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# CRITICAL THINKING IN HEALTH EDUCATION FOR ADULTS: CONCEPTS AND IMPLICATIONS FOR PRACTICE

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Abstract

Health education can empower people to control their health destinies, and health professionals can be agents of change for promoting health wellness. Incorporating critical thinking strategies may enhance learning outcomes in health education settings where traditional approaches involve knowledge banking and behavior modification. Recent health education literature reveals interest in educational methods that encourage informed decision-making and self-care, promoting trendy ideas such as empowerment and critical thinking—empowerment as a desired end of health education and critical thinking as a means to that end. This paper examines the historic beginnings and contemporary meanings of critical thinking—referencing Dewey, Freire, Mezirow, Schon, and Brookfield—and discusses conceptual opinions and empirical studies regarding the use of critical thinking in health education

# CRITICAL THINKING IN HEALTH EDUCATION FOR ADULTS: CONCEPTS AND IMPLICATION FOR PRACTICE

The intent of this paper is to examine the use of critical and reflective thinking in health education, and consider whether critical thinking strategies are useful for enhancing the educational outcomes of adults in health education settings where traditional educational approaches typically involve behavior modification and knowledge banking. This research investigates the origins of critical thinking in the field of adult education, the contemporary meanings of critical thinking within the context of health education programming for adults, and some practical applications of critical thinking methodology for professional health care practitioners and adult patient-clients who receive health education services. The paper is presented in three sections: (a) discussion of the findings of a literature review of the topic, (b) summary and conclusions of the research findings, and (c) application of the research findings to the practice of health education, specifically nutrition education for adults.

For the purposes of this paper, the terms critical reflection and reflective thinking are considered part of the critical thinking process. More detailed definitions are provided in the body of this report. A comprehensive investigation of the research topic—critical thinking in health education for adults—demands a look at the literature across two disciplines: adult education and health education. It is assumed that each field possesses knowledge that can benefit the other. Critical thinking is a prevalent topic in both past and current literature related to the field of adult education. Recent health education literature (1990 to the present) frequently uses terms such as empowerment and

critical thinking, usually without clear distinction and defmition, nevertheless suggesting that health educators currently have strong interests in learner-focused educational methods that encourage informed decision-making and self-care. The writer of this paper concludes that empowerment is the desired end of health education, and critical thinking is the means to that end.

The literature review examines the historic writings of John Dewey, Eduard Lindeman, and Paulo Freire, and also includes many adult education sources published since 1980 relative to the topic of critical thinking. Research in the literature of health education is limited to the past decade since this period witnessed the field of health care, and consequently health education, undergoing significant change with the evolution of managed health care. Recent health-related educational literature reveals trendy interest in the empowerment of health care professionals through the use of critical thinking as a strategy for reflective practice, considered particularly important for those who often fill health education roles (e.g., nurses, counselors, and rehabilitation specialists). An original intention of this research was to examine the impact of critical thinking on teachers (health education professionals) as well as learners (health care practitioners or patient-clients receiving health education services.) However, the literature offers limited information about the use of critical thinking as a teaching strategy for improving learner reflectivity and learning outcomes. This research considers both issues relevant-indeed, critical thinking in any learning environment is bound to influence both teacher and learners, no matter where it originates. The use of critical thinking to enhance learner outcomes seems to be overlooked or, at least, under studied in the literature-perhaps an area needing further research.

Most of the literature cited in the review was selected through a systematic search using meta-analysis techniques, though a few articles were collected from the writer's files, previously saved due to a long-standing interest in the research topic. Critical and reflective thinking was chosen as a general area of interest for the literature search, with consideration of four specific domains of knowledge to narrow the focus of the study: (a) adult education, (b) health education for adults, (c) teaching practice, and (d) learning outcomes. After an initial library database search to determine if similar or related studies exist, and some careful thought by the writer, the research topic was formulated. A comprehensive search of the research topic was undertaken using the databases available through Penn State's Library Information Access System (LIAS), primarily ERIC, PsychINFO, CINAHL, MEDLINE, Dissertation Abstracts, and Periodical Abstracts. The following is a sampling of the many descriptors used during the database searches: critical thinking, reflective thinking, critical reflection, reflective learning, empowerment, inquiry, cognitive process, problem-solving, decision-making, action learning, transformation, transformative learning, consciousness raising, public health, health education, health intervention, health crisis, health transition, health wellness, teaching methods, behavior change, change strategies, instructional innovation, adult learning, and adult education.

This writer believes that the chosen research methods produced a comprehensive search of the research topic; an exhaustive analysis was neither intended nor possible. Since the content and scope of professional literature changes rapidly, readers are cautioned that any fiiture searches of the same research topic may yield different findings.

## Discussion

This discussion highlights selected literature from the fields of adult education and health education, regarding the historical beginnings of critical thinking and its contemporary meanings within the context of health education programming for adults. It references the writings of Dewey, Freire, Mezirow, Schon, and Brookfield, and includes conceptual opinions of other adult educators and health educators with respect to the value of critical thinking in today's health education. Also, several empirical studies are cited to document the application of critical thinking strategies in health education. Information gleaned from this literature search is discussed under four headings: (a) a challenge for health education, (b) the context of health education, (c) the concept of critical thinking, and (d) past and present approaches in health education. The first part establishes the focus of this discussion, the second and third parts provide definitions of health education for adults and critical thinking, and the fourth part compares traditional health education approaches with alternative methods employing critical thinking strategies.

### A Challenge for Health Education

Less than a decade ago, the Clinton administration called for health care reform with the 1993 Health Security Act, a plan which challenged the nation to achieve three health objectives by the year 200"a) increase the span of health life for Americans, (b) reduce health disparities among Americans, and (c) achieve access to preventative services for all Americans. In a 1993 address to membership (Jorgensen, 1994), the outgoing president of the Society for Public Health Education (SOPHE) responded to the

bold objectives of health care reform by urging her fellow health education professionals to recognize that "health education should, can, and does play a role in each of the goals" (p. 15), and proposing that health education programs in all segments of societymedical care settings, schools, at the work site, and in the community-are needed for health care reform.

In her address to fellow health education professionals, Jorgensen (1994) complains that health education is "unfairly stereotyped as a pedagogical model in which the information flows from the teacher to the recipient" (p. 19). Yet, she notes, health education is historically defined by health educators as "a process with intellectual, psychological, and social dimensions relating to activities which empower people to exercise more control over their personal, community, and environmental health and well-being", and has evolved "to reflect our growing understanding of the social and environmental factors that influence health" (p. 19). Jorgensen's address encourages a liberatory stance for health education as "an indispensable means for every society to assure that its people develop the personal and collective understanding and skills they need to attain healthy lifestyles, healthy public policies, and healthy communities" (p. 19). According to Jorgensen and SOPBE, health education professionals have an opportunity to be the change agents of health care reform.

## The Context of Health Education

As we near the end of this decade, it seems unlikely that our nation can achieve the grand year 2000 objectives set forth by the health care reform movement, but that will have to be the topic of another paper. For now, this writer is intrigued by the historical

definition of health education promulgated by Jorgensen (1994) and other professional health educators-the part of their definition proclaiming that health education is a process relating to activities that empower people to exercise more control over their personal health and well-being. This certainly sounds like a worthy purpose, but health educators might want to ask the following questions: What is empowerment and how can it be accomplished? Why is empowerment an important goal for health education? And, what educational activities can empower people to better health?

Defining Empowerment

First, it is important to consider what is meant by the concept of empowerment. It is a popular term, frequently used in recent health education literature (Anderson, Funnell, Barr, Dedrick, & Davis, 1991; Cowen, 1991; Hawks, 1992; Jorgensen, 1994; Wallerstein, 1993) but few sources offer a definition of empowerment, nor explanations of how to empower people and why it is beneficial. Hawks (1992) examines the meaning of empowerment in nursing education, reviewing various definitions and noting the emergence of three themes: (a) definitions based on sharing of power, (b) definitions meaning to enable or make possible, and (c) empowerment as professionalization. She concludes by defining empowerment "as the interpersonal process of providing resources, tools and environment to develop, build and increase the ability and effectiveness of others to set and reach goals for individual and social ends" (P. 610).
To understand the benefits empowerment, it is helpful to consider the groups of people who often are not empowered. A distinguished psychologist (Cowen, 1991) states, "empowerment's appeal as a concept lies in the fact that it is well aligned with the notion of a just society" (p. 407), and notes the following:

> There are so many disempowered groups in modem society (e.g., ethnic minorities, the homeless, children, the elderly, the physically and emotionally disabled), *and* that there are striking associations between such disempowerment and problems in living .... accordingly, a primary goal of empowerment theorists is to promote policies and conditions that enable people to gain control over their lives, on the assumption that doing so will reduce problems in living and enhance wellness. (p. 407)

Cowen speaks of holistic wellness (psychological, spiritual, and physical) noting, "in the pursuit of wellness, empowerment can be seen as one key link in a complex chain-a promising potential pathway to wellness" (p. 407). But, he cautions, "empowerment without competence, just as competence without empowerment, may limit wellness and, conversely, that the simultaneous presence of both can advance wellness by providing people a greater sense of control over their own destinies" (p. 407). He views education as "a potentially powerful, but not yet well-harnessed, force for advancing wellness" by promoting life competencies (p. 406).

In reality, Americans are not in control of their health destinies. As the baby boomer generation grows older, the United States is becoming a nation largely comprised of older people, and populations in greater need of health education. Merriam and Caffarella (1991) note, "it has been estimated that after the age of seventy somewhere between 75 and 86 percent of the elderly have chronic health problems" (p. 102). One astute adult education graduate student, Freidrich (1993), identifies older adults as "a new group of people who might fall into an oppressed population designation" (paragraph 2). Citing Paulo Freire's philosophy of education, which grew out of creative efforts in adult

literacy for socially oppressed populations in Brazil in the 1960s, Freidrich advocates using similar educational methods to empower and assist older people in facing developmental challenges encountered as they grow older. In a well-known book of essays on education and freedom', Freire (1973/1998) states, "the important thing is to help men (and nations) help themselves, to place them in a consciously critical confrontation with their problems, to make them the agents of their own recuperation .... the resulting development of this power would mean an increased capacity for choice" (p. 16).

Empowerment and Health Wellness

Health education has the potential to intellectually, psychologically, and socially empower people to control their health and well-being, and health education professionals have an opportunity to become agents of change for health care reform by promoting health wellness. The writer of this research paper contends that herein lies a worthy purpose for health education and the real opportunity for health education professionals-to become agents of change for health wellness-perhaps the health care reform suggested by Jorgensen (1994). Health educators should strive to provide health education programs that empower people to reduce their health risks, thus enabling them to increase control over their own health destinies. Some educators look beyond the individual level and advocate for community and health education as a social action to facilitate change and improve overall quality of life (Wallerstein, 1993; Loughlin, 1996). Wallerstein states, "empowerment education involves people in group efforts to identify

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Education for Critical Consciousness by Paulo Friere (1973/1998) contains two essays urging critical consciousness for cultural change: "Education as the Practice of Freedom" and "Extension or Communication." Freire's writings promote the ideas that learners are Subjects-not Objects--of education, and reflective dialogue is the best means for people to acquire knowledge and develop power.

their own problems, and to develop strategies to effect positive changes in their lives and in their communities" (p. 221).

A review of current health education literature suggests that health educators have strong interest in educational methods encouraging informed decision-making and selfcare (Anderson, et al., 1991; Baker, 1996; Brammer, 1992; Cowen, 1991; Hawks, 1992; Jorgensen, 1994; Loughlin, 1996; Lowe & Kerr, 1998; Power, 1997; Scanlan & Chenomas, 1997; Wallerstein, 1993, Wong, Kembler, Chung, & Yan, 1995). The literature frequently uses terms such as empowerment, critical thinking, reflection, reflective thinking, and reflective learning, but often without clear distinction and definitions of these terms. Nevertheless, the field seems to favor Freirian views promoting critical confrontation with problems as an activity that **empowers and liberates** individuals and societies to make positive changes. For the purposes of this paper, it will be assumed that health educators view empowerment as the desired end of health education, and critical thinking as the means to achieve that end.

## The Concept of Critical Thinking

The literature of adult education and health education is overflowing with articles promoting concepts such as empowerment, consciousness raising, critical thinking, critical reflection, reflective thinking, transformative learning, and the like-there is no room in this paper to mention all of the sources and all of the terminology that abounds. As noted previously, this research reveals that health education literature has a tendency to confuse the term empowerment with ideas actually related to the critical thinking process--often using the terms critical thinking, reflection, and empowerment

interchangeably, for instance. A surface look at the literature of adult education produces many articles specifically related to critical thinking, but when one looks deeper, there is noted confusion of terms in that discipline, as well. Erdman (1987) examines the literature of adult education, noting ambiguity in the language and descriptions used to define the critical thinking process. It is easy to get lost in the rhetoric used by the authors and not realize that they are often speaking about the same thing: simply helping learners help themselves (as Freire might say) by using educational methods that help **the** learning happen and enable learners to learn what they need to know.

Foundations of Critical Thinking

In order to reach a clear perspective for this research, it is essential to examine the literature of adult education and learn from the rich research base. Any literature search on the topic of critical thinking inevitably leads to the works of Dewey, Freire, Mezirow, Schon, and Brookfield, historical and contemporary writings that are frequently cited in educational literature promoting concepts such as empowerment and critical thinking. Paulo Freire's (1973/1998) educational philosophy opposes a knowledge banking approach to education, as he states clearly in one of his essays on democratic education, "the role of the educator is not to 'fill' the educatee with 'knowledge,' technical or otherwise .... it is rather an attempt to move towards a new way of thinking in both educator and educatee" (p. 125). Freire effected social change in Brazil using "a form of education [critical dialogue] enabling the people to reflect on themselves, their responsibilities, and their role in the new cultural climate-indeed to reflect on their very *power* of reflection" (p. 16).

It is important to note that Freire (1973/1998) did not originate liberating educational ideas, though he often gets the credit. Many years prior, Eduard Lindeman (1926) and John Dewey (1933/1998) wrote about the educative power of dialogue, the ineffectiveness of knowledge dumping, and the benefits of reflective thinking for educators and learners. Dewey defines reflective thinking as a better way of thinking that can lead to personal change, "the kind of thinking that consists of turning a subject over in the mind and giving it serious consecutive consideration" (p. 3). He argues that reflective thought should be an educational aim because "it emancipates us from merely impulsive and merely routine activity .... enables us to direct our activities with foresight and to plan according to ends-in-view" (p. 17). According to Dewey, reflective thinking is a process that leads to intelligent action.

The writer of this paper respectfully notes that Freire (1973/1998) seemed to borrow the philosophical ideas of Lindeman (1926) and Dewey (1933/1998) and applied their ideas to real-life learning situations-a significant step in the evolution of educational methods (application of the research base). And, the collective insights of Lindeman, Dewey, and Freire very likely influenced the educational paradigms of other contemporary educators---examination of Mezirow's (198 1) perspective transformation theory, Schon's (1983) ideas for reflective practice, and Brookfield's (1985, 1987, 1992, 1995, 1997) explanations of critical thinking, reveal similar underpinnings to early works on critical thinking. Indeed, an interesting topic for another literature review would be a comparison of the contributions made by contemporary educators-such as Freire, Mezirow, Schon, Brookfield, and others-juxtaposed with the educational fi-ameworks provided by historic educators such as Dewey and Lindeman.

Shelton's (1991) doctoral dissertation questions why Dewey's expounded theory of intelligence and curriculum paradigm (reflective thinking) has not been realized. Though not specific to adult education, the dissertation provides an interesting summary of the evolution of critical thinking, favoring Dewey's contributions as the conceptual origin. Shelton laments about the historical "lack of consensus on a definition of critical thinking" (p. 2 1), noting, "many conceptions and definitions are very limited in scope and focus on the philosophical nature of logical thought, and others conceptualize critical thinking in a very narrow, fragmented, skill-oriented fashion" (P. 22).

Ira Shor (1996) acknowledges Dewey as "the patron saint of American education, so honored, invoked, and ignored" (pp. x-xi). He refers to Dewey's (1933/1998) work as the foundational model for thinking and democratic education, and links Freire's methods (dialogic inquiry) to Dewey's theory of thinking, but in the reality of sociocultural context. Shor defines critical thinking "as a holistic, historically situated, politically aware intervention in society to solve a felt need or problem, to get something done in a context of reflective action" (p. 163). His work promotes power-sharing educational methods-power with students instead of power over them-and offers a problem analysis model, described as "a Freirian extension on a Deweyan base" (p. 162). In an anecdotal account of his work as a liberatory educator, Shor (1980) notes the irony of mass education---demanded by so many, yet pleasing so few-and refers to Dewey's and Freire's contributions as rich resources for pedagogical frameworks. Shor and Freire (1987) collaborate for a dialogical examination of the meaning and potential of liberating education, and argue for a focus on knowledge production (new knowledge) as opposed to the knowledge transfer (existing knowledge) so dominant in traditional education.

Apparently, Ennis (1962) is an uncelebrated contributor to the literature on critical thinking, referenced by only two other sources used in this comprehensive research of critical thinking (Fulton, 1989; Shelton, 1991). The writer of this paper believes Ennis' work is important to consider since his viewpoints pre-date Freire's popular writings, therefore seem significant in the evolution of critical thinking concepts. Ennis may be one of the earliest contemporary theorists to discuss critical thinking as the examining of assumptions and the "correct assessing of statements" (p. 83), specifying twelve aspects of critical thinking related to the judgment of statements. He admits one weakness in his critical thinking concept is the intentional exclusion of value judgments, noting that a simpler model makes the concept more manageable. Ennis identifies a need for educators to gain better understanding of critical thinking, and criticizes Dewey's work and the literature of education for lacking depth on the subject. He concludes that psychological research regarding the topic of thinking is limited by poor defimition of the variables needed for scientific study. Later writings (Ennis, 1987; Norris & Ennis, 1989) express more seasoned viewpoints, and define critical thinking as "reasonable and reflective thinking that is focused upon deciding what to believe or do" (p. 3).

Maior Contributions to ContempoLaa Critical Thinking Paradigms

Jack Mezirow's (198 1) well-known theory of perspective transformation credits the work of another contemporary theorist, German philosopher and sociologist Jurgen Habermas, who developed a critical thinking theory in the 1970s. Mezirow explains that Habermas' work on critical learning differentiated three domains in which human interest generates knowledge-the technical, the practical, and the emancipatoryw--which are grounded in three different aspects of social existence: work, interaction, and power.

Mezirow states, "it is curious that the most distinctly adult domain of learning, that involving emancipatory action, is probably least familiar to adult educators" (p. 6), and proposes his theory of perspective transformation as synonymous with emancipatory action. He notes, perspective transformation relies on critical awareness of existing assumptions in order to make meaning from experience, either by sudden insight, or by a series of transitions permitting revised assumptions. Perspective transformation is a "learning process by which adults come to recognize their culturally induced dependency roles and relationships and the reasons for them and take action to overcome them" (pp. 6-7). Mezirow's theory of perspective transformation acknowledges "the central role played by the function of critical reflectivity .... awareness of why we attach the meanings we do to reality, especially to our roles and relationships" (p. 11). The theory of perspective transformation implies the need to examine both learner and educator roles, with the fundamental goal of understanding the meaning of experience as a guide to decisions and action. Mezirow's theory is a popular topic in the literature, but his writings are difficult to read, and not well received by all educators. Clark and Wilson (199 1) criticize Mezirow's theory for "the separation of experience from the context which shapes it and provides its interpretive fi-ame" (p. 90), arguing that the sociocultural, political, and historical contexts in which individuals are situated are the very elements which bring meaning to experience.

Through studies of a variety of professions, Donald Schon (1983) developed a model of professional practice-reflective practice-which recognizes a difference between research-based scientific professional knowledge (technical rationality) and practical professional knowledge (professional artistry) allowing for spontaneous,

intuitive responses to indeterminate situations arising within the context of professional practice. According to Schon, the second kind of knowledge depends on a tacit knowingin-action and a process of reflection-in-action in which people "turn thought back on action and on the knowing which is implicit in action" (p. 50). Schon argues that all professionals (including teachers and health educators) provide services to clients, and encourages a move from traditional professional-client relationships (where clients simply receive services determined by the professional) to reflective professional-client contracts (where clients participate in attaining services).

Schon's (1983) book defines the reflective practitioner, but he cautions that there are benefits and drawbacks of reflective practice for both professionals and clients, noting, "just as the reflective contract demands different kinds of competencies and permits different sources of satisfaction for the practitioner, so it does for the client" (p. 300). Schon discusses the implications his model may have for professionals and society, and presents two tables highlighting differences in competencies and satisfactions for expert and reflective practitioners, and for clients experiencing traditional and reflective contracts (see Tables I and 2).

The content of the two tables provides valuable insights about Schon's (1983) model of reflective practice. Table I contains statements made from the practitioner's perspective, suggesting that reflective practice permits the professional to move from playing the role of knowledge expert to participating in the discovery of knowledge. Table 2 contains client statements that suggest reflective learning contracts allow the client to move from the comfort and danger of being a passive receiver of knowledge to being an active participant in a process of inquiry.

Table I

Practitioner Differences in Sources of Satisfaction and Demands for Competence

| Expert | Reflective Practitioner |
|---|---|
| I am presumed to know, and must claim to do so, regardless of my own uncertainty. | I am presumed to know, but I am not the only one in the situation to have relevant and important knowledge. My uncertainties may be a source of learning for me and for them. |
| Keep my distance from the client, and hold onto the expert's role. Give the client a sense of my expertise, but convey a feeling of warmth and sympathy as a "sweetener." | Seek out connections to the client's thoughts and feelings. Allow his respect for my knowledge to emerge from his discovery of it in the situation. |
| Look for deference and status in the client's response to my professional persona. | Look for the sense of freedom and of real connection to the client, as a consequence of no longer needing to maintain a professional facade. |

Note. From The reflective practitioner: How professionals think in action (p. 300), by D. A. Schon, 1983, New York: Basic Books.

Table 2
Client Differences in Sources of Satisfaction and Demands for Competence

| Traditional Contract | Reflective Contract |
|---|---|
| I put myself into the professional's hands and, in doing this, I gain a sense of security based on faith. | I join with the professional in making sense of my case, and in doing this I gain a sense of increased involvement and action. |
| I have the comfort of being in good hands. I need only comply with his advice and all will be well. | I can exercise some control over the situation. I am not wholly dependent on him; he is also dependent on information and action that only I can undertake. |
| I am pleased to be served by the best person available. | I am pleased to be able to test my judgements about his competence. I enjoy the excitement of discovery about his knowledge, about the phenomena of his practice, and about myself. |

Note. From The reflective Practitioner: How professionals think in action (p. 302), by D. A. Schon, 1983, New York: Basic Books.

At this point in the discussion, some critical comments on the contributions of Mezirow and Schon may be helpful to readers of this paper since the explanations of their paradigms have been necessarily lengthy. As mentioned earlier, Mezirow (1981) acknowledges the central role of critical reflection and reflective thinking in achieving perspective transformation, but the abstract nature of Mezirow's writings limits comprehension of his theoretical model, which may, by association, diminish readers' consideration of the critical thinking elements expressed in his work. Unfortunately, Schon's (1983) model is also difficult to understand because it includes ambiguous vocabulary (e.g., knowledge-in-action, knowing-in-action, reflection-in-action, reflecting-in-action, and so on), nevertheless he seems to focus on the use of critical reflection and reflective thinking to improve the learning process, though he does not use such terms. It appears that both Mezirow and Schon built their elaborate models around the basic concept of reflective thinking, examined years ago by John Dewey (1933/1998).

In a pivotal position paper, Stephen Brookfield (1985) offers a critical definition of adult education and six principles of critical practice, including two principles promoting the use of critical reflection. He states that a critical practitioner holds these six beliefs about adult education:

1. Participation is voluntary; adults are engaged in learning as a result of their own volition. It may be that the circumstances prompting this learning are external to the learner (job loss, divorce, bereavement), but the decision to learn is that of the learner's. Hence, excluded are settings where adults are coerced, threatened, bullied or intimidated into learning.

2. Respect for self-worth; an attention to increasing adults' sense of self-worth underlies all educational efforts. This does not mean that criticism is absent from educational encounters. Foreign to adult education, however, are practices or statements which belittle others or which involve physical or emotional abuse.
3. Adult education is collaborative; teachers and learners are engaged in a cooperative enterprise in which, at different times and for different purposes, leadership and facilitation roles will be assumed by different group members. This collaboration is seen in needs diagnosis, objectives setting, curriculum development, in methodological aspects, and in generating evaluative criteria and indices. This collaboration is continuous, so that adult education involves a continual renegotiation of activities and priorities in which competing claims are explored, discussed and negotiated.
4. Praxis is at the heart of adult education; participants are involved in a constant process of activity, reflection on activity, collaborative analysis of activity, new activity, further reflection and collaborative analysis and so on. "Activity" can, of course, include cognitive activity so that adult education does not always require participants to do something in the sense of performing clearly observable acts. Exploring a wholly new way of interpreting one's work, personal relationships or political allegiances, would be examples of activities in this sense.
5. Adult education fosters a spirit of critical reflection; through education learners come to appreciate that values, beliefs and behaviors are culturally

constructed and transmitted, and that they are provisional and relative. Adult educators are concerned, therefore, to prompt adults to consider ways of thinking and living alternative to those they already inhabit.

6. The aim of adult education is the nurturing of self-directed, empowered adults; such adults will see themselves as proactive, initiating individuals engaged in a continuous re-creation of their personal relationships, work worlds, and social circumstances, and not as reactive individuals, buffeted by the uncontrollable forces of circumstances. (p. 48)

Brookfield is probably the most recognized contemporary writer on the topic of critical thinking, and he actually uses the terms reflective thinking, critical reflection, and reflective practice, but with limited mention of Dewey, Freire, Mezirow, Schon, and other contributors to the research base. Brookfield (1987) identifies two central activities that engage people in critical thinking: identifying and challenging assumptions, and exploring alternative ways of thinking and acting. He suggests that previous literature emphasizes critical thinking as an activity triggered by negative events such as death, divorce, unemployment, or sudden disabling illness, but states "it is a mistake to regard critical thhiking as occasioned only by trauma" (p. 3 1), noting from his studies of people experiencing critical analysis, "moments of sudden insight or self-awareness can, it seems, be triggered by events that are fulfilling rather than distressing" (p. 3 1).

In his many articles and books about critical thinking, Brookfield provides theoretical explanations of the concept, but concentrates primarily on explaining a variety of practical tools and techniques which he suggests can be used to help educators and learners become critically reflective. Some examples of critical thinking strategies

promoted by Brookfield include reflective journals, autobiographies, critical discourse, scenario analysis, critical debate, crisis decision-making exercises, Critical Incident Questionnaires, and Good Practice Audits (Brookfield, 1992, 1995, 1997).

Learning from Experience

This review of the literature of critical thinking reveals three common stages that occur in the process of critical thinking: (a) uncovering assumptions that guide thoughts and actions, (b) examining and challenging those assumptions, and (c) accepting, rejecting, and restructuring assumptions which leads to new ideas and different approaches. In addition, the literature expresses an underlying message that learning is undeniably linked to experience, and critical and reflective thought is a **means of making** sense out of that experience. But, Dewey (193 8/1997) cautions, "the belief that all genuine education comes about through experience does not mean that all experiences are generally or equally educative" (p. 25).

The editors of a collection of essays on experience and learning, Boud, Cohen, and Walker (1993/1996), agree that experience is the foundation and source of learning, and that reflection on experience is the key that leads to learning. Most of the thirteen essays included in their volume focus on educational approaches that foster reflection and learning. In the same volume, Boud and Walker (1993/1996) note that holistic (past and new) experience and critical reflection on experience are essential for learning. They offer a model depicting three distinct areas of learning that come from experience: (a) preparation (return to experience), (b) experience (attend to feelings arising out of the return to experience), and (c) reflective processes (re-evaluate experience and link new experience with past experience). Boud (1994) criticizes the literature of adult education

for stressing the importance of learning from experience, yet falling short when it comes to providing frameworks that facilitate such learning. He explains the facilitation of learning using a model similar to the one presented by Boud and Walker. Boud cautions, "it is important, of course, that we do not take these constructs too seriously and ask them carry the weight of deciding what we should do [in practice]" (p. 53).

Baker (1996) reviews the recent literature on critical thinking and reflective learning and concludes that reflection on experience is the thing that grounds the process of critical thinking. He offers these statements about the nature and potential of reflection:

> Boyd and Fales (1983) provide a working defmition of reflection which suggests it is a process of thinking about and exploring an issue of concern, which is triggered by an experience. The aim of one's deliberations is to make sense or meaning out of the experience and to incorporate this experience into one's view of the self and the world. The exploration of an experience to create meaning (reflection) inevitably focuses on something of central importance to the individual where there is potential for significant learning and growth. Part of the uniqueness of reflection lies in the fact that it has the potential for generating new knowledge, whereas application of content knowledge does not (Boyd & Fales, 1983). (pp. 19-20)

Evaluating Critical Thinking

Thus far, this discussion has focused on explaining various opinions about what constitutes critical thinking and why it is important in education, but little on how well critical thinking works in educational settings and whether the models described in the

literature provide useful educational strategies. The literature of adult education lacks consensus about a definition of critical thinking, and seems divided on evaluating the concept, as well. Many sources concentrate on critical thinking skills and evaluate the application of various critical thinking methods (tools, techniques, and strategies) used to produce critical thinking and measure its progress; whereas, other sources examine the meaning of critical thinking and the integration of critical thinking theory into educational practice.

Fulton (1989) conducted a lengthy review of the literature on critical thinking, listing 105 references and noting that sources since 1970 center on three significant areas: (a) defining critical thinking, (b) measuring critical thinking, and (c) teaching others how to engage in critical thinking. According to Fulton, critical thinking requires certain attitudes, dispositions, strategies, and skills that allow people to engage in the process, noting a research study at Montana State University concerned with how to measure the attitudes and strategies of critical thinkers. Potts (1994) discusses the skills needed for critical thinking and offers three simple strategies for teaching critical thinking: (a) building categories of information, (b) finding problems, and (c) enhancing the learning environment to encourage critical thinking.

Much of the work of Norris and Ennis (1989) focuses on how to tell how well students think critically, and whether programs used to teach critical thinking are having impact. They establish a context for evaluating critical thinking by analyzing what qualities or dispositions to look for in critical thinkers, listed as follows:

Critical thinkers

1. seek a statement of the thesis or question;

2. seek reasons;
3. try to be well informed;
4. use credible sources and mention them;
5. take into account the total situation;
6. keep their thinking relevant to the main point;
7. keep in mind the original or most basic concern;
8. look for alternatives;
9. are open-minded and
    a. seriously consider points of view other than their own;
    b. reason from starting points with which they disagree without letting the disagreement interfere with their reasoning;
    c. withhold judgement when the evidence and reasons are insufficient
10. take a position and change a position when the evidence and reasons are sufficient to do so;
11. seek as much precision as the subject permits;
12. deal in a orderly manner with the parts of a complex whole;
13. employ their critical thinking abilities;
14. are sensitive to the feelings, level of knowledge, and degree of sophistication of others. (p. 12)

According to Norris and Ennis, these fourteen statements represent the dispositions of a critical spirit-personal qualities that motivate critical thinkers to apply critical thinking abilities to their own thinking and to that of others, and to want their own thinking to meet the standards of critical thought.

Norris and Ennis (1989) note that the evaluation of critical thinking is a difficult task and must be guided by the standards of critical thought, with no precise formula or set of rules that will mechanically generate a good evaluation. Their work focuses on examining the validity of instructional tools for gathering data on students' critical thinking, including several well-known commercial tools for evaluating critical thinking abilities, including the Watson-Glaser Appraisal; Comell Thinking Tests; and Ennis-Weir Essay Test. They also offer guidelines for custom designing evaluation tools to fit whatever applications need to be measured.

Brookfield (1997) analyzes critical thinking in terms of an intertwined social process and purpose-a process which "involves adults in recognizing and researching the assumptions that undergird their thoughts and actions" (p. 17), and a purpose "to scrutinize two interrelated sets of assumptions .... first, there are assumptions that fi-ame how we view power relationships in our lives .... second, there are hegernonic assumptions that need to be uncovered" (p. 18). He notes, "critical thinking can only be assessed in specific contexts" (p. 19), and "can often be best assessed by one's peers, who function as critical mirrors" (p. 20). In his premier position paper on critical practice, Brookfield (1985) criticizes consumer-oriented adult education (meeting learner needs), and urges adult educators to "develop a philosophical rationale to grant their practice order and purpose" (p. 45). Later, Brookfield's (1992, 1995, 1997) writings are dominated by many tools and strategies for developing critical thinking skills Ooumals, autobiographies, scenario analysis, critical debate, case studies, decision-making exercises, questionnaires, audits, assessments, appraisals, observations, etc.).

Though some of the tools and techniques described in the literature may be very useful for encouraging critical thinking, educators should consider the perils of assuming that critical thinking can be generated and monitored exclusively with instructional devices. Paradoxically, some critical thinking strategies described in the literature are merely educational techniques that rely on the experts deciding what should be learned and how the knowledge transfer should occur--educational methods that seem antithetical to true critical thinking practice. Shelton (199 1) notes the rediscovery of thinking in the literature and curriculum since 1980, but criticizes "the fragmentation and debasement of thinking into a series of step-by-step, discrete skills to be acquired through simplistic, mechanistic skill-drill workbook exercises" (p. 587). Dewey (19311/1998) forewarns of the potential misuse of theoretical models such as critical thinking in this caution to educators about technical professional knowledge (which he defines as knowledge of instructional techniques):

> Professional knowledge is sometimes treated, not as a guide and tool in personal observation and judgement-which it essentially is-but as a set of fixed rules of procedure in action. When a teacher finds such theoretical knowledge coming between him and his own common-sense judgement of a situation, the wise thing is to follow his own judgement-making sure, of course, that it is an enlightened insight. For unless the professional information enlightens his own perception of the situation and what to do about it, it becomes either a purely mechanical device or else a load of undigested material. (p. 276)

Critical thinking tools and techniques do not guarantee that critical thinking takes place, and skills-oriented methods may threaten the very element that makes critical thinking a

valuable educational strategy-the active participation of both teachers and learners in the process of acquiring knowledge.

Brookfield (1994, 1995) reports that some adults experience a dark side of emotions as they feel their way through critically reflective episodes. By studying the life histories of 311 adult educators-their learning journals, conversations, and autobiographies-Brookfield uncovers five common themes: (a) impostership (the sense that participating in critical thought is an act of bad faith); (b) cultural suicide (the recognition that challenging conventional assumptions risks cutting people off from the cultures that have defined and sustained them); (c) lost innocence (the move from dualistic certainty toward dialectical and multiplistic modes of reasoning); (d) roadrunning (the incrementally fluctuating flirtation with new modes of thought and being); and, (e) community (the importance of belonging to an emotionally sustaining support group of peers also in critical process). Brookfield states these issues represent important discrepancies between idealized images of adult education and the actual practice of adult education, and contradict much of the inspirational rhetoric surrounding discourse on critical reflection.

The literature indicates that adult educators need to redirect their focus regarding the use of critical thinking in educational practice. A major challenge for educators is the integration of abstract university knowledge, practical knowledge, and critical reasoning processes (Baskett, Marsick, & Cervero, 1992). Robertson (1996) complains that the literature encourages educators to help learners experience empowering paradigm shifts such as critical thinking, but neither adequately prepares nor supports adult educators to achieve this goal. Taking a more positive approach, Merriam and Brockett (1997)

discuss the importance of educators examining and reframing their practice, noting reflective practice as an emerging perspective in the field of adult education. They state that effective practice involves being able to reflect critically upon one's methods of practice and consider alternative methods. Though Lipman's (1987) work is affiliated with non-adult education, his comments are significant for adult educators. Echoing Dewey's advice from years ago, Lipman encourages a foundational change in educational priorities from learning to thinking, requiring a redefinition of the classroom function and the promotion of philosophy and thinking skills as means of developing autonomous, rationale beings who are not merely well-learned, but are also able to think well. The literature of adult education offers a rich research base for learning about critical thinking and guiding educators to new paradigms of teaching and learning.

## Past and Present Approaches in Health Education

Since the 1980s, health care provision in the United States has shifted from reaction to proaction--4he delivery of medical treatment as needed for illness, injury, and disease has shifted to the delivery of medical treatment plus an emphasis on the prevention of illness, injury, and disease. This change is largely due to the need to control the costs of health care, but provides a great opportunity for health educators. No matter how much of the Gross National Product is allocated for health care, the nation lacks enough resources to provide sufficient services after patients become ill-health education to prevent illness and promote wellness has become a priority on the national agenda (Jorgensen, 1994). The recent literature of health education indicates movements away from traditional behaviorist teaching models that emphasize changes in behavior,

toward learner-focused teaching models that promote informed decision-making and self-care, and emphasize changes in knowledge and attitudes.

Traditional Health Education

Historically, health education has been delivered using both cognitivist and behaviorist theories of learning-viewpoints suggesting (a) that learners are just processors of information and their learning can be influenced, (b) that the goals of learning are to change knowledge and behavior, and (c) that learning activities should be structured and good behavior should be rewarded. Health educator John Higginbotham (1992) notes three targets of change for health education programs: knowledge**,** attitude**,** and behavior. He argues that knowledge change is the customary target of health education, that emphasis on attitude change waxes and wanes, and that changing "behavior is the predominant reason for implementing health promotion/disease prevention programs .... after all, the ultimate goal of such programs is to improve health by changing behavior" (p. 41). It is likely that most learners in need of health education are adults, yet traditional health education methods contradict one of the primary tenets of adult education: cognitivist and behaviorist methods are not very effective approaches for teaching adult learners. As mentioned earlier, the health education literature suggests that health educators currently have strong interest in patient-centered educational methods that encourage informed decision-making and self-care, which suggests renewed interest in health education that will influence attitude change, as well as knowledge and behavior change. Hopefully, this trend in the literature represents a shift in the theoretical focus of health education, not just another repetition of the waxing and waning cycle noted by Higginbotham. This suggests an opportunity for the field of adult education to inform

health education practitioners and encourage the development of more appropriate, more effective health education programming for adults.

Contemporary Trends in Health Education

Learning to change may be one of the most challenging tasks that adults face. Change involves examination of thoughts, emotions, and values, and adult educators need to take responsibility for facilitating learning that leads to reflection and action (Loughlin, 1996). The life competencies needed by adults are varied and numerous, as are the life problems they must overcome. In their well-known book about adult learning, Merriam and Caffarella (1991) focus on development al factors that influence the learning needs and experiences of adults, summarizing what psychologists, sociologists, and educators have written about the physical, psychological, and sociocultural changes encountered by adults undergoing planned and unplanned life events and transitions. They state, "adults continually experience transitions, whether anticipated or unanticipated, and react to them depending on the type of transition, the context in which it occurs, and its impact on their lives" (p. 108). And, they note that learning in adulthood "is most often related to transitions involving career and family, although other spheres such as leisure pursuits and health are also important" (p. 109).

Brammer (1992) defines a transition as, "a short-term life change characterized by sharp discontinuity with the past" (p. 1). He states, "the key goal for counselors who are helping people cope with threatening personal change is to teach them the skills they can use to conceptualize the nature of their transitions" (p. 4), noting that people who cope well with transition are "people who perceive themselves as being in control of their lives, and to a large extent over the events in their lives" (p. 3). Brammer lists cognitive

restructuring, or reframing, as one of several teachable coping skills which can "help people inoculate themselves against the unwanted consequences of their transitions, such as depression, hopelessness, chronic grief, and self pity, or awareness of being in crisis and out of control" (p. 4).

Power (1997) challenges rehabilitation educators to develop critical thinking skills in their students so they will learn to apply professional knowledge as practitioners, noting that the skills used in critical thinking are needed in practice, and will allow for a smooth transition from theory to practice. He states, "critical thinking involves asking probing questions, identifying and analyzing the relevant issues in a case study, and thinking about the facts and what they mean for a client's total life experience .... it means comparing and contrasting viewpoints, considering ideas in a variety of contexts, or rethinking a position taken earlier"(pp. 257-258). Power reports, "the study of critical thinking has fallen into three traditions of thought: the philosophical, the psychological, and the educational" (p. 258), noting that philosophers emphasize formal logic and how people think under ideal circumstances, psychologists look at people's cognitive processes under less than ideal circumstances (e.g., time constraints or lack of enough information), and educational theorists often combine the two approaches to find ways to help adults develop problem-solving and decision-making skills.

A nursing educator analyzes critical reflection as defined by Dewey, Mezirow, and Schon, and concludes that the strategy is fundamentally flawed and of limited use to the nursing profession because it lacks a universally clear definition (McIntosh, 1998). Scanlan and Chemomas (1997) criticize nursing literature that encourages the use of critical reflection with students but is silent on how teachers become reflective. They urge

educators to realize that to teach reflectively one has to be reflective, and give up the position of authoritative knower. And, they pose a question that all educators should ask themselves, "are we as nurse educators [educators] jumping on the reflection bandwagon without clearly understanding the basic issues related to conceptual meaning(s) in the use of reflection?" (p. 113 8).

Using Critical Thinking in Health Education

Recent health education literature includes several empirical studies attempting to document the effectiveness of learner-focused teaching methods that use critical thinking strategies. This is not surprising, since health education is linked to the field of medicine, and well acquainted with the scientific method and process of scientific inquiry. Lowe and Kerr (1998) review the literature of experience-based learning, singling out reflection as a means to achieve deep-learning and student independence. They conducted a study of two groups of nursing students, one group exposed to reflective teaching methods and the other taught by conventional teaching methods. Both groups had already begun their nursing education with the same conventional instruction prior to the study, and both had similar clinical and theoretical course experience. The study reports no statistical difference in learning outcomes between the groups, but notes weakness in the study design since both groups had the same existing knowledge base from previous program instruction. The researchers question whether outcomes would be the same with differing knowledge bases. They conclude that the study's "data demonstrates that reflective teaching methods have enormous potential for enhancing learning when used alongside the conventional methods" (p. 1033), and note that the topic warrants further research.

One recent study (Wong, et al., 1995) attempted to develop and test coding systems for reflective journals written by *forty-five Registered* Nurses enrolled in a post-registration nurse educator program. The contents of the students' journals were analyzed on two levels-the presence or absence of reflective thinking, and the quality of reflective thinking-and used the theoretical works of Boud, Keogh, and Walker, and of Mezirow and Associates, as the basis for estimating the quality of reflection on both levels. The study showed that student journal writing can be used to determine the presence or absence of reflective thinking, and that recognition of common and distinct writing features permits reliable allocation of students in one of three categories according to Mezirow's model-non-reflector, reflector, or critical reflector. However, the study reported that analyzing text elements to identify finer levels of reflection using the model defined by Boud et al. was problematic and considered less reliable.

Another study (Anderson et al., 1991) compares outcomes of the skills and attitudes of diabetes educators using a compliance-based approach to patient education versus an empowerment approach. The authors explain that traditional patient education is aimed toward improving patients' compliance using the recommendations of health-care professionals, whereas a patient empowerment approach "seeks to maximize self-care knowledge, skills, self-awareness, and a sense of personal autonomy of patients to enable them to take charge of their own diabetes care" (p. 585). They uncover several assumptions of traditional patient education: the approach (a) assumes that the benefits of patient compliance outweigh the costs (e.g., negative impact on patient's quality of life), (b) assumes that health-care professionals, because of their expertise, should be the primary decision makers regarding a patient's care, and (c) assumes that patients should

obey. The study was conducted as a training program for diabetes educators using an empowerment patient counseling model with four steps: (a) exploring issues related to diabetes care, (b) personalizing the problems of diabetes care, (c) helping patients clarify their health-related values and establish goals, and (d) helping patients develop and commit to a specific plan. The study showed that the empowerment-training program yielded significant improvement in counseling skills, and positive changes in the attitudes of the diabetes educators. Benefits to patient learning were not examined; the study focused only on outcomes for the educators participating in the training program.

Baker (1996) discusses the results of one baccalaureate nursing school's use of reflective journals. Students report enjoying the reflective process because it allows them to find greater meaning in what they do clinically, whereas faculty members recognize some benefits of reading reflective student journals, but report being overwhelmed by entries describing feelings of guilt and helplessness, particularly related to nursing assessments and clinical judgments. Baker notes that significant changes are occurring in modem nursing practice:

> The nursing process has emerged from the scientific method which has long been regarded as the only legitimate means of problem-solving in medicine (Jones & Brown, 1993). Recently, there has been increasing awareness that the exclusive use of reductionistic Cartesian thinking, which is inherent in the scientific method and nursing process, does not adequately serve the nursing profession in its efforts to work with individuals and communities holistically. Nursing decisions are not only the result of linear problem solving but are also arrived at through a process of synthesizing different points of view and contradictory lines of reasoning

> (Pless & Clayton, 1993). Reflective learning tends to support such a holistic synthesis (Palmer, Bums, & Bulman, 1994). (p. 20)

These statements seem to represent an important philosophical shift and significant considerations for all members of the health professions, including health educators, as health care moves toward a new era of client-centered practice.

## Summary and Conclusions

This research examined the use and usefulness of critical thinking strategies in health education programming for adults, considering its application for both health practitioners and their adult learners by examining literature from two fields of practice—adult education and health education. Information was presented in four sections: (a) the challenge for health education, (b) defining the context of health education, (c) defining the concept of critical thinking, and (d) past and present approaches in health education. The literature review reveals critical thinking as a process that involves uncovering assumptions that guide thoughts and actions; examining and challenging those assumptions; and accepting, rejecting, and restructuring those assumptions which leads to new ideas and different approaches. The field of adult education has a rich research base of critical thinking paradigms, and the field of health education seems to recognize critical thinking as a useful educational strategy. The following summarizes several important issues uncovered by this research:

1. The literature of adult education includes many forms of critical thinking methodology, some cloaked in elaborate terminology, but most stemming from Dewey's rootstock writings about reflective thinking.

2. The literature of health education suggests a paradigm shift from traditional behaviorist-cognitivist teaching methods to learner-focused methods that promote ideas such as critical thinking, and lead to informed decision-making and self-care.

3. Much of the health education literature tends to confuse the terminology of empowerment and critical thinking, possibly neglecting to see empowerment as a desired end for health education and critical thinking as the means to that end.

4. The literature of adult education and health education tends to focus on the use of critical thinking to enhance professional practice; the use of critical thinking to enhance learner outcomes seems overlooked literature and may deserve further study.

5. An opportunity exists for health education professionals to become agents of change for health wellness by providing health education programs that promote the prevention of illness, injury, and disease.

6. The field of adult education has an opportunity to educate the educators (in health education and other disciplines) by promoting sound principles of adult education, steeped in the field's historical traditions of critical practice.

It is disappointing that the literature search did not yield any articles that matched the chosen research topic and could provide some guidance for this study. In fact, without such direction, it was necessary to seek articles across several disciplines-adult education, general education, health education, psychology, nursing and other health-related professions-and piece together the views expressed in this paper. This was a difficult and cumbersome task, but the author believes the research focus is appropriate and the findings are meaningful.

This researcher concludes that health educators (and all educators) should spend time studying the literature for educational strategies that enable learners to critically and consciously examine their problems, and they should incorporate critical thinking strategies in their educational approach. Health education professionals need to remember their goal-to empower people to exercise more control over their personal health and well being. Simply stated, educators should strive to firid and use teaching methods that help people help themselves.

## Applications

The purpose of this final section of the Master's paper is to bridge the findings of the literature review to an issue within a specialized practice area. The researcher's chosen area of practice is health education for adults, specifically nutrition education; the issue is the need for critical examination of the hegemonic methods of practice, teaching, and learning used in the nutrition education of adults. The researcher has practiced in the field of dietetics for more than 25 years, and has been a student of adult education for almost six years. The remarks made in this section relate directly to the researcher's experience as a dietitian and provider of nutrition education for adults.

In the literature of adult education, critical thinking about professional practice is a common topic (Brookfield, 1985, 1987, 1992, 1994, 1995; Dewey, 1933/1998, 1938/1997; Freire, 1973/1998; Lindeman, 1926; Mezirow, 1981; Schon, 1983). Brookfield's writings often focus on using critical thinking to enhance practice, and specify two steps central to the critical thinking process: (a) identif~ring and challenging assumptions, and (b) exploring alternative ways of thinking and acting (reframing

assumptions). A critical examination of practice situations can lead to acceptance of the way things are (hegemony), or recognition of the need for change. Merriam and Brockett (1997) view critical reflection on practice as a means for refraining perspectives and improving methods of practice, and an important step in professionalizing the practice of adult education.

In the literature reviewed for this research paper, one message is repeated often and stands out from the rest: what is needed is a foundational change in educational priorities from leaming to thinking, requiring a redefmition of classroom functions and the promotion of reasoning and thinking skills (Dewey, 1933/1998; Lindeman, 1926; Lipman, 1987; Shelton, 1991). These comments made by non-adult educators, and similar views expressed by adult educators (Brookfield, 1985; Freire 1973/1998; Mezirow, 1981; Schon, 1983), suggest that critical examination of practice is important for all educators (adult and non-adult) to consider. Expanding on that premise, this researcher believes that a foundational change is needed in the nutrition education of adults, a change in focus from leaming about nutrition to thinking about nutrition, requiring a redefinition of the functions of nutrition education programming, and the promotion of critical thinking and reasoning skills for both nutrition educators and learners of nutrition-related information.

This Applications section of the paper is organized into three parts to explore issues related to the ftinctions of nutrition education, and the use of critical thinking to enhance the practice of nutrition educators: (a) refraining practice, (b) refraining teaching and learning, and (c) nurturing critical spirit, The term refraining is borrowed from Brammer's (1992) remarks about cognitive refraining, Brookfield's (1994, 1995) ideas

on reframing assumptions, and Merriam and Brockett's (1997) comments about using critical reflection to reframe perspectives and methods of educational practice—in this paper the term reframing means to examine and view differently, as warranted. The discussion in each part is guided by the researcher's personal experiences, findings from the literature review, and insights on practice implications for the fields of adult education and health education. First, the section on reframing practice examines experience and critical reflection as keys to defining and structuring educational practice, and establishes the researcher's personal connection to nutrition education, adult education, and critical thinking. Next, the section on reframing teaching and learning considers traditional nutrition education methods, and advocates for empowering nutrition education approaches. The final section, nurturing critical spirit, offers suggestions for maintaining a critical approach to practice, and challenges the field of adult education to inform other educators about critical practice.

The researcher has noticed that much of the literature of critical thinking uses anecdotes written in informal first-person style to illustrate the issues and ideas presented—an interesting paradox since hegemony dictates that third-person is the preferred style for academic writing. Many sources agree that personal experience is a valuable and power force in learning, and first-hand accounts (such as journals, stories, autobiographies, histories, etc.) may be the most helpful way for educators and learners to critical examine experience and make meanings of thoughts and actions (Boud, Cohen, & Walker, 1993/1996; Brookfield, 1987, 1992, 1995, 1997; Dewey, 1933/1998, 1938/1997; Freire, 1973/1998; Schon, 1983; Shor, 1996; Shor & Freire, 1987). Simply stated (and said many times before), experience is a good teacher.

With this thought in mind, the writer has opted to include informal first-person anecdotes to enhance some of the discussions in this Applications section of the paper. Three stories were selected from the writer's personal journals about her practice as a dietitian and nutrition educator. It is understood that a more formal style of writing is preferred for a Master's paper, however the writer believes that the chosen research topic warrants the decision to include illustrative text. It is hoped that the reader finds value in the writer's choice. The text written in informal style is distinguished from the formal body of this paper by a one-half inch indent from the left margin; the date of each journal entry is noted at the end of each text block.

## Reframing Practice

To teach critical thinking, one needs to be a critical thinker. And, critical examination of educational practice seems to be the right place for professional educators to start the process of critical thinking. "Educators' reflections on their own struggles as critical learners are invaluable in helping them to work sympathetically but usefully with others in the critical process" (Brookfield, 1994). This part of the discussion focuses on the use of experience, and critical reflection on experience, for defining and structuring methods of educational practice, and highlights the researcher's experience as a dietitian, and personal connections to nutrition education, adult education, and critical thinking.

### Using Experience to Structure Practice

Much of the literature on critical thinking links to Dewey's (1933/1998, 1938/1997) rootstock writings about experience and reflective thinking, and suggests that experience and the critical examination of experience are key elements of critical and

effective practice (Freire, 1973/1998; Mezirow, 1981; Schon, 1983; Brookfield; 1985, 1987, 1992, 1994, 1995, 1997; Boud, et al., 1996). Schon comments that professional practice has as much to do with finding problems as with solving problems. In science-based professions such as dietetics, practitioners are typically viewed as technical problem solvers, using specialized, standardized knowledge and research-based theories and techniques to achieve objective and measurable ends-professional knowledge that Schon calls technical rationality. More often than not, practice situations are not just predictable problems to be solved, but unique problematic situations requiring another kind of know-how-which Schon calls professional artistry-to uncover problems in the midst of the complexity, uncertainty, instability, and value conflict occurring in real practice. Unfortunately, the dominant paradigms used to educate professionals focus on the development of technical rationality, rather than professional artistry, so professionals are often unprepared to deal with real problems in practice. Schon defines a critical and reflective practitioner as one who examines practice experience and chosen methods of practice, recognizing and using both technical rationality and professional artistry to overcome the difficulties encountered in actual practice.

The field of dietetics is linked to the science of nutrition and other medical professions. The role of the dietitian often includes being a nutrition educator, however the functions of nutrition education are not well defined within the fields of medicine and dietetics. Nutrition science is a young science, with new information discovered often and much of the information uncertain. Nutrition education involves the interpretation of nutrition science into terms understood by the public, for the purposes of improving nutritional status, reducing nutrition-related deficiencies and disease, and improving

quality of life. The role of the nutrition educator requires a diverse level of knowledge about nutrition science, and the ability to provide effective educational interventions for disseminating current information to individuals and society (AbuSabha, 1998).

Personal Connection

This researcher uses critical examination of practice experience to enhance her practice as a dietitian and nutrition educator of adults. For most of her career, the researcher has thought critically and reflectively about her professional practice in order to gain perspectives about what happens and what she wants to have happen. On occasion, she finds it helpful to write stories about her practice, an activity that helps to clarify situations and guide actions. However, it should be noted that the writer did not always recognize this activity as critical and reflective thinking. The following journal entry offers a snapshot description of how this researcher views her practice as dietitian and nutrition educator, and the difficulties and pleasures she encounters in her practice. It reveals a series of insights and assumptions, some occurring recently (in the past six years) during her study of adult education, others evolving over the course of her professional career as a dietitian.

> I have practiced as a Registered Dietitian since 1972, working as a clinical and administrative dietitian in a variety of hospitals and nursing homes, and as a consultant for a university food service program. For more than four years, I have been employed as a clinical dietitian for a large international corporation that provides outpatient dialysis services for patients with renal (kidney) failure. I divide my part-time hours between two corporate business units in western Pennsylvania. My primary responsibilities as an outpatient renal dietitian are to

follow and document the nutrition progress of the clinic's patients according to corporate, state, and federal policies. But, my duties also include providing renal nutrition education as needed to new and existing patients, and also to their families or caregivers (such as nursing home staff). I am often frustrated with my current position because there never seems to be enough time to do everything that is needed.

The nutrition education needed by renal patients is focused on learning how to follow an appropriate renal diet—adequate protein and calories, but limited potassium, phosphorus, sodium, and fluid—a very complex diet, which is difficult to teach and difficult to follow. Teaching a patient about renal diet requires the transfer of information regarding basic good nutrition principles, plus specific information about food sources of potassium, phosphorus, and sodium, and methods for controlling fluid intake. And frequently, a patient's medical complications dictate additional diet restrictions as well, such as diabetic diet (controlled carbohydrate intake), or cardiac diet (controlled fat and cholesterol intake).

I believe that it is best for diet prescriptions and diet education to be individualized for each patient, to match diet expectations with their lifestyle and food desires as much as possible. I also believe that good diet compliance directly correlates with acceptance of the diet and accurate diet understanding. Therefore, I choose to provide diet education that includes explanations of how to follow the appropriate diet, plus rationales supporting the recommended diet parameters. And, I routinely review the effects of individual diet behavior on lab

values and overall nutritional status, and discuss the results with each patient and/or caregiver every month. It takes a great deal of time to provide this kind of nutrition education. The company I work for does not seem to realize how much time is needed to provide good nutrition education.

In an outpatient dialysis setting, many factors can limit the dietitian's opportunity for educating patients, and therefore influence the teaching process and learning outcomes. For example, my patients come for dialysis treatments three times a week, for three- to four-hour sessions, and the units where I work usually schedule 12 patients per shift, every other day, often dialyzing 24 to 32 patients on the same day. Understandably, most patients who spend 9 to 12 hours a week for dialysis treatments are not willing to come in early or stay after treatment to see the dietitian, or any other medical personnel for that matter. Therefore, it is most practical for me to counsel and educate the patients during the time they are getting their dialysis treatments. Since the corporation contracts me for part-time hours divided between two different units, the opportunity to visit (and educate) each patient is typically limited to once a week, at best. I have other job duties, as well--such as preparing reports and attending corporate meetings-which limit opportunities for patient visits even further. In actuality, I usually get a chance to visit each of the patients only once a month. Naturally, new patients and patients with urgent dietary concerns must be visited as often as needed, as my schedule permits.

Aside from limited time for teaching, other factors influence the teaching process, as well. While receiving dialysis treatments, the patient’s movement is

> restricted because the patient must be reclined in a chair, with a bloodline connected from the dialysis machine to an arm access, or neck or chest catheter. The dialysis unit, which treats multiple patients at a time, is usually bustling with activity and noise distractions. Other medical staff must attend to the patient periodically to monitor blood pressure readings or make machine adjustments. Many patients are hard of hearing, blind or vision-impaired, and may have short-term memory loss. And, many patients do not feel well on treatment-headaches, nausea, and vomiting are common occurrences. Often, I think half-jokingly to myself, the only positive factor in all of this is that my patients are a captive audience and unable to get away from the teaching event.
>
> It is difficult teaching nutrition to renal patients in an outpatient dialysis setting, but it is not impossible. All things considered, I really enjoy my job. And, I prefer teaching in this setting compared to traditional hospital-based diet education, because at least the outpatient dialysis setting allows opportunities to teach nutrition information to patients over a period of time, providing continuity of care for the patients, and a personal sense of satisfaction for me when I observe real changes in diet behavior. (January, 1999)

The preceding six paragraphs document the researcher's concept and context of practice, and provide some insights to allow the reader of this paper a more clear understanding of the opinions expressed about the research topic. The researcher's personal experiences as a dietitian, adult educator, and critical practitioner form the basis of her beliefs about the function of nutrition education, her concerns about learning

outcomes resulting from traditional nutrition education methods, and her interest in educational methods that can empower learners.

## Reframing Teaching and Learning

This second part of Applications considers the limited success of traditional nutrition education methods, and advocates for empowering nutrition education approaches that foster a critical thinking spirit in both learners and educators, and allow learners to be active participants in the educational process.

### The Failure of Traditional Nutrition Education

Traditional nutrition education approaches routinely focus on the need to modify eating behavior, and often rely on didactic methods to transfer expert knowledge as determined necessary by the nutrition educators—not unlike traditional approaches in other areas of education. Content-focused programs typically have little impact on learners who are threatened by personal health crisis brought on by poor nutritional status, because knowledge about nutrition is seldom the only deficit. The learners may also lack understanding about how and why they should change eating behavior, and they may need to develop personal control over their habits to be able to change behaviors. "Nutrition education programs and interventions are rarely designed to go on long enough, intensively enough, and with enough coverage to create long-lasting changes" (AbuSabha, 1998, p. 15).

Nutrition is a primary factor influencing health, but the rise of nutrition-related health problems plaguing this country—obesity, heart disease, and diabetes—suggests that traditional nutrition education methods are not successful for altering eating

behavior. All three of these major health risks—obesity, heart disease, and diabetes—can be prevented by good nutrition practices, and when the disease conditions already exist, changes in eating behavior can help minimize complications (e.g., diabetes or heart disease developing secondary to obesity, or renal failure developing due to uncontrolled diabetes). Nutrition education has the potential to influence health status by promoting eating practices that prevent disease, and control the complications of disease.

Despite the many challenges faced in providing nutrition education, AbuSabha (1998) comments that educators often expect unrealistically high results from their target audience, when compared to successful campaign figures in industry and marketing. She advises nutrition educators to be satisfied that they have significantly raised public awareness about nutrition and provided impetus for many individuals to change their nutrition behaviors, suggesting that the job of nutrition education "may become easier as the science of nutrition becomes more mature and new generations of nutrition-conscious individuals are more receptive to change and developing healthier lifestyles" (p. Is). This shortsighted view might make today's nutrition educators feel better about their accomplishments, but it ignores one important point—just how will future generations become more nutrition-conscious? This researcher believes that nutrition educators need to examine the hegemonic methods they use to educate clients, and not assume that the problems of providing effective nutrition education will go away tomorrow.

The following story illustrates the researcher's early experience with traditional nutrition education:

> Recently, I have realized that my interest in the topic of critical thinking began before I was a graduate student in need of a research topic, long before the

Concepts of critical reflection, reflective thinking, and critical thinking were introduced to me and took on meanings through my adult education studies. I have been a practicing health professional—a Registered Dietitian—for more than 25 years. Yet, I can clearly remember the hopeless feeling I had as a neophyte dietitian teaching my first patient about his new diet. The experienced dietitians who guided my initiation into the field of practice had assured me about how to give a diet instruction: (a) first, you explain the special diet, (b) you provide the patient with a diet handout to take home, and (c) then, the patient will go home and follow the new diet. In my training, I had observed other dietitians giving diet instructions. It seemed simple enough. I even remember wondering why I needed a college degree to do this job! It was time for my solo flight.

I carefully selected the appropriate diabetic diet sheet from the dietary department files in the hospital where I worked. It was a clearly written, very neat diet handout. I calculated the patient's meal plan, reviewed the information I planned to talk about, and headed for the patient's room. My first patient quickly taught me that a diet instruction is not such a simple thing. He made it quite clear that he did not want to be on a diet, much less want to learn about it! The diet instruction and the experience ended abruptly—I had not expected a problem, therefore I had no idea why this happened or how to fix the situation. I left the neat, well-written, carefully planned diet handout with the patient, and exited the room feeling bewildered, thinking that I should have known what to do to make the learning happen. I had wanted to help that patient understand why he needed a diet, and why he needed to learn about his diet.

> Privately, I have looked back on that experience many times over the past 25 years. I was not able to help that patient, but he did help me. Thanks to that experience early in my career, I have learned to think about the patients I teach. Who are they? What do they need to know, and why? How can I help them learn, and can I help them learn? When do I need to try a different approach? What kind of teaching will work best, and why? Where should the teaching take place, and why? These and other kinds of questions have guided my professional practice.
>
> My graduate studies, begun in 1994, have helped me find a name for what that first patient taught me-I learned to think critically and reflectively about my practice as a dietitian and nutrition educator. Though I have faced many tougher teaching situations since that first patient, I have seldom felt as hopeless as I did when I tried to teach him. I believe that critical and reflective thinking has guided me to be a more capable practitioners, and a more effective health educator. (September, 1998)

This story may simply represent something that happens to all practitioners as they struggle to find the professional artistry needed to translate technical academic knowledge into something useful for practice. But, this researcher believes that the experience with that first patient was the catalyst that awakened her critical thinking spirit and forever changed the way she approaches practice and provides nutrition education.

Nutrition Education for Health Wellness

The literature of adult education historically opposes the knowledge banking educational approach wherein the teacher is considered the expert possessor of knowledge, and the learner passively receives whatever knowledge the teacher chooses to

deposit. Instead, adult educators view education as collaboration between learners and teachers, with learners actively participating in the process of acquiring knowledge, and teachers facilitating the process-with the focus on discovering and exchanging information rather than transferring pre-existing knowledge. Educational events are dynamic teaching-leaming transactions, and the activities of teaching and learning should not be thought of separately. Both teachers and learners have opportunities to learn new information, and both have responsibilities to help the educational process happen (Brookfield, 1985, 1987, 1995; Dewey, 1933/1998, 1938/1997; Freire, 1973/1998; Lindeman, 1926; Mezirow, 1981; Schon, 1983).

The field of health education (including nutrition education) has cultural roots in medicine and other science-based professions, therefore it is not surprising that traditional health education relies on an educational model (the science model) that assumes the professional is the expert knower, and the client-leamer is dependent on the expert for knowledge. The recent literature of health education suggests a paradigm shift is underway, and frequently mentions the need for health education that empowers people with the information needed to make better health-related decisions, and improve health status by controlling their health destinies (Anderson, et al., 1991; Baker, 1996; Brammer, 1992; Cowen, 1991; Hawks, 1992; Jorgensen, 1994; Loughlin, 1996; Lowe & Kerr, 1998; Power, 1997; Scanlan & Chenomas, 1997; Wallerstein, 1993, Wong, et al., 1995). Hawks (1992) states that "empowerment occurs between two or more people: the person who empowers (i.e. teacher who makes possible or enables) and the person(s) who is (are) empowered (i.e. a student who becomes capable of setting and reaching goals)" (p. 610). One educator of nutrition education professionals (AbuSabha, 1998)

promotes practice methods that encourage learner participation, and reminds colleagues, "our educational approach needs to go beyond solely providing information to our clients .... we need to take our teaching one step further and start encouraging our clients to think critically to finding solutions to their nutrition problems" (p. 57).

The literature of both fields, adult education and health education, suggests that experience, and critical thinking used to make meaning of experience, are key elements in the process of leaming that leads to intelligent action (Anderson, et al., Baker, 1996; Brammer, 1992; Boud, 1994; Boud, et al.; Boud & Walker, 1996; Brookfield, 1985, 1987, 1992, 1995, 1997; Dewey, 1933/1998; Freire, 1973/1978; Friedrich, 1993; Hawks, 1992; Lindeman, 1926; Loughlin, 1996; Lowe & Kerr, 1998; Power, 1997; Mezirow; 198 1; Scanlan & Chernomas, 1997; Schon, 1983; Shor & Freire, 1987; Wong, et al., 1995). And, dialogue between teachers and learners (and between learners and learners) is regarded as the most effective way to help learners become critically aware of the meaning of experience (Brookfield, 1985, 1995; Freire, 1973/1998; Lindeman, 1926, Mezirow, 198 1; Shor & Freire, 1987). Freire states that critical dialogue is the very heart of the process of education.

As a critical practitioner of nutrition education, the researcher has learned that the following elements are essential for effective educational experiences: (a) accurate information, yet short messages; (b) simple information, using simple words; (c) useful information, related to real life; (d) information backed up with written handouts for home reference; (e) interactive and friendly approach; (f) timely presentation, yet flexible; (g) sensitivity to learning readiness; and (h) awareness of learning barriers. Also, the researcher has observed that learning outcomes seem more positive when

critical thinking activities such as dialogue and storytelling are incorporated in nutrition education. Using a critical approach in discussions, this health educator has experienced more open conversations with clients, which seems to result in improved comprehension and retention of the information presented.

The following story illustrates one of the researcher's recent experiences, and provides an interesting contrast to the diet instruction attempted with that first patient so many years ago:

> The other day in the dialysis unit I was standing near a patient's chair, washing my hands at the sink. I was planning to leave the unit when I finished, since I had already completed my teaching tasks with two patients I had come to visit. My mind was busy thinking about all of the paperwork I had waiting on my desk, I was wondering what I should work on next, and hoping to finish what needed to be done that day. The patient sitting in the chair near the sink is partially blind, but had recognized my voice as I spoke with other people while in the unit. As I stood washing my hands, he asked me, "Are you going to be here next week?" At this point I had to make a choice: I could answer quickly and get on with my paperwork, or I could take the time to talk with this patient. I got a stool and sat down next to him.
>
> We call this patient Bear, an affectionate nickname from his Native American Sioux surname. Bear has been on dialysis a little longer than one year. When he came to us he was very sick from renal failure. I remember meeting Bear on that first day, but I am certain he does not remember meeting me. He was slumped over in a wheelchair, his head drooping, his breathing labored, and

his eyes closed. Members of Bear's family were there-they did all of the talking for him, and made all of his decisions. We (the medical team) couldn't communicate with Bear, so instead we taught Bear's family what they needed to know to take care of him. With good dialysis and proper care over the next few weeks, the medical team helped Bear feel better. Soon, Bear was able to speak for himself again, and able to learn for himself about renal failure and dialysis.

Over the past year, Bear has adjusted well to his dialysis treatments three times a week. But, his diabetes has caused many more problems than the renal failure that brought him to our clinic. Bear's blindness has worsened to the point where he can no longer recognize people by sight. In the past six months, Bear has had both of his legs amputated because of gangrene. And the doctors suspect that Bear has had a few strokes, altering his memory and cognitive skills. Nevertheless, like any other patient, I believe this man is worth taking the time to talk to.

The other day, I made the right choice, I took some time to talk with this patient, and I found out how a simple conversation can lead to learning. I pulled my stool up next to Bear's chair and we talked together. I told Bear that I would not be in the unit next week because I was taking vacation time to write a paper for school. I asked Bear if he needed anything from me before I go. And, the dialogue and learning began.

Bear asks: *What are you writing a paper about?*

I tell Bear that I am in graduate school, and that the paper I am writing (a literature review) is the first step in writing my Master’s paper. I explain that my

topic is reflective thinking-thinking about what we do, and what we have done, and making better choices because of that thinking process. As I explain this to Bear, I am struggling in my mind to organize what I have learned about reflective thinking and critical thinking, and phrase it in ways that will make sense to Bear. His first question, "What are you writing a paper about?", forces me to examine my purpose and formulate ideas about how to structure my paper. Many thoughts are going through my head as I try to explain my topic to Bear, and I am thinking to myself, "This is really making sense! Now I know how to write my paper." Then he asks another question—a really good question.

Bear asks: *Doesn't everybody think?*

It takes an instant for me to recover, as I struggle with the surprise of Bear's simple assessment. I am not quite sure how to answer—I am trying to think while I speak. I say yes, thinking is just common sense. Of course, everyone can think, but not everyone takes the time to do it. I explain that I am talking about thinking and learning—reflecting on the choices we make and why we make them. If people will take the time to think about what they do and why they do it, they can have the power to change their lives—hopefully making positive changes. I tell Bear that my paper is about reflective thinking as a teaching strategy for health education.

As an example, I remind Bear that when I teach patients about their renal diet, I avoid using dos-and-don'ts lists, meal patterns, and pre-planned menus. Instead we talk together about food choices, and I ask my patients to think about what choices they make, and why some choices are better than others are. I tell

Bear that I believe this is a better way to learn about diet, because it gives people control over their own diet. And, I believe that with that feeling of control comes the power to make positive changes in diet behavior.

So far, Bear has listened politely and shown interest as I answered his questions, and he let me do most of the talking. At this point, our conversation begins to focus on something Bear knows about-following a renal diet-and, I notice that he shows even more interest, and starts to say more.

Bear asks: *What do I need to know? What kind of changes do I need to make?*

I think to myself, "Yes! Yes! Here is a teachable moment." Bear is ready to learn. And, now we are ready to talk about what is important for him to learn. I already know what I want to teach Bear-I follow his nutrition progress every month. I know that he drinks too much fluid, and he often eats too many foods high in potassium. We have talked about these problems before, and we probably will have to again. But this time, I feel something different is happening. Bear and I are talking with each other, and he is interested in learning about the changes I am asking him to make, and why he should make these changes. We have connected teaching and learning, and Bear has become active in the process, of his learning.

It was dialogue that led Bear and me to the thinking and learning that occurred in that teachable moment. In retrospect, it does not matter what we talked about, though it is easy to see how talking about thinking and knowing can lead to a question such as “What do I need to know?”. What is far more

> important is that Bear and I talked together-I gave him time to ask me some questions, I took the time to answer his questions, and in the process we both learned. Bear learned a little more about his renal diet. And, I learned a little more about how to help the learning happen. (March, 1999)

This researcher has observed that discussions seem to strengthen client-professional relationships and stimulate clients' interest in learning. Conversation can be empowering because it fosters a spirit of critical thinking in both learners and educators, and allow learners to be active participants in the educational process.

## Nurturing the Critical Spirit

This final part of Applications offers a few suggestions for maintaining a critical thinking spirit, and challenges the field of adult education to take responsibility for informing other educators about critical practice.

### Revisiting the Research Base

"Recognizing the discrepancy between what is and what should be is often the beginning of the critical journey" (Brookfield, 1995, p. 29), and it is important to clarify that critical thinking about practice is a journey that should never end. Critical thinking is a popular topic in the literature of adult education and health education, and therefore prone to many interpretations-practically everyone has jumped on the bandwagon with an opinion about critical thinking, what it is and how it should be used. Some viewpoints are legitimately founded on the historical beginnings of the concept, and others offer meaningless interpretations of whatever kind of teaching the writers wish to promote. Educators who choose to integrate critical thinking into their practice must understand the

differences and learn which opinions to trust-in other words, they need to use a critical approach to learning about critical thinking.

"Although critical reflection often begins alone, it is ultimately a collective endeavor .... we need colleagues to help us know what our assumptions are and to help us change the structures of power so that democratic [educational] actions and values are rewarded, both within and outside our institutions" (Brookfield, 1995, p. 36). Hopefully, one message resulting from this Master's paper is that the best way to understand and use critical thinking is to study the research, and the literature from the field of adult education offers a rich resource base to learn about critical thinking. However, several problems are noted in reviewing the recent literature of adult education and health education: (a) there seems to be no consensus on the defmition of critical thinking, (b) learning outcomes from using critical thinking strategies seem to be overlooked or under studied, and (c) more empirical research on the use critical thinking is needed, but clear definition of variables and valid qualitative measurements may be difficult to establish.

Educating the Educators

Throughout many years of practice experience as a Registered Dietitian and nutrition educator, this researcher has observed that traditional health education for adults is primarily focused on knowledge acquisition and behavior change, with success measured in terms of patients' compliance with the expert advice of health professionals. And, very often, the health professionals that offer the expert advice merely assume ancillary roles as educators, and possess limited understanding of how adults learn and the basic principles of adult education. The current health education literature indicates a growing interest in educational methods that use critical thinking to empower patients by

encouraging informed decision-making and self-care. This interest may suggest a paradigm shift in health education programs from behaviorist, compliance-based education to empowering education models—empowerment as the desired end for health education, critical thinking as a means to that end. However, from reviewing the literature of health education, this researcher notes that the field's understanding of the concept of critical thinking lacks depth of knowledge and is not well grounded in theory as is the literature of adult education. This weakness may also be true in other specialty areas, and represents an opportunity for the field of adult education.

Adult education professionals understand that knowledge banking, behavior modification, and expectations that learners can and will obey are questionable educational approaches for adults, with unrealistic goals-indeed, these are the very tenets upon which adult education principles are founded. The field of adult education possesses a rich resource base of pedagogical frameworks based on critical thinking theory, methods steeped in the field's historical traditions of critical practice. Professional adult education specialists have an opportunity and an obligation to teach members of the health education discipline (and other disciplines) about how adults learn, to promote the use of teaching methods that facilitate learning, and share information with other professionals interested in using critical thinking to enhance educational practice. The field's expertise in critical practice provides a golden opportunity for the professionalization of adult education.

References

AbuSabha, R. (1998). Effective nutrition education for behavior Clarksville, NM: Wolf Rinke Associates.

Anderson, R. M., Funnell, M. M., Barr, P. A., Dedrick, R. F., & Davis, W. K. (199 1). Learning to empower patients: Results of professional education program for diabetes educators. Diabetes Care, 14 (7), 584-590.

Baker, C. R. (1996). Reflective learning: A teaching strategy for critical thinking. Journal of Nursing Education, 3 5 (1), 19-22.

Baskett, H. K. M., Marsick, V. J., & Cervero, R. M. (1992). Putting theory into practice and practice into theory. In H. K. M. Baskett, & V. J. Marsick (Eds.), Professional's ways of knowing: New findings on how to improve professional practice. New directions for adult and continuing education, No. 55. San Francisco: Jossey-Bass.

Boud, D. (1994). Conceptualizing learning from experience: Developing a model for facilitation. In M. Hyams, J. Armstrong, & E. Anderson (compilers), Proceedings of the 35th Annual Adult Education Research Conference (pp. 49-54). Knoxville: University of Tennessee (ERIC No. ED 381616).

Boud, D., Cohen, R., & Walker, D. (1996). Introduction: Understanding learning from experience. In D. Boud, R. Cohen, & D. Walker (Eds.), Using experience for learning (pp. 117). Buckingham, Great Britain: The Society for Research into Higher Education & Open University Press. (Original work published 1993).

Boud, D., & Walker, D. (1996). Barriers to reflection on experience. In D. Boud, R. Cohen, & D. Walker (Eds.), Using experience for learning (pp. 73-86). Buckingham, Great Britain: The Society for Research into Higher Education & Open University Press.

Original work published 1993).

Brammer, L. M. (1992, April). Coping with life transitions. Ann Arbor, MI: ERIC Clearinghouse on Counseling and Personnel Services. (ERIC Digests No. 350527).

Brookfield, S. D. (1997). Assessing critical thinking. In M. A. Leahy & A. D. Rose (Eds.), Assessing adult learning in diverse settings: Current issues and Vproaches. New directions for adult and continuing education, No.75. San Francisco: Jossey-Bass.

Brookfield, S. D. (1995), Becoming a critically reflective teacher. San Francisco: Jossey-Bass.

Brookfield, S. (1994). Tales from the dark side: A phenomenography of adult critical reflection. International Journal of Lifelong Education, 13 (3), 203-216.

Brookfield, S. (1992). Uncovering assumptions: The key to reflective practice. Adult Learning, 3 (4),13-14.

Brookfield, S. D. (1987). Develolping critical thinkers: Challenging adults to explore alternative ways of thinking and acting.. San Francisco: Jossey-Bass.

Brookfield, S. (1985). A critical definition of adult education. Adult Education Quarterly. 36 (1), 44-49.

Clark, M. C., & Wilson, A. L. (1991). Context and rationality in Mezirow's theory of transformative learning. Adult Education Quarterly, 41 (2), 75-91.

Cowen, E. L. (1991). In pursuit of wellness. American Psychologist, 46 (4),404-408.

Dewey, J. (1998), How we think: A restatement of the relation of reflective thinking to the educative process (Rev. Ed.). Boston: Houghton Mifflin. (Original work published 1933).

Dewey, J. (1997). Experience and education: The Kappa Delta Pi lecture series. New York: Touchstone. (Original work published 1938).

Ennis, R. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Baron & R. J. Sternberg (Eds.), Teaching thinking skills (pp. 9-26). New York: W. H. Freeman.

Ennis, R. H. (1962). A concept of critical thinking: A proposed basis for research in the teaching and evaluation of critical thinking ability. Harvard Business Review, 32, (1),81-111.

Erdman, J. (1987). Reflecting on teaching and adult education. Lifelong Learning: An omnibus of practice and research, 10 (8), 18-27.

Freire, P. (1998). Education for critical consciousness (Ed. And Trans.). New York: Continuum. (Original work published 1973).

Friedrich, E. J. (1993, Spring). Radical adult education with older persons [22 paragraphs]. New Horizons in Adult Education [On-line serial], 1(l). Available path: ejoumals.cic.net.joumals/n/newhorizons/horizon7.nI

Fulton, R. D. (1989). Critical thinking in adulthood. Bozeman, MT: Montana State University, The Kellogg Center for Adult Learning Research. (ERIC Document Reproduction Service No. ED320015)

Hawks, J. H. (1992). Empowerment in nursing education: Concept analysis and application to philosophy, learning and instruction. Journal of Advanced Nursing, 17, 609-618.

Higginbotham, J. C. (1992). Necessities for evaluating behavior change in health promotion/disease prevention programs: Knowledge, skill, and attitude. Family &

Community Health, 15 (1),41-56.

Jorgensen, C. M. (1994). Health education: What can it look like after health care reform? 1993 SOPHE presidential address. Health Education Quarterly, 21 (1), 11-26.

Lindeman, E. C. (1926). The meaning of adult education. New York: New Republic.

Lipman, M. (1987). Some thoughts on the foundations of reflective education. In J. B. Baron & R. J. Sternberg (Eds.), Teaching thinking skills (pp. 151-161). New York: W. H. Freeman.

Loughlin, K. (1996). Learning to change: New dimensions. Australian Journal of Adult and Community Education, 3 6 (1), 54-62.

Lowe, P. B., & Kerr, C. M. (1998). Learning by reflection: The effect on educational outcomes. Journal of Advanced Nursing, 27, 1030-1033.

McIntosh, C. (1998). Reflection: A flawed strategy for the nursing profession. Nurse Education Today, 18, 553-557.

Merriam, S. B., & Brockett, R. G. (1997). The profession and practice of adult education: An introduction. San Francisco: Jossey-Bass.

Merriam, S. B., & Caffarella, R. S. (199 1). Learning in adulthood: A comprehensive guide. San Francisco: Jossey-Bass.

Mezirow, J. (198 1). A critical theory of adult learning and education. Adult Education, 3 2 (1), 3 -24.

Norris, S. P., & Ennis, R. H. (1989). Evaluating critical thinking. In Swartz, R. J., & Perkins, D. N. (Eds.), The practitioner's guide to teaching thinking series: Vol. 3. Pacific Grove, CA: Midwest Publications.

Potts, B. (1994, February). Strategies for teaching critical thinking. Washington, D.C.: ERIC Clearinghouse on Assessment and Evaluation. (ERIC Digests No. 385606)

Power, P. W. (1997). Critical thinking skills: Classroom approaches. Rehabilitation Education, 11 (3), 257-263.

Robertson, D. L. (1996). Facilitating transformative learning: Attending to the dynamics of the educational helping relationship. Adult Education Quarterly, 47 (1), 41-53.

Scanlan, J. M., & Chernomas, W. M. (1997). Developing the reflective teacher. Journal of Advanced Nursing, 25, 1138-1143.

Schon, D. A. (1983). The reflective practitioner: How professionals think in action. New York: Basic Books.

Shelton, J. M. (1991). The rise, demise and rediscovery of thinking in the curriculum (Doctoral dissertation, Rutgers University, 1991). Dissertation Abstracts International, 52/12, AAT9213825.

Shor, I. (1996). When students have power: Negotiating authority in a critical pedagogy. Chicago: University of Chicago Press.

Shor, I. (1980). Critical teaching and eve!y day life. Boston: South End press.

Shor, I., & Freire, P. (1987). A pedagogy for liberation: Dialogues on transforming education. South Hadley, MA: Bergin & Garvey.

Wallerstein, N. (1993). Empowerment and health: The theory and practice of community change. Community Development Journal, 28 (3), 218-227.

Wong, F. K. Y., Kembler, D., Chung, L. Y. F., & Yan, L. (1995). Assessing the level of student reflection from reflective journals. Journal of Advanced Nursing, 22, 48-57.