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## The lifelong learner and technology

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## The lifelong learner and technology

### Abstract

The teaching strategies of the educator alter to suit the needs of the students and technology. The content integration process takes time. It has been stated that teachers' first technology projects generate excitement, but often little content learning. Often it takes a few years until teachers can use technology effectively in core subject areas.

Teachers learn to use computer technologies and learn how to bring content learning to the forefront with, in some cases, impressive results on the part of the students. Teachers eventually learn to view the learning process in concert with their new technologies and come to understand the ways content interactions can be approached.

The Lifelong Learner and Technology

A Graduate Paper  
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Division of Educational Technology  
Department of Curriculum and Instruction  
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Dia L. Davis  
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There is a common focus shared by philosophers of education, such as Dewey (1966) and Adler (1982), from the early part of this century to the present, which has been a driving force over time to create a learning society. At the heart of such a society is the commitment to a set of values and to a system of education that affords all members an opportunity to stretch their minds to full capacity, from early childhood through adulthood" (National Commission on Excellence in Education, 1983, p.13).

Dewey (1966) stated that the development of the learning society should be evident in the environment. He further concluded, the very process of living together educates (p.6). This concept places the school on an equal status with other institutions such as the family and the church in our society. It does not, however, diminish the importance of the school. This concept emphasizes the importance of the school ensuring that the individual has the skills and the attitude to pursue a path of continual growth throughout a lifetime (Wain 1987).

Because our education system has not been successful in creating this learning society, it has come under increasing attack. The pinnacle of the attack surfaced in the early 1980's with two publications: The Paideia

Proposal and A Nation at Risk. This criticism focused upon the entire system of education rather than on one particular component of the system (Goodlad, 1984 a).

Dewey (1966) believed that our education system is the driving force toward achieving a true democracy. He believed that all children have the right to become educated, and that they are entitled to the best opportunities to achieve that goal. Adler (1982) concluded that we are only about halfway to achieving Dewey's goal. Our youth do indeed have the opportunity for twelve years of schooling. However, we are falling short of the ultimate goal. That is, providing the means for all children to become lifelong learners.

If public education is examined in the context of the development of a learning society, it becomes increasingly evident that our school must be a critical component for laying the foundation on which this society is developed. Adler (1982) stated:

Education is a lifelong process of which schooling is only a small but necessary part. The ultimate goal of the educational process is to help human beings become educated persons. Schooling is the preparatory stage; it forms the habit of learning and provides the means for continuing to learn after all schooling is completed (p.10).

Over the course of the past hundred years, our society has undergone changes from an agrarian society to an industrial based society. If we reflect upon the changes our schools have made over this course of time, we find that the focus has been on preparing our students to enter the work force. Philosophers concur that this approach does not educate, it merely develops skill (Adler, 1982, Dewey, 1966).

How to meet the needs a changing society and create a lifelong learner has placed a great challenge before educators. Dewey's (1966) belief that the key to a true democracy lies in the society's ability to produce educated citizens truly comes to light in terms of the issues facing education today compared to even thirty years ago.

The problem is that our current system of education is not achieving the goal of creating a learning society. The purpose of this goal is to assure that our citizens are able to take responsibility in a democratic society and be able to adapt to change. The significance of the problem lies with the teacher, the prime influences on the students as they move through the school systems. Several factors must be considered as the teacher is viewed within the context of changing a system:

1. New skills are necessary to prepare a child for the twenty-first century.
2. The teacher's involvement in the operation of a school does not guarantee that there will be relevant change.
3. Certain characteristics of teachers may affect the changes, which are important to producing a learning society. (Apps, 1992)

The first factor noted is that we must update our focus toward the tools to develop skills that are relevant to students today and will be relevant in the near future.

One issue alone, the influence of technology has yet to be dealt with effectively as a major part of learning. Technology is available as a learning tool and as a means to access information in many forms such as CD-ROMS, on-line resources and interactive software. Additionally, the rediscovery of the use of audiotapes as learning tools has presented new possibilities for instruction (Apps, 1992).

Technology is available in our schools to varying degrees. However, until teachers have an understanding of how to use it effectively as an instructional tool, teachers and administrators will not be able to present a strong case for the expenditures necessary to get enough



technology into the classrooms. The second factor to be considered is the direct involvement of teachers in decision making. This factor is worth consideration as it relates to school reform.

Many of the reform movements in the last ten years have revolved around shared decision making. The focus on collaboration appeared to be a way to produce reform. There is no substantive evidence linking school reform through shared decision making to change in the area of instruction (Hallinger, Murphy, & Houseman, 1991).

A report by Easton (1991) on the result of the Chicago Reform Act of 1989 produced a strong statement by teachers who had been forced into a site-based management model. This act required each of the 540 schools in Chicago to establish local school councils, which would develop School Improvements Plans (SIP) to drive school reform. One result of this report was that the majority of elementary teachers said, their instructional practices had not changed as a result of school reform and will not change as a result of the school improvement plan (p.41).

If the call by the public as well as educational philosophers has not produced the desired outcome for reform in the public schools, and the opportunity for a voice in governance is not producing the changes

necessary to produce a learning society, perhaps the major factor to produce this change lies within the teachers themselves.

The third factor, which is significant to the problem, is the characteristics of teachers who will produce the systemic changes necessary to produce a learning society. Adler (1982) describes the need for teachers as learners in the following manner:

teachers should be on the way to becoming educated people. What signs indicated that they are tending is in this direction? One is that they manifest competence as learners. Another is that they show a sufficiently strong interest in their own education and sufficiently strong motivation to carry on learning while engaged in teaching. (p. 58-59)

The debate surrounding the definition of teaching as a profession still occurs. Darling-Hammond and Goodwin (1993) asserted that teaching is susceptible to many factors which tend to take the focus away from the knowledge-based problem solving approach. These are skills found in other professions. However, if teachers are to be regarded as true professionals, the approach necessary to gain that status could be a key to effecting the change necessary in public schools.

Studies examining the characteristics of effective teachers have been conducted throughout the century. One in particular, sponsored by the American Council on Education and conducted by Ryans, was reported in 1960. This extensive study has been noted further research on effective teachers over the past thirty years.

The studies which examine the characteristics of effective teachers could lay a foundation for the portrait of the teacher needed to effect the desired changes in our schools. Clark and Guest (1995) assert, "We find that personality profiles of rank and file teachers are not similar to those of 'master teachers' those who have been recognized by their peers and supervisors as having outstanding teaching ability (p.19).

However, as we examine the characteristics of effective teachers, we must consider that these teachers have been effective over the years in traditional settings. The characteristics of teachers needed to effect and sustain the fundamental changes necessary to prepare students for life in the twenty-first century may be somewhat different from those currently recognized as effective. Fullen (1993a) cautions that teacher education is currently not fulfilling the expectation that teachers will be prepared to take on the challenges to come.

Continuous learning is one factor that is missing. Currently, teacher education from initial preparation throughout the career is not geared toward continuous learning (Fullen, 1993, p. 14).

It is essential that we look at the ultimate goal of our schools to create a learning society and find the means to achieve it. Our teachers must be continually working toward that vision as they proceed through the change process. Fullen (1993a) further states:

The professional teacher, to be effective, must become a career-long learner of more sophisticated technologies and be able to form and reform productive collaborations with colleagues, parents, community agencies, business, and other. The teacher of the future, in other words, must be equally at home in the classroom and in working with others to bring about continuous improvements. (p.17)

Traditional teaching methods are geared to be teacher focused. We still see much of this in our schools today. Educators must stop working harder; they must work better. This is noted by Smith (1995), Typically, they try harder to do more of something that is already being done (although what is being done is probably one of the problems) (p. 585).

The assertion that Smith (1995) makes is evident as we view the current delivery of curriculum. We are still trying to teach content over process. This is just not working. Our children are not willing to learn material that has no relevance for them when they are used to learning things in the context of their function (Brooks & Brooks, 1993). An example is the use of computers. Children use them because they serve a function for them. Many children are writing more fluently because they can use a word processor. Yet we still are worrying when children cannot use neat handwriting in their essays. The biggest mistake we could make in viewing this context is, to do the usual things better. For schools to become very good, the relationship between the mission and the function must be considerably closer than it currently is (Goodlad, 1994b, p. 196-197).

One of the major laments of the teachers today is that they are working harder than ever before, but they are seeing fewer results. In an article Smith (1995) states that we should declare education a disaster and then get on with our lives. We are focusing too much effort on solving problems instead of looking to new and creative ways of educating children (Smith, 1995). Long (1983) suggests that educators should look to the past to discover what may be the most effective for the future.

Prior to the formal institutionalization of schools, people learned in an environment, which was inviting. Long (1983) also states that by creating independent learner, teachers should essentially work themselves out of a job. However, it is essential that our system recruits and nurtures the type of individual who will create an environment conducive to continuous learning (Casey & Tucker, 1994). School is the place where children need to learn the methodology of being effective learners (p. 140).

Clark and Guest (1995) assert that the personality types of teachers currently in service are not conducive to preparing students to face the changes in our society. They found that the personality types for the majority of teachers at all levels were that of stabilizer and catalyst as describe by the Myers-Briggs Personality Inventory. They further contend that the types of personalities needed for the future are the visionary and the troubleshooter. It was emphasized that the structures currently in our schools are unsuited to these personalities.

The challenge to produce a learning society is a continual quest for those responsible for public education. Systemic changes are necessary in education to provide students with the motivation and skills enabling

them to become an integral part of this learning society (Adler 1982, Fullen,1993a). According to my contrasting view, much of what we have discovered about the principles of human learning and development conflicts sharply with the customary practices of schools, as they have grown up around the world (Gardner, 1991, p.143).

The research on restructuring is not producing results to support along these same paths, such as site-based decision making, to effect the systemic changes that are needed. Therefore, a critical examination of the characteristics of teachers within the system may be a key to effecting the change. Teachers are a key factor in this reform, but at present they are faced with such an overwhelming task that many feel that their attempts are futile. Gardner (1991) further contends that:

Teachers feel buffeted about the contradictory messages: Students should learn cooperatively, and yet separate evaluation must be performed on each individual student; children with problems should be 'mainstreamed', yet it is important to track the talented students so that they can gain college admission; teachers are expected to act in a professional manner, and yet their every move is scrutinized by various monitoring bodies. The result

is a virtual logjam in many of our nation's public schools. (p.141)

In schools where students are expected to master routine skills and acquire routine knowledge, the necessary skills and knowledge can be trained to deliver the material in the texts to the students with reasonable efficiency. Much higher-order of skills is required to prepare students for the unexpected, non-routine world they will face in the future. Still a higher-order of skills is required to accomplish the task for the growing body of students whose environment outside the school does not support the kind of intellectual effort we have in mind.

The teachers who will drive change will need to have the skills and attitudes that can accept and embrace change as a constant in their professional lives. A teacher who will be able to accept change is the lifelong learner (Fullen,1993b). If our children are to become lifelong learners, those individuals teaching them should espouse the same fundamental principles. It is the belief of this author that this is the guiding principle which will drive the systemic change necessary to produce a learning society. As we consider all of the forces that impact the educational system, teachers are the prime factor in the equation to produce change. The teachers in



our public schools have come under close scrutiny as they are charged to effect this change. If they must operate under the premise that the change of education is to create a learning society, it would seem logical that the teacher should espouse the same. Adler (1982) emphasized that the teacher who has stopped learning is a deadening influence rather than a help to students being initiated into the ways of learning (p. 59). If the premise is that the teacher is a major influence upon the actuation of the goal of education, then the focus of change must center on the teacher. It causes one to ponder the reality that the infrastructure of education has not significantly changed while everything around us has. Our schools must lay the foundation for a lifetime of learning society, then the focus must be on developing a teacher who can create the attitudes as well as teaching the skills necessary to produce a lifelong learner

Our changing need in the work force as we move from a factory based system to service and technology based systems presents a major challenge for schools. Due to the rapid pace of change, the current inservice and perservice teachers are not prepared for the uncertainty that lies ahead. We do know that the amount of information that is generated on a daily basis is far too much for any person to assimilate. Therefore, it is even

more important that our teachers and students are able to know how to access, analyze and use the information as a need exists. This presents educators with a major paradigm shift from the goal of acquiring information to accessing and using it. Teachers must be prepared throughout their careers for continuous change. They will be required to constantly adapt to the information explosion. The person needed to take on this challenge must be willing to continuously learn new information and acquire new skills. Educators must be people who have the attitude that learning is a part of their life. In other words educators need to be lifelong learners.

In the 1996 State of the Union Address President Clinton stated:

In our schools, every classroom in America must be connected to the information superhighway, with computers and good software, and well-trained teachers. We are working with the telecommunications industry, educators and parents to connect 20 percent of California's classrooms this spring, and every classroom and every library in the entire United States by the year 2000. I ask Congress to support this educational technology initiative so that we can make sure this national partnership succeeds. [on-line]

This proposal helped give the necessary push in the direction of the technology movement within the school systems. In addition, Clinton proposed the Four Pillar Challenges:

1. Modern computers and learning devices will be accessible to every student.
2. Classrooms will be connected to one another and to the outside world.
3. Educational software will be an integral part of the curriculum -- and as engaging as the best video game.
4. Teachers will be ready to use and teach with technology. [on-line]

All of the challenges of the pillars are in the best interest of the student. Therefore, when thinking of the best interest of the student, teachers/educators need to make the effort of the lifelong learner. The first step in the development of the lifelong learner is the education and re-education of teachers and administrators in technology applications in learning. For the students of the future to continue the journey of lifelong learners their teachers of today need to be informed and educated about current technologies. For that reason the continued learning for teachers and administrator is needed. Staff development is a key factor in learning

about technology and technology integration into the curriculum. The following is eight conditions for successful and effective staff development.

1. The educators closest to the instructional problem should determine or participate in the selection of staff development topics.
2. Thinking about staff development topics should be a continuous process among the community of leadership, faculty, and staff.
3. Empowerment should be about real educational issues important to the community of leadership.
4. Staff development leaders and committees must create a cadre of specialists among the community of leadership who can deliver instruction, help with transfer of learning to the classroom, and become a resource for continuing practice.
5. It is not enough that the participants select the topics for staff development; they must also help plan, implement, and assess the experience.
6. Staff development training should derive from two important sources of assessment: an evaluation of the quality of the school's teaching and learning, and information gathered from the supervision or coaching of the classroom teachers.

7. The staff development program should be viewed as an ongoing, open system that invites adjustment or change through formative assessment.
8. Staff development topics and programs should be individually planned and implemented for specialized segments of the teaching and learning environment (Davidson & Maurer 1998, p. 231-32).

When incorporating these items in the use of staff development in technology this allows educators to have a 'real' feeling about the information that is being learned. Thus, educators can examine the situations that may occur when using technologies within the classroom and school system. This also gives instructors opportunities for feedback and to continue the ongoing exercise in applications and integrations.

To make effective use of educational technology, teachers will have to master a variety of powerful tools, redesign their lesson plans around technology-enhanced resources, solve the logistical problem of how to teach a class full of students with a smaller number of computers, and take on a complex new role in the technologically transformed classroom (President's Committee of Advisors on Science and Technology Panel of Educational Technology, 1997). Furthermore the curricula has to change somewhat.

The teaching strategies of the educator alter to suit the needs of the students and technology. The content integration process takes time. It has been stated that teachers' first technology projects generate excitement, but often little content learning. Often it takes a few years until teachers can use technology effectively in core subject areas. Initially, teachers and students do not expect much content in technology projects and are satisfied if projects are completed and look good (President's Committee of Advisors on Science and Technology Panel of Educational Technology, 1997). Teachers learn to use computer technologies and learn how to bring content learning to the forefront with, in some cases, impressive results on the part of the students. Teachers eventually learn to view the learning process in concert with their new technologies and come to understand the ways content interactions can be approached (President's Committee of Advisors on Science and Technology Panel of Educational Technology, 1997). One strategy for teachers to consider is to plunge in headfirst with their students using computer technologies, hoping they will learn together about technology. Teachers who use this approach tend to have a lot of trust in their students' abilities to solve problems and find their way to the content. Sometimes

this works, but often students and/or content falls through the cracks (1997).

The dilemma of learning both computer technology and content exists and will continue to persist. There will always be new computer technologies to learn and there will always be new ways to approach learning. In fact, the problem is a wonderful paradox because technologies have made it possible for many teachers to see that complex ideas and abstractions-the parts of content learning that seem so difficult for students to accomplish-are actually made more accessible through the use of computer technologies. Teachers are seeing that content can be more than assembling pieces of knowledge to be learned, and that technology can offer representations, visualizations, and interactions that really help students negotiate concepts and abstractions. Concepts of what should be taught and how it can be taught are now in flux, and computer technologies are playing a role in demonstrating how subject area standards can be realistic and attainable for students. Teaching is complicated and computer technologies, like other technologies that came before, create constraints in the learning process but, that is just the small price to pay to become a lifelong learner.

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