ABSTRACT. The introduction of computer technology in the social work profession is requiring a review of what we think we know about how family social work practice is best taught, learned, or even implemented. This article compares the paradigm shifts our profession has already witnessed with those of today as we are confronted with innovations that have the potential to impact how we traditionally teach, practice, and what we value as a profession. With a review of the journey we have already traveled, unnecessary turmoil may be avoided as new technological advances reach the fringe of our professional realm.

KEYWORDS. Family social work, technology, systems, teaching, paradigm shift, learning

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If you want to understand something, try to change it

-Bronfenbrenner, 1979

The introduction of technology-supported instructional environments, high-performance communication networks, multimedia and other computer-based technologies in the social work profession is requiring a review of what we think we know about how social work practice is best taught, learned or even implemented. As we curiously observe the slow but subtle introduction of technology in social work education and in practice, interesting parallels exist with the paradigm shift (de Shazer, 1982; Liddle, 1984) required of today's social work educators and practitioners and the epistemological shifts that occurred when new ways to think about assessment and intervention were being introduced to the profession years ago. This article compares the paradigm shifts we have already witnessed with those we are currently experiencing as we are once again confronted with innovations that have the potential to impact how we traditionally teach and eventually practice what we value and treasure as a profession. Reviewing parallels in paradigm shifts may serve as a clear reminder that successful transitions leading to an enriched profession and professional practice are possible in the face of change. With a review of the journey we have already traveled, perhaps unnecessary turmoil may be avoided as new technological advances reaches the fringe of our professional realm.

EMBARKING ON THE JOURNEY

For many years, the authors have had the fortunate opportunity to be involved in one way or another in the professional development of human service professionals working in a variety of practice settings including Mental Health, Social Services and Education. After receiving training in family systems intervention by some of the early proponents of systemic thinking, a wealth of opportunities became available to share our thinking and newly learned skills with colleagues, many of which were of different clinical orientations and disciplinary persuasions. Systemic ideas were considered "state of the art" information for the human service field at the time. Although systemic intervention was not well accepted in traditional professional circles of the day, there was much curiosity about the subject, which provided a context for interesting exchanges and dialogue. With the advent of these new ideas, a proliferation of systemic training programs emerged throughout North America and Europe.
With numerous experiences in initiating systemic training programs, the issue of "learning" and "change" and the transitional process that ensues for practitioners as they dared to embark on a journey of professional education or re-education, became, for us, an area for examination. The numerous family practitioners and the human service organizations that participated in our systemic-oriented training programs provided the necessary context for our learning about learning and change processes both for family practitioners and their respective work settings. What follows is but one perspective of that journey.

**TRANSITION FROM INDIVIDUAL PSYCHE TO FAMILY SYSTEMS**

In the mid 50's and 60's there was a growing interest in the human service professions in family research. This nourished the introduction of many new ideas about how to view and understand human behavior. With the introduction of systems theory (vonBertalanffy, 1968), theories of communication (Bateson et al., 1956, Watzlawick et al., 1967), and ecological perspectives (Auerswald, 1968, 1972; Bateson, 1972), the development of many new models of intervention for working with the family emerged (MacGregor et al., 1964; Haley, 1976; Minuchin, 1974; Watzlawick et al., 1974; Bowen, 1978; Selvini-Palazzoli et al., 1978; Satir, 1967). New theories for understanding human behavior evolved in conjunction with the development of new models of intervention (Haley, 1963; Hoffman, 1981; Dell, 1980, 1981; Dell & Goolishian, 1981). When systemic ideas were first introduced, the initial transition for many human service practitioners was having to shift one's thinking from "psyche to systems" (Neill & Kniskern, 1982), later referred to by some as a "paradigm shift." This process referred to a practitioner's transition from using one frame of reference to organize perceptions, to using a significantly different viewpoint (dc Shazer, 1982; Liddle, 1984).

During this time, understanding human behavior from a systemic viewpoint was considered revolutionary, challenging, and exhilarating. The human service professions were witnessing a particular excitement in the air. Within the learning context provided by our teachers and mentors of the time, we, as practitioner-trainees, all knew something important was happening. Systemic thinking provided frustrated practitioners with new hope and new intervention paradigms as well as new possibilities for the delivery of human services and programs. Examples of the paradigm shifts required of professionals by the introduction of systemic ideas and principles included some of the following:
The tendency was to explain what is being observed in terms of its parts. Explaining what is observed is best understood in terms of its role in a larger whole or social context.

Much emphasis is placed on diagnosis and analysis of past events before taking action. More emphasis is placed on observing the action as part of the diagnosis.

Action and change considered a consequence of comprehension and insight. Comprehension and insight considered a consequence of action and change.

Intervention focuses on specialization and compartamentalization of resources. Intervention focuses on modifying the interactional context of a system.

Intrapsychic deficiencies considered the primary cause of an individual's problems. A person's difficulty can best be understood and changed within the context where the difficulty is taking place.

Places emphasis on correcting an individual pathology and consequently intervention is rehabilitative. Places emphasis on restructuring the social interactional context that appears to support the presenting problem and consequently intervention requires cooperation of significant others.

Sharing new ideas with colleagues that required they change their basic frame of reference or viewpoint was not always easy. Shifting one's years of preferred patterns of thinking and practice was not done effortlessly and its difficulty was easily underestimated. When initially exposed to systemic thought, human service practitioners trained from more person-centered orientations (Patterson, 1973, Rogers, 1969, Piaget, 1969, Freud, 1958) often reacted vehemently with the following criticisms.

"Systemic intervention is not real "intensive" therapy as it only treats symptoms"
"Change can only occur if a person truly understands what he or she is doing and why" (Self-awareness)
"The helping professional's task is to help the client search for new understanding and insight with regards to the cause of the problem"
"A person's resistance to change is due to a personal oppositional trait or lack of motivation to change"
"Systemically-oriented practitioners appear cold and unfeeling toward their clients"
"The professional helper must be non-directive in clinical interviews"
Initial attempts to respond to colleagues’ dilemmas and concerns mirrored the responses indicated by other systemic thinkers of the time (Haley, 1981). One observation noticed was the way in which ideas were being communicated. If one expressed too much enthusiasm regarding a particular point of view the exchange tended to result in fruitless, arduous, and somewhat strenuous dialogue. By being more attentive to other colleagues’ personal realities while tempering enthusiasm, the quality of the exchanges and dialogues with colleagues greatly improved. What resulted was an atmosphere of curiosity for each other’s ideas while providing an avenue for those who wished not to endorse different thinking to withdraw from the dialogue with grace and dignity. One conclusion drawn from this experience, which was equally supported by the literature, was that transitional processes are largely facilitated by the nature of the interactional context and the quality of the relationships that are ultimately created within a particular group (Dell, 1977, 1986; Schwartz, 1988).

**FROM FAMILY SYSTEMS TO ECOSYSTEMS**

As more and more practitioners continued to pursue their work with families, systemic principles began to be applied to larger social units. This extension of the systemic viewpoint influenced the way practitioners thought about larger systems impacting the family such as schools, workplaces, communities, and social organizations. Enlarging one’s unit of observation to understand families and human behavior required another shift in thinking, that is, an ecological perspective. An ecological perspective (Auerswald, 1968; Manino & Shore, 1984) forced human service practitioners to deal with problems of social living by placing emphasis upon the environmental context in which one performs roles and interacts with institutions, in order to obtain such basic life necessities as food, clothing, medical care, and housing (Freilich, 1967).

With the close conceptual ties of family systems models of intervention and ecological approaches, attempts were made to bridge systems and ecological models in order to develop a more comprehensive, all-inclusive, systems-oriented approach to intervention (Keeney, 1979; Lebow, 1984; Liddle, 1982). These attempts led to the development of eco-systemic models of intervention (Stachowiak & Briggs, 1984; DeShazer, 1982). The conceptual grid of an eco-systemic frame of reference required that professionals think in terms of multiple levels of intervention. This concept meant that practitioners now needed to focus their attention on the context of interaction among individuals, families, and their respective environments. In this paradigm, diagnosis and intervention was based on an interactive description of the problem situation at different levels of the overall ecological context. The
unit of observation was not only the individual or the family but included the "person-in-environment" context.

Although the notion of understanding the person within his/her social context, the "person-in-environment", was not new to the field of social work (Coulton, 1979; Wetzel, 1980; Schriver, 1987; Karls & Wandrei, 1992), ecological and ecosystemic paradigms advanced by some family researchers and practitioners (Auerswald, 1972; Grief, 1986, Aponte, 1975, Keeney, 1979; Lebow, 1984; O'Connor and Lubin, 1984; Stachowiak & Briggs, 1984; DeShazer, 1982), provided a theoretical framework that helped explain many of social work's macro-level interventions found in case management activities, community organization, and advocacy work.

One consequence of thinking ecologically and eco-systemically has been its influence on present-day changes in the Children's Mental Health field. For example, considerable efforts have been made in recent years to develop responsive community-based systems of care that emphasize individualized and culturally competent services developed in close partnerships with families and human service practitioners alike (Coe & Poe, 1993; Stroul & Friedman, 1996). This concept has captured the attention of national experts, advocates, and policy makers. The results led to human service practices that focus on the importance of establishing strong collaborative working relationships with those closest to the child needing service (Skrtic, Sailor, Gee, 1996). In addition to influencing the creation of strong client-professional partnerships, eco-systemic perspectives have contributed to a greater appreciation for the concept of client empowerment (Rappaport, 1984; Wallerstein, 1992). Empowerment strongly suggests the need for a change in the way human needs and concerns are viewed, addressed and operationalized. Not only is empowerment viewed as an important characteristic of a well developed system of care serving the needs of children, empowering families provides parents with the necessary social supports needed as they negotiate the vast network of social systems that often become involved in their children's lives as a result of their emotional and/or behavioral difficulties.

The most dramatic aspect of thinking ecologically has been its impact on the nature of the partnerships that are created between clients and human service practitioners. The major shift is in terms of moving from assuming a role of expert to that of collaborator, thereby creating a less hierarchical relationship structure to more an egalitarian one. As a result, the nature of partnerships that are created between families and human service professionals shifts dramatically. Family practitioners and their clients together assume active roles in defining, exploring, and solving the social challenges that bring them together. All of these movements required major paradigm shifts for human service professionals working with families. Examples included some of the following:
Individual within a family cannot be fully understood without understanding his/her relationship to the family as a system

Individual problems are explained in terms of dysfunctional family systems

A family system cannot be fully understood without fully understanding its relationship to other systems external to it.

Problems are defined as a particular way in which individuals, families and professionals maintain their systemic organization through redundant patterns of change.

An individual's comprehension and insight considered a consequence of action and change

Concerned with understanding the reciprocal relationship of behavior within a family system and its environment as components of a broader ecological system.

Intervention focuses on modifying the interactional context of a (family) system

Important to attend to the systemic organization of both the professional and the client in the context of an intervention. (Keeney, 1984)

Systemic practitioners are helpers to families

Practitioners working with families are increasingly undergoing transformation from being helpers to being enablers.

More emphasis is placed on observing the action (within the family) as part of the diagnosis

Diagnosis and interventions lie at multiple levels of the ecological system, of which both the individual, the family, and its larger social context are component parts (Willems & Stuart, 1980)

Practitioners trained from more person-centered perspectives often reacted with some of the following typical responses:

Reactions Often Heard

- **How do practitioners get paid to work with larger social units? We are paid by the number of interviews we are conducting.**
- "But what happens to our role as "therapists?" We are supposed to be change agents."
- "What do you mean empower the client? "Are we not the professional?"
- "It's impossible to work with multiple systems. My job function does not permit this"
- "There are simply not enough resources to work eco-systemically"
Moving from a systemic to an eco-systemic perspective has also influenced how educators began to view teaching and learning. As training consultants and systemic-oriented educators, our informal discussions with students, trainees' supervisors, and agency managers most often related to how people transitioned from one way of doing things to another. These informal discussions contributed much to our personal awareness of the challenges faced by family practitioners at all levels of an organization. For example, as front-line practitioners began to change their conceptual views, we observed that the organization itself reacted similarly to the way practitioner-trainees did. Not only did individual trainees change by the nature of the peer relationships created within a training group, the organization itself engages in a learning and change process, becoming an important contributor to the overall learning process of those involved in agency-based training programs. Consequently, our training and consultation experiences with various organizations led to conclusions similar to other systemic-oriented educators and consultants. That is, the educational experience of a group of trainees within an organization is itself part of a larger systemic change process (Elizu, 1993). The more involved one becomes in teaching systemic thinking and intervention to practitioners, especially within their practice settings, the more the boundaries between who is "teacher" and who is "learner" become blurred. In this context, the role of "teacher" begins to be viewed differently. We realized that it was not only the content of what was taught that seemed important to practitioners, but also the very opportunity to participate in a context conducive to learning that was considered paramount.

As our ideas about teaching changed, so did our thinking about learning. As other educators were advocating long ago (Knowles, 1977), one came to appreciate that learning comes from multiple sources and was not limited to a few designated experts. The work environment itself was filled with new learning opportunities in which the trainee is relatively in control of learning process. The teacher becomes more of a process designer. As we become more sensitized to ecological variables influencing learning, one's perspective as an educator changes from only emphasizing skill development as desired outcomes to considering the importance of contextual issues contributing to the learning and change process within the organization in which training took place (Ouellette, 1995). An eco-systemic lens provides the educator with a means to better conceptualized and design context-sensitive training events and programs that permit the organizations itself to learn.

A learning organization is an institution that purposefully constructs structures and strategies so as to enhance and maximize organizational learning (Dodgson, 1993). The concept of a learning organization is increasingly becoming popular since organizations want and need to be more adaptable to change and innovation in today's fast-paced society. Learning is a dynamic,
vibrant, interactional phenomenon (Senge, 1990, Argyris & Schon, 1978, 1980). This idea emphasizes the continually changing nature of today’s organizations and of our society. As a result, the focus is gradually shifting among educators from a teaching paradigm that places emphasis on individual intrapsychic learning processes to a learning paradigm that considers the importance of contextual factors as part and parcel of how an organization itself learns (Janov, 1994; Palazzoli, 1986; Senge, 1994).

**TODAY’S PARADIGM SHIFTS AND CHALLENGES**

*From Teaching to Life-Long Learning*

Curiously, the introduction of new information and computer-based technology inculcated in the human service field appears to be received similarly to the way systemic ideas were introduced to the human service field many years ago. For example, we find a similar excitement being expressed. It feels as if something important is about to be happening. The increased use of technology in education appears to have a similar impact on the way to view the importance contextual issues as it did when eco-systemic perspectives were introduced to the profession. As new technologies are increasingly being used as an educational tool to enhance current classroom-based instructions, educators are again being challenged to review accepted norms and practices of teaching and learning. Another paradigm shift appears to be on the horizon.

Information technologies are maturing from performing routine, repetitive work to mimicking some of the most sophisticated human activities (Schoech, 1990). With technology, students are becoming increasingly engaged and in control of their own learning process. The notion of having students actively engaged while learning as opposed to passively listening or reading is emerging with substantial research support (Ellis & Fouts, 1993), and is consistent with the a constructivist view of learning, a paradigm that has received increased attention in a number of different disciplines (Winn, 1991; Bednar et al., 1991). This view holds that learners learn best if they are cognitively active as new information is provided to them. An example of an ideal interactive learning environment includes creating a learning context where learners summarize information in their own words, draw diagrams to describe connection between certain concepts, and state their own conclusions on issues presented (Dalgarno, 1995). Some of today’s “high-tech” social work educators feel that the introduction and use of new technologies in social work education will provide unique, innovative, and exciting new possibilities for teaching and the learning of social work skills and practice.
(Schoech, 1990; Ouellette, 1999; Laurillard, 1993; King, 1993; Roblyer et al., 1997). It's impact, however, may require a reconceptualization of the way we view our role as educators.

From Discipline-Focus Teaching to Transdisciplinary Collaboration

With the increased use of technology, no longer will we be able to conceive our roles as primarily disciplinary experts who instill knowledge by lecturing to attentive, well-behaved, and receptive students in a fixed location at a specified time. Information systems will facilitate learning by supporting the processes of knowledge acquisition, information distribution, and information interpretation. This will require that we redefine today's discipline-focused teaching role. What will need to emerge is a "needs determined" role which reflects the idea that learning comes from numerous sources and that the learner is a contributor to the learning output. From this perspective, learning processes and the environment are not viewed as two distinct and separate entities but are interrelated and mutually beneficial. What becomes important is the creation of effective learning environments and successful partnerships with different professional identities. Similarly to an eco-systemic intervention paradigm, collaborative and creative partnerships are sought, and interdepartmental, intersectorial, interorganizational, and trans-disciplinary relationships are preferred, because learning is not viewed as a linear and cumulative process within the confines of a particular specialty or sub-specialty. Learning is an ongoing interactional process in which all learners are active discoverers and constructors of their own knowledge. Consequently, learning environments and activities are learner-centered and learner-controlled not teacher-centered or teacher-driven. The criteria for success is not based solely on quantitative variables but also on the quality of the learning outcomes achieved.

Our professional boundaries among disciplines will become increasingly blurred due to the ready access of information across disciplines. The ability of family practitioners and educators to work collaboratively with colleagues will greatly be enhanced due to improved communication tools. Rather than depending exclusively on the authority of the teacher, students will be better able to engage in collaborative learning projects (Bruffee, 1993) where collaboration and teamwork will become increasingly the norm. As a consequence, the educator's function will move away from the constraints of teacher and instructor to that of a "learning coach" interacting with a team of learners.

The introduction of technology into the educational arena brings new challenges to the way we conceive teaching and learning. Following are a few examples of the paradigm shift required of today's educators:
Information technology is a passing fad with minimal implications on the development of learning systems. Communications and information technologies are transformational technologies with powerful impacts on society and profound implications for learning and learning systems.

The process of learning is contingent on the quality of the instruction and/or the instructor. Learning is a teacher-driven process. The process of learning is innate and lifelong. Learning is a student-driven process.

People of a young age learn best. People of all ages have a capacity to learn and this capacity is affected by various social, economic and physical conditions and situations.

Learning is an intrapsychic process affected only by learning styles of the individual. Learning is an ongoing interactional process in which all learners are active discoverers and constructors of their own knowledge.

Important to maintain discipline-focused teaching roles. Teaching roles need to move toward functional, needs determined roles that ultimately empower the learner and enhance the learning environment.

Educational institutions exist primarily to provide instruction and technology should serve to enhance that function. As the use of technology increases in education, the boundaries dividing school, work, and community will continue to dissolve and their activities will mutually reinforce one another.

The primary role of the teacher is to teach his/her area of expertise and is the one primarily responsible for the provision of new information. The roles of teachers change from instructors to learning guides, organizers, leaders, resources, program designers, facilitators of learning and serve as models of educated persons.
Educators following an instructional paradigm may tend to react with some of the following typical responses as information technologies are increasingly introduced in the field:

"Learning output is based on available resources and the source of learning new information comes primarily from the teacher or instructor. For this reason, the use of technology should not and cannot ever replace the teacher."

"We cannot teach social work practice skills without face-to-face instruction."

"The quality of teaching and learning is contingent upon class size."

"What do you mean empower the student? The role of the teacher is to teach and the role of the student is to learn."

"How do our departments get credit for team teaching projects across different university settings and across disciplines?"

Consistent with the evolving shift from teaching to learning paradigms now occurring in higher education (Barr & Tagg, 1995), what becomes important from this new perspective is how we develop necessary mechanisms to organize the learning environment in ways that maximize learning outcomes. Tomorrow's educators who lean toward a learning paradigm will not be threatened by the introduction of computer-based technologies. Rather, the integration of new technologies will be viewed as a unique opportunity to create new creative learning environments that will serve to enhance learning outcomes of students.

**CONSEQUENCES OF CHANGE**

The introduction of new ideas, innovative visions and practices has required that we sometimes deviate from well-established norms and conceptual frames, resulting in major shifts in the way we organize our perceptions with respect to what we observe, how we define things, and eventually how we implement practice. The introduction of new ideas solicits different reactions and responses. Some will respond with curiosity, others with suspicion, and many will ignore what is happening. Becoming an innovator most often means that we allow ourselves to momentarily experience the discomforts of change. The social work profession has witnessed a number of successful transitions which resulted from daring to think differently. The following describes but a few:

First, the way we think about human dilemmas has changed. For example, we used to think of a problem child as being "the problem." He or she had a
deficit. He or she must be helped. Today intervention models have moved away from only "illness" and "deficit" models to explain complex social problems. Today's family social workers are more apt to consider each client situation as being unique, that all people have goals, talents, and confidence, and that all environments contain resources, people, and opportunities (Rapp, 1998). We are also realizing that we must treat the family differently. Family practitioners are actively pursuing families as active participants in the decision-making process regarding finding solutions to problems with youth.

Second, the way we think about intervention has changed. Shifting our thinking about change has meant that social work practitioners are increasingly undergoing a transformation from being "helpers" to being "enablers." With this new perspective, delivering human services is not something professionals do to people, rather, it is becoming an activity that is done with people as active partners and collaborators of change. Today, shared responsibility means working in establishing powerful new partnerships with colleagues of different clinical and disciplinary persuasions to ultimately empower those our services intend to serve. As we move away from discipline-expert approaches to service delivery, professional roles have been changing from a role of "expert" to that of "collaborator." For families, their role has been changing from passive recipient of services to primary decision makers concerning which services and professionals enter the privacy of their lives.

Third, the introduction of information technology and advanced communication networks in social work education is compelling new ways to conceive teaching and learning. The social work student can no longer be perceived as a passive recipient of somebody's lecture or audio-visual presentation nor can students be viewed as simple targets to deliver instruction. We are beginning to understand that knowledge already exists in each learner's mind and is shaped by individual experience. This challenges us to design new learning environments that are less content-driven, less hierarchical, and more learner-centered and learner-controlled. We are realizing that learning is a process in which knowledge is constructed, created, and acquired through action. Students learn at different rates and, in different styles, in different situations, and at different times. Therefore, we must continually seek ways to improve the design of our pedagogical strategies to fit new technological mediums available today.

Innovation rather than renovation is what is being called for in the new millennium. Our changing environment is demanding more than simple restructuring of our organizations, redefining our practices as social workers, and redeployment of existing human service resources. It is demanding that we learn to innovate, that we are creative, and that we design new ways to do new things and new ways to do old things. We must do more than simply
train practitioners with a set of practice skills. We must also train innovators. Our current paradigms are continuously being challenged similarly to how systemic theory challenged well-accepted views of years past.

Based on the journey we have already traveled, we can appreciate how difficult the transition to new paradigms can be. Just as in the earlier days when systemic thinking was first introduced to the family practitioners and educators, we can predict that the transitional process will not always be an easy road. What is most exciting about today's challenges and paradigm shifts, is the questions that they evoke and the unlimited possibilities it raises as solutions toward the eventual creation of a true learning society become more and more a possibility. It is not since our early days as young systemic family practitioners that we have witnessed such an enthusiastic and exhilarating an opportunity. In earlier systemic days, we asked the question "How would we do things differently if we dared to think differently about human behavior?"

And we did get answers. Similarly, the introduction of new technologies in family social work practice and education will evoke new challenges to generally accepted views and norms about how we teach, learn, and implement the skills of our profession. Successful transitions are possible within a context of persistent, respectful dialogue, and ongoing exchanges between family practitioners and educators as well as with the families we intend to serve. Together we will eventually find some of the answers to our current dilemmas. If nothing else, it will permit us to question the status quo and seek new avenues for continued professional growth and learning. Let us continue the dialogue.

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