technology-bound activity that is debilitating to both teaching and learning" (Beaudoin 1990, 22). Drawing on an understanding of adults as "just-in-time" learners, technologists may realize that most learners may not want or need to learn all the features and capabilities of an instructional technology or a mediated delivery system. Starting with a subset featuring basic functions that learners can immediately use and/or incorporate into existing practice fills the adult learners' desire for just-in-time learning while allowing them to become comfortable and sufficiently confident to go on to discover the full range of system capabilities (Derycke and D'Halluin 1995).

Most adults experienced their early learning in classrooms with desks in rows and the teacher firmly in charge -- an arrangement that is of questionable value for children and may not be an effective learning environment for adults. Designing more effective environments requires familiarity with the body of literature that discusses the design of appropriate learning environments for adults, taking into account the ways in which adults are physically, socially, and psychologically different from children (Collis and Davies 1995; Hiemstra 1991; Hiemstra and Sisco 1990).

Collaborative learning significantly contributes to an individual's construction of knowledge (Jonassen et al. 1995). The advantages of collaborative learning for adults can be seen from two different

viewpoints: on a political level it can favor democracy and a feeling of solidarity among a group of peer learners; on an individual level it allows learners to exercise their autonomy in organizing their learning experiences, while allowing them to cooperate, share, and exchange knowledge with their peers (Derycke and D'Halluin 1995). Such learning can be facilitated by the use of discussion (Brookfield 1990) in computer-mediated, audio, and videoconferencing environments. However, the prospective learning facilitator must themselves learn how to facilitate and moderate learning in groups in both face-to-face and virtual learning environments.

Prospective adult educators are likely to have the opportunity, not only to learn the best teaching methods to use with adult learners, but how to critically reflect on, clarify, and critique the values and assumptions that underlie their own teaching methods (Brookfield 1995). One important area of preparation involves learning to make technology subservient to the learning activities for which it is used (Beaudoin 1990). Media choices must be made carefully to ensure that adult learners are not at a disadvantage, even in choices as seemingly inconsequential as the type size used by a web-browser when displayed on television screen, or on the screen at the front of a classroom.

Adult Education theory has profoundly practical uses for the insights it offers into how adults are likely to behave in new learning situations, their levels of competitiveness and reflection, the tension between self-directedness and a desire to be passively exposed to others' expertise, their progress from simplistic, stereotypical thinking to greater awareness of multiple perspectives, their conceptual complexity, and their increasing tolerance of ambiguity (Hayes 1990, 28-29; Mezirow 1990; Westmeyer 1988).

Theory also addresses adult developmental tasks and transitions based on life cycle phase theory (Cross 1981, 173-179), and has yielded insight into adults' motivation for learning (Hayes 1990, 28). Adult learners, be they students or faculty, will come to their learning situations with highly diverse life experiences. Brookfield (1986) emphasizes that life experience and prior educational experience have the greatest potential influence on adult learning. This knowledge will help the technologist planning training to organize new information in relation to the learner's prior knowledge and to allow sufficient time for the integration of new and existing concepts (Hayes 1990, 30).

Additionally, the study of critical theory in Adult Education emphasizes diversity in students' abilities, backgrounds, and needs. It develops sensitivity to the needs of client groups who may not be well served -- those whose voices may not be heard in the planning or delivery of courses. Such an emphasis in career preparation for technologists will serve well in multi-cultural settings, as universities continue to expand their international offerings.

PROGRAM PLANNING

Program planning is likely to be a practical and basic concern for technologists involved in expanding their institutions' use of technology in teaching and learning (Long 1991). They are likely to be involved in planning programs for adult learners at a number of different levels, and they should be aware that faculty groups need to be involved in planning their own professional development as well as involved in presentations and workshops (Darkenwald and Merriam 1982).

There are many different models for program planning (for example, see Caffarella 1994; Dirkx and Prenger 1997; Knowles 1980; Rothwell and Cookson 1997; Sork 1991; Sork and Caffarella 1989) that

can be systematically adapted and used to structure adult learning in specific settings (Hough 1984). These program planning models can be used to develop learning environments ranging from small group interactions to entire programs, and they detail the various levels of responsibility involved in program management and direction.

Caffarella (1994, pp. 8-10) lists five major reasons why program planning models are useful for prospective adult educators:

1. Resources (people, time, money) can be used more effectively.
2. Daily work is made easier because most models provide a continuing guide for action.
3. Teamwork is fostered when a model clarifies roles and responsibilities of all involved.
4. A basis for control over the extent of the program and the various levels of accountability and responsibility is provided.
5. Better programs are developed when essential tasks and sequences of tasks are specified along with a timeline for completion.

These are all good reasons why educators should know about plans that exist and how they can be adapted to specific institutional situations.

Cervero and Wilson (1994, 1996) have developed a model that could be valuable for those who plan programs in higher education and corporate settings. They define planning as "a social activity in which educators negotiate personal and organizational interests to construct educational programs for adults" with four central concepts "power, interests, negotiation and responsibility" (p. 1). They note that "without political savvy and an ethical vision, without knowing who counts and why, without a sense of 'how to' and a vision of 'what for,' even faithful following of the prescribed planning process will have little consequence" (p. 5-6). This became very apparent to me when planning and presenting recent web conferences -- more of my time was spent in negotiation with all the stakeholders and resource holders than on actually planning the activities of the conference.

Two facets of program planning that will be invaluable are 1) needs assessment (Queeney 1995) as a primary step in the planning process and 2) program evaluation. Needs assessment activities can first determine if an instructional need, as opposed to an organizational problem, actually exists. Models like Rothwell and Cookson's (1997, 135-140) ten-step needs analysis model, including suggestions of information collection methods, can provide a technologist with a valuable tool to help ensure that their programs are developed to meet identified learner needs and that there are sufficient resources and interest for the program to assure some measure of success.

Grant funds for adult education programs are increasingly difficult to find, and funders expect to see a plan for accountability. How can it be shown that the appropriate adult learner needs have been identified and can be met in ways that enhance learning, retention and/or improved job performance unless the process and outcomes are evaluated (Steele 1989)? Evaluation can also lead to improvements in the program planning process itself: in the content and presentation of the program. It can justify increasing the size of programs, defend against cutbacks, and can place continuing

emphasis on worthwhile program goals. Evaluation can help identify learning opportunities and serve as the foundation for promotion, marketing, and public relations about the program (Boyle 1981).

Study in adult education research and program planning can provide program planning models that can be adapted to specific institutional situations as well as the tools and techniques needed to conduct assessment and evaluation of both student learning and program effectiveness.

CONCLUSION

Knowles (1986, 4) was prophetic when he said, "By the end of this century most educational services will be delivered electronically by teleconferencing, cable and satellite television, computer networks and other means yet to be discovered -- provided educators learn how to use the media in congruence with principles of adult learning." Starting with a strong base in instructional technology and pairing that with knowledge and skill in adult education provides an excellent foundation for those who want to pursue a career at the forefront of the technological revolution in higher education and corporate training.

Note: The author is conducting dissertation research into student use of Northern Arizona University's Virtual Conference Center. Personal web page: <http://star.ucc.nau.edu/~mauri/mauri.html>

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