

**Institute for Christian Teaching
Education Department of Seventh-day Adventists**

**A REFLECTIVE TEACHING MODEL:
AN ADVENTIST ASSESSMENT**

by

**Danilo P. Poblete Sr.
Ethiopian Adventist College
P. O. Box 45, Shashamane
Ethiopia**

**380-99 Institute for Christian Teaching
12501 Old Columbia Pike
Silver Spring, MD 20904 USA**

**Prepared for the
24th International Faith and Learning Seminar
held at
Andrews University, Berrien Springs, Michigan, U.S.A.
June 20 - July 2, 1999**

I. INTRODUCTION

Over the years Dewey's theories of reflective thought and the principles of pedagogy it inspired were restated again and again by educators and have taken a revered place in theories of learning and teaching. By the middle of the 1980's researchers confidently claim that reflection (inquiry or critical thinking) is again in "vogue" in teacher education as a useful teaching strategy. It was emphasized that perhaps never before in the history of educational practice has there been a greater push to teach children to think critically. Yet, in spite of this, it was difficult even to achieve definitional clarity to the construct due to a variety of perspective and current conceptualization offered by different authors on what it means to be reflective about teaching (Lasley, 1989; Tanner, 1988:471; Ross & Hannay, 1986:10-11; Sternberg, 1985:194).

Corollary to this, reflective teaching as an inquiry-oriented approach to teacher education is considered an ambiguous term signifying a wide variety of meanings (Tom, 1985; Henderson, 1989). This could be attributed mainly to three reasons: first is the varying perspective authors assume in examining reflection (Lasley, 1989); second are the teachers' education rationales designed to develop habits of inquiry are grounded in diverse images of the teacher, with little consensus on the meaning of particular images, e.g., teacher innovators, teachers as participant observers, teachers as continuous experimenters, adaptive teachers, teachers as action researchers, teachers as problem solvers, teachers as clinical inquirers, self-analytical teachers, teachers as political craftsmen, etc. (Tom, 1985:36; Zeichner, 1983); third, that comparing inquiry-oriented approach to teacher education to alternative views in order to generate a definition of the paradigm limits inquiry as a function of other perspectives which in themselves are not fully developed frameworks (Feiman-Nemser, 1990:271; Tom, 1985:35-36).

In spite of the confusion about what it meant by the use of the term reflective teaching, "the slogan of reflective teaching has been embraced by teachers, teacher educators, and researchers all over the world" (Zeichner and Liston, 1996:4). Zeichner and Liston (1996:4) stressed that somehow those who have jumped in the bandwagon have committed themselves in some version of reflective teaching concept and practice.

Central to Adventist worldview is the belief that "God created man in His own image" (Genesis 1:27). As such man is "endowed with a power akin to that of the Creator - individuality, power to think and to do" (Ed 17). Thus, "it is the work of true education to develop this power, to train the youth to be thinkers, and not mere reflectors of other men's thought" (Ed 17). To be able to do so, students are "directed to the sources of truth, to the vast fields opened for research in nature and revelation" so that they can "contemplate the great facts of duty and destiny" to expand and strengthen their mind so that Adventist "institutions of learning may send forth men strong to think and to act, men who are masters and not slaves of circumstances, men who possess breath of mind, clearness of thought, and the courage of their convictions" (Ed 17-18). Consequently, if reflective teaching as a concept and as a methodology will be of value to Adventist educators in their attempt to attain these objectives, it must be clarified and examined in the context of the Adventist worldview. This essay, therefore, is an attempt to answer the following questions:

1. What is reflective teaching as conceptualized in related literature and studies?
2. How consistent is the concept of reflective teaching to Adventist worldview?

II REFLECTIVE TEACHING

Due to the varying conceptualization of reflective teaching as proposed by various authors and as an inquiry-oriented approach to teacher education, the concept of reflective teaching is presented according to the perspective of its proponents.

Dewey's Model of Inquiry

Dewey proposed his concept of reflective thinking in his book, *How We Think* (1910, 1933). He substituted the word "inquiry" for "reflective thinking" in his later work, *Logic: The Theory of Inquiry* (1938). Inquiry, according to Dewey (1933:9) is the "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion which it tends." Inquiry in this perspective seems to connote something more active and operational than thinking. It refers to the activity engaged in to overcome a situation of doubt to generating knowledge, with provisional and tenuous results, posited in the light of new experience and insight.

To Dewey, reflective activity occurs when a person decides to face a perplexed, troubled or confused situation and prior to a cleared-up, unified and resolved situations. Five phases or aspects of reflective thought are presented. The first consists of suggestions. In this phase the mind leaps forward to a possible solution. The idea of what to do when one finds himself in a hole is a substitute for direct action. It is a vicarious, anticipatory way of acting, a kind of dramatic rehearsal.

The second phase is the intellectualization of the difficulty or perplexity that has been felt (directly experienced) into a problem to be solved, a question for which the answer must be sought. This is affected by noting more definitely the conditions that constitute the trouble and cause the stoppage of action.

The third phase is the use of one suggestion after another as leading idea. Insights into these suggestions correct, modify and expand the suggestions that originally occurred, making the suggestion a definite supposition or hypothesis. This hypothesis is then used to initiate and guide observation and other operations in the collection of factual materials.

The fourth phase is the mental elaboration of the idea or suppositions (reasoning, in the sense in which reasoning is a part, not the whole, of inference).

The fifth phase is testing the hypothesis by overt or imaginative action to give experimental corroboration, or verification, of the conjectural idea (Ross & Hannay, 1986; Dewey, 1933 as edited by Boydston; Dewey, 1933).

Furthermore, Dewey views thinking as a part of a process that culminated in plans of action for solving problems and the actual testing of the plans, with the objective of altering life conditions in improved ways. It involves a look into the future, a forecast, anticipation or a prediction (Dewey, 1933:208 as edited by Boydston). Dewey advocated flexibility in his approach to problem solving:

"The five phases, terminals, or functions of thought that we have noted do not follow one another in a set order. On the contrary, each step in genuine thinking does something to perfect the formation of a suggestion and promote its change into a leading idea or directive hypothesis. It does something to promote the location and definition of the problem. Each improvement in the idea leads to new observations that yield new facts or data and help the mind judge more accurately the relevancy of facts already at hand" (Dewey, 1933:206 as edited by Boydston).

Reflection as a Process of Inquiry

Garman (1986) considers reflection as a formal way of generating knowledge by using stable versions of the experience with more than one round of written interpretations. Reflection on action is seen as a procedure for studying immediate, at-hand events in order to understand them and develop a construal (a conceptual framework) for useful practice. Reflection on action includes: (a) involvement in a scenario (an action) in order to get careful record; (b) recording of the scenario for the purpose of getting stable data; (c) determinations, interpretations and evaluation; (d) formation of educational construal; and (e) confirmation to determine whether the construal has meaning to other practitioners.

Reflection through recollection involves: (a) recall, the process in which the practitioner pictures past events or images; (b) representation of the recalled events through various forms, e.g., written, painting, music, etc., (c) interpretation or finding meanings for the conscious expressions of the past events; and (d) confirmation, the process of determining whether the interpretations make sense. Both forms of reflection are processes of inquiry in the sense that both include written interpretations and confirmation from other sources.

Reflection in action refers to man's unstable, tacit knowledge that drives his actions; it refers to what happens when he is presented with novel puzzles, the resolving of these puzzles in the context of action, the processes that are unwitting, nonlogical and omnipresent in effective practice. Reflection in action unites means and ends, research and practice, and knowing and doing: "practice is a kind of research ... means and ends are framed interdependently ... inquiry is a transaction with the situation in which knowing and doing is inseparable" (Schon, 1983:165 as cited by Munby & Russell, 1989:71-72).

Griffiths and Tann (1992) organized these various categories of reflections into two levels:

1. Reflection-in-action: likely to be personal and private.
 - a. Act-react (rapid reaction)
 - b. React-monitor-react / rework-plan-act (repair)
2. Reflection-on-action: likely to be interpersonal and collegial.
 - a. Act-observe-analyze and evaluate-plan-act (review)
 - b. Act-observe systematically-analyze rigorously-evaluate-plan-act (research)
 - c. Act-observe systematically-analyze rigorously-evaluate-retheorise-plan-act (retheorising and reformulating)

Inquiry-Oriented Paradigm of Teacher Education

Zeichner (1983) believes that at least four paradigms have dominated the discourse of debate in teacher education in recent years. "Behavioristic," stresses specific and observable teaching skills identified in advance; "personalistic," focuses on the development of the psychological maturity of the respective teacher; "traditional-craft," emphasizes the accumulated wisdom of experienced practitioners; and "inquiry," underscores the issue of which educational goals are to be given priority, without ignoring the technical skills needed to achieve these ends.

Zeichner (1983) distinguished inquiry-oriented approach to teacher education from the behavioristic, personalistic and traditional-craft by using two dimensions. The first dimension,

received-reflexive, refers to the degree to which the curriculum of the teachers' education program is specified in advance. Behavioristic and traditional-craft view prospective teachers as passive recipients of that which is to be imparted in a teacher education program (received) while personalistic and inquiry-oriented paradigms view prospective teachers as active participants in the construction of curricular content (reflexive). In the personalistic and inquiry-oriented paradigms the content of the curriculum is not determined in advance. The self-perceived needs and concerns of prospective teachers are given greater weight and the curriculum is viewed as socially constructed.

Zeichner's second dimension, problematic-certain, refers to the degree to which a conception of teacher education views the institutional form and social context of schooling as problematic. In this dimension, behavioristic, traditional-craft, and personalistic paradigms all accept as given the educational and social contexts within which prospective teachers are to work and evaluate the success of teacher education primarily in terms of its effect upon individual education students. Inquiry-oriented paradigm is considered as one that seeks to foster a problematic attitude on the part of prospective teachers toward existing institutional arrangements. Zeichner (1983:7) emphasized that: "the fundamental task of teacher education from this point of view is to develop prospective teachers' capacities for reflective action and to help them examine the moral, ethical and political issues, as well as the instrumental issues, that are embedded in their everyday thinking and practice."

Feiman-Nemser (1990) surveyed five conceptual orientations or sets of ideas about the goals of teacher preparation and the means for achieving them. These are: (a) academic orientation, which focuses on the fact that teaching is primarily concerned with the transmission of knowledge and the development of understanding; (b) personal orientation, which proposes that learning to teach is a transformative process where the teacher learns to understand, develop, re-socialize, and use oneself effectively; (c) critical/social orientation, which highlights the teacher's obligation to students and society by promoting democratic principles of justice and equality and habits of questioning taken-for-granted assumptions about teaching, learning, knowledge, etc.; (d) practical orientation, which endorses the primacy of practice and experience as source of knowledge about teaching and a means of learning to teach; and (e) technological orientation, which endorses the acquisition of principle and practice derived from the scientific study of teaching, preparing teachers who can carry out the tasks of teaching with proficiency or competence.

Feiman-Nemser (1990) considers reflective teaching not as a distinct programmatic emphasis but rather a generic professional disposition. This is supported by the fact that the presented orientations explicitly endorsed the goal of reflection, even though they embody different conceptual orientations.

Tom (1985) developed a set of dimensions to distinguish the varying approaches to inquiry-oriented teacher education. These dimensions are: the arena of the problematic, the model of inquiry, and the ontological status of educational phenomena. He stressed that making a teaching situation problematic means a conscious attempt to suspend judgment about aspect of a teaching situation and instead consider alternatives to establish practice and to raise doubts about what, under ordinary circumstances, appears to be effective or wise practice. Since inquiry-oriented teacher education differs substantially concerning what aspects of the teaching situation ought to be made problematic, it is therefore possible to represent these variations on a continuum. The arena of a problematic dimension continuum arranged the problematic areas according to the degree of comprehensiveness ranging from teaching-learning process as a small arena to the increasingly larger arena of subject-matter knowledge, to the political/ethical principles underlying teaching, and to interrelation of

educational and other societal institutions.

Tom's second dimension, the model of an inquiry dimension, is based on the belief that the arena of the problematic must be explored through a process of inquiry model. This is arranged on a continuum that reflects a joint concern for scope of inquiry (a focus on knowledge versus a focus upon action and knowledge) and for rigor (commonsense inquiry versus disciplined inquiry). One end of the continuum stresses commonsense approaches to deriving knowledge about teaching, while the other end of the continuum stresses the disciplined study of teaching with a concern for the quality of teaching actions. This joint concern for scope and rigor leads to a continuum of inquiry model that varies according to the degree of guidance offered to the teacher educator. Tom (1985:41) stresses that central to the formulation of the model of an inquiry dimension is the idea that both commonsense and disciplined-based models of inquiry have variants which put together the realms of knowledge and action as well as variants which focus on knowledge of teaching.

The third dimension, the ontological status of educational phenomena, is bounded on one end by those who view educational phenomena as natural and is, therefore, relatively stable across time and culture. On the other end are those who view these phenomena as socially constructed. To adapt the view that educational phenomena are natural is to make it stable enough for researchers to discover enduring regularities which in turn serve as knowledge base for which to ground intelligent practice. On the other hand, to adapt the view that educational phenomena are socially constructed is to see the entire educational system as potentially part of the arena of the problematic. Reflective teaching by Zeichner (1983) was classified by Tom (1985) as one that is on the large arena of the problematic; high in guidance for teacher educators, linking knowledge and action through commonsense inquiry; and grounded in the view that educational phenomena are socially constructed.

Henderson's Ethically Based Model of Inquiring. Reflective Practice

According to Henderson (1992), reflective teachers are expert teachers who know their subject matter and are able to teach it well. They must be experts in time management, discipline, psychology, instructional methods, interpersonal communication, and learning theory. Reflective teachers willingly embrace their decision-making responsibilities. They regularly reflect on the consequences of their actions. They are receptive to new knowledge and regularly learn from their reflective experiences.

Reflective practice (Henderson, 1992) is characterized by:

1. Ethics of caring. To care as a teacher is to be ethically bound to understand one's student. The teacher probes gently for clarification, interpretation and contribution from what students' say, whether it is right or wrong. Ethics of caring is practiced through confirmation, which stresses that teachers must take time to listen and help students; dialogue, where teachers and students engage in an honest and open communication as an appropriate and integral tool of learning; and cooperative practice, which stresses that practical personal confirmation and honest dialogue with students can be practiced only by working cooperatively with students, e.g., teachers acting as advisors and counselors in their subject field, not just imparters of knowledge.

2. The constructivist approach to teaching. In addition to basic skills and academic content, reflective teachers consider the relationship between what he is trying to teach and students' past experiences (backgrounds) and a personal purpose (needs and interests). Students are considered as active participants rather than passive recipients during the learning process. Thus, in a constructivist

perspective, learning is a complex interaction among each student's past experiences, personal purposes, and the subject matter requirements.

3. Artistic problem solving. Reflective teachers seek to continuously adapt the curriculum to students' backgrounds, interest and needs; seek new ways to get their students involved; and constantly exercise good judgement, imagination and flexibility to produce quality education.

Reflective teaching is enhanced by an inquiring attitude toward education which involves taking a questioning, pondering, democratic perspective on the personal and public values of teaching and learning. Teachers seek out opportunities to dialogue with students, colleague, and society (Henderson, 1992:6-8).

Eby, Tann and Pollard's Model of Reflective Teaching and Eby's Model of Reflective Action in Teaching

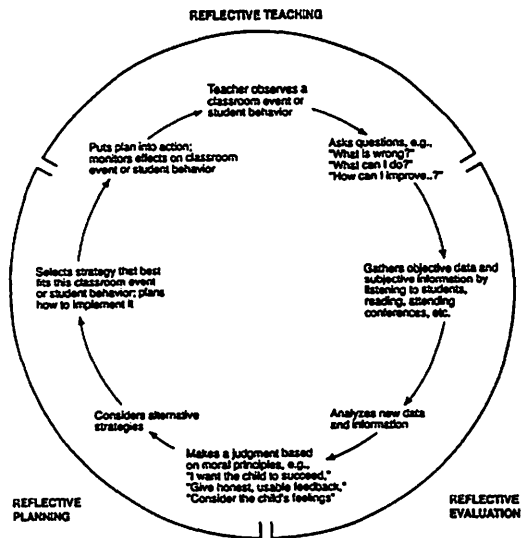
Eby, Tann, and Pollard's model of systematic reflective teaching, as an outgrowth of Dewey's work on reflection, consists of the following four essential characteristics (Pollard & Tann, 1987:4-5; Eby, 1992:12): (a) reflective teaching implies an active concern with aims and consequences, as well as with means and technical efficiency, (b) reflective teaching combines enquiry and implementation skills with attitudes of openmindedness, responsibility, and wholeheartedness, (c) reflective teaching is applied in a cyclical or spiraling process, in which teachers continually monitor, evaluate, and revise their own experience, and (d) reflective teaching is based on teacher judgement, informed partly by self-reflection and partly by insights from educational disciplines.

Inquiry skills considered essential in the process of reflective teaching by Eby, Tann, and Pollard (Eby, 1992:12) model of reflective teaching are: (a) empirical skills - relates to knowing what is going on in the classroom by collecting both objective and subjective data, (b) analytical skills - concerned with obtaining meaningful results from the data through analysis and interpretations and placing them in a framework, (c) evaluative skills - used to make judgements about the educational consequences of the results of enquiry in the light their aims and values, (d) strategic skills - for planning actions and implementation, (e) practical skills - relates to effective action as a result of analysis, and (f) communication skills - relate to the need to be able to communicate ideas with others.

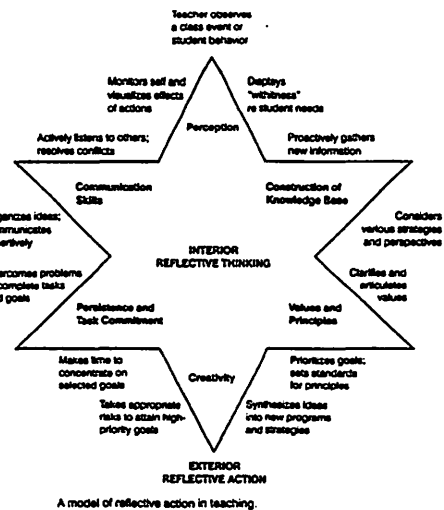
Eby's (1998:14) model of reflective action in teaching is a model of how caring and responsible teachers think and act. Reflection action was used to describe this model to show the synergetic relationship between interior thought processes and exterior actions. Elements of this model include: (a) perceptiveness of students' needs, (b) proactive search for knowledge, (c) clarification of values and principles, (d) creative synthesis to fit the classroom, (e) persistence and problem solving, and (f) good communication skills.

Graphic representations of Eby, Tann, and Pollard's (Eby, 1992:14) model of reflective teaching and Eby's (1998:14) model of reflective action in teaching that illustrates the "cyclical and spiraling process in which teachers continuously monitor, evaluate, and revise their practice" are now presented.

A Model of Reflective Teaching



Eby, Tann, and Pollard's Model of Reflective Teaching



Eby's Model of Reflective Action in Teaching

Zeichner and Liston's Model of Reflective Teaching

Zeichner and Liston's (1996:6) model of reflective teaching emphasizes five key features. These are: (a) examines, frames, and attempts to solve the dilemmas of classroom practice, (b) is aware of the questions the assumptions and values he or she brings to teaching, (c) is attentive to the institutional and cultural context in which he or she teaches, (d) takes part in curriculum development and is involved in school change efforts, and (e) takes responsibility for his or her own professional development.

Zeichner and Liston (1996) examined and highlighted the main features of reflective teaching traditions. This way they distinguished the various forms of reflective teaching and made sense out of the various array of orientations represented in the reflective teaching literature. Five traditions of reflective practice that have guided reform efforts in teaching and teacher education were identified. These are the academic, social efficiency, developmentalist, social reconstructionist, and "generic" traditions. They stated that:

"Each of these traditions (with the exception of the generic approach) identifies a particular emphasis in the content of teachers' thinking. The academic version stresses reflection on subject matter and the representation and translation of that subject matter to promote student understanding. The social efficiency orientation highlights the thoughtful application of teaching strategies that have been suggested by research on teaching. The developmentalist tradition underscores teaching that is sensitive to and builds on students' backgrounds, interests, thinking, and patterns of developmental growth. The social reconstructionist version stresses reflection about the social and political context of schooling and the assessment of classroom actions for their ability to enhance equity,

justice, and more humane conditions in our schools and society. And finally, the generic tradition simply emphasizes thinking about what we are doing without attention to the quality or substance of that thinking. In all, except the last construal of reflective teaching practice, certain priorities are established, priorities that emerge out of particular historical and educational and social philosophies." (pp. 51-52)

Ziechner and Liston (1996) then argued that "good teaching needs to attend to all of the elements that are highlighted by various traditions: the representation of subject matter, student thinking and understanding, research-based teaching strategies, and the social contexts of teaching" (p. 52). They recognized that these elements are not mutually exclusive neither do they take the same form nor receive the same emphasis within each tradition. In addition to these, teaching must be more than a job for which effort is expended and money received. It must be considered as a calling - an endeavor to which a person ought to be passionately committed. Furthermore, they emphasized that: (a) if teachers did not question the goals, values, and assumptions that guided their work and did not examine the context in which they taught, then they were not engaged in good reflective teaching, (b) reflective teaching entailed critical questions about the ends, means and contexts of teaching, (c) good reflective teaching also needed to be democratic in the sense that teachers must be committed to teaching all of the students to the same high academic standards, and (d) much more ... but minimally it must be democratic and self-critical (p. 77).

In Liston and Zeichner's (1996:xii) subsequent book, *Culture and Teaching*, they emphasized that:

"It is our belief that many educational issues engage and affect our heads and our hearts. Teaching is a work that entails both thinking and feeling; those who can reflectively think and feel will find work more rewarding and their efforts more successful. Good teachers find ways to listen to and integrate their passions, beliefs, and judgements"

III. A REFLECTIVE TEACHING MODEL

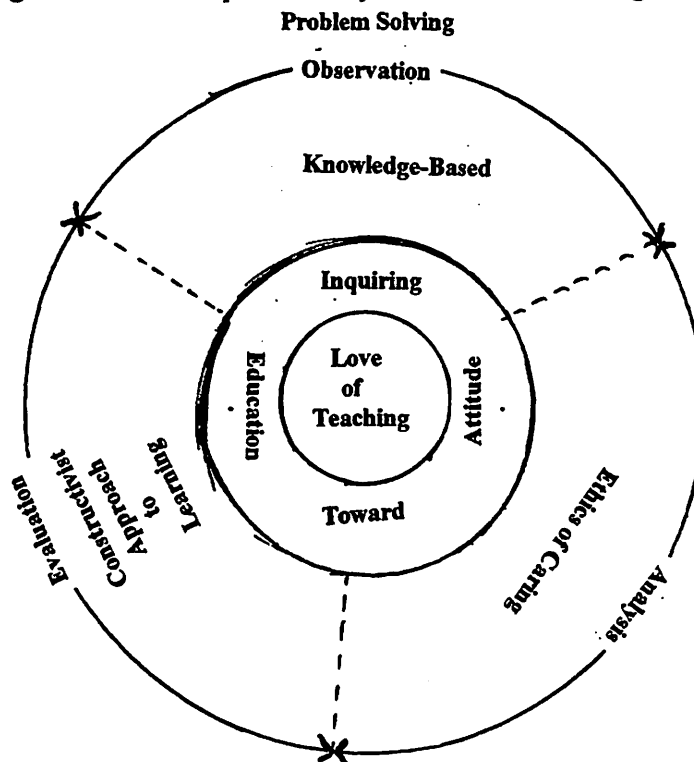
Reflective teaching dimensions in the above given related literature and studies are knowledge base, ethics of caring, constructivist approach to learning, artistic problem solving, and inquiring attitude toward education. The love of teaching dimension is consistent with Ziechner and Liston's (1996) arguments that "teaching is a work that entails both thinking and feeling." It must be considered as a calling - an endeavor to which a person ought to be passionately committed. As such "good teachers find ways to listen and integrate their passions, beliefs, and judgements" in their teaching. Therefore, a six dimensional reflective teaching model is presented. Specific concept indicators for each dimension are identified to clarify in operational terms each dimension. These are summarized in the following table:

REFLECTIVE TEACHING DIMENSION	CONCEPT INDICATORS OF REFLECTIVE TEACHING
I. LOVE OF TEACHING	Refers to teachers' love of teaching where teaching is considered as a calling - an endeavor to which teachers ought to be passionately committed Love of teaching motivated by love for God

<p>II. KNOWLEDGE BASE</p> <ol style="list-style-type: none"> 1. Values and philosophy 2. Knowledge of subject 3. Curriculum knowledge 4. Knowledge of pedagogy 5. Continuing education 	<p>Refers to the body of knowledge and skill that is held in common by practitioners in the field which is undergirded by theory, research, and a set of personal and professional values, beliefs and ethics</p> <p>Teachers' teaching values, beliefs, and philosophy of learning</p> <p>Teachers' flexible mastery and elaborate understanding of the various aspects of the subject matter</p> <p>Teachers' knowledge of the range of methods and programs available for effective teaching</p> <p>Teachers' ways of organizing and presenting content materials that make students able to understand</p> <p>Teachers' continuing personal and professional growth</p>
<p>III. ETHICS OF CARING</p> <ol style="list-style-type: none"> 1. Teachers as role model 2. Dialogue 3. Confirmation 4. Cooperative practice 	<p>Refers to the belief that teachers must care for and seek to understand their students as individuals and as learners with their own unique perspectives</p> <p>Teachers' as role models of intellectual activity and desirable ways of interacting with people</p> <p>Teachers' openness to discuss privately and in confidence anything students want to talk about while maintaining mutual respect</p> <p>Teachers' ways of nurturing student's self-esteem</p> <p>Teachers' ability to work cooperatively with students/parents/peers</p>
<p>IV. CONSTRUCTIVIST APPROACHES TO LEARNING</p> <ol style="list-style-type: none"> 1. Teaching and learning as interactive engagement 2. Teaching and learning as an active construction of meaning 3. Students as active participants in teaching and learning 4. Learning as a continuous reconstruction of students experiences and purposes 	<p>Refers to teachers' ability of helping students actively construct meaning during learning by relating new knowledge to their past experiences and personal purposes.</p> <p>Teachers' ability to guide peer interaction effectively</p> <p>Teachers' ways of encouraging students to construct meaning for themselves</p> <p>Teachers' ways of encouraging active, meaningful learning</p> <p>Teachers' ways of encouraging a participative democratic, educational environment in which people freely raise questions and doubts</p> <p>Teachers' ability to integrate students' life experiences into the classroom</p> <p>Teachers' ability to relate subject matter to students' backgrounds, needs, interests, and purpose</p>
<p>V. ARTISTIC PROBLEM SOLVING</p> <ol style="list-style-type: none"> 1. Observation, reflection and problems identification 2. Trying out one or more solutions 3. Evaluation and further inquiry 4. Puts plan into action 	<p>Refers to the process of imaginatively adapting the curriculum to meet students' background, interests and needs</p> <p>Teachers' ability to reflect on the learning situation and observe carefully what students say and do</p> <p>Teachers' ability to acquire a good empathetic understanding of students' pertinent past experiences and personal purposes</p> <p>Teachers' ability to find a unique combination of ideas, methods, and theories that work best for each student</p> <p>Teachers' ability to judge the effectiveness of his/her methods through students' reactions in class</p> <p>Teachers' willingness to continually review the quality of his/her judgements with the help of research on students' learning achievements</p> <p>Teachers' as action researcher</p>

<p>VI. INQUIRING ATTITUDE TOWARD EDUCATION</p> <p>1. A questioning, pondering, probing, challenging, democratic perspective on the personal and public virtues of teaching and learning</p> <p>2. Curriculum leadership</p> <p>3. Persistence or willingness to engage in inquiry</p>	<p>Involves taking a questioning, democratic perspective on the virtues of teaching and learning and a willingness to challenge any educational discourse</p> <p>Teachers' willingness to inquire regularly into learning patterns of students and reasons for everything that goes on in the classroom</p> <p>Teachers' willingness to critically evaluate the various philosophies and methods they encounter in terms of their own goals, values, and principles</p> <p>Teachers' willingness to challenge existing social and political structure</p> <p>Teachers' as leaders in content selection, organization and evaluation of the curriculum</p> <p>Teachers' as role models in making wise curriculum decisions</p> <p>Teachers' persistence in problem solving</p>
--	---

A graphic presentation of the reflective teaching model is given below. The cyclical and spiraling process of problem solving in which teachers continuously observe/monitor, analyze, evaluate and put plans into action was adapted from Eby, Tann, and Pollard's model. This consists the outermost core of the model. Love of teaching is considered as the core dimension which propels all other dimensions. Inquiring attitude is a generic disposition every reflective teacher must possess to enhance teaching. The interactive nature of knowledge base, constructivist approach to learning, and ethics of caring dimensions is represented by the broken line among them.



A Reflective Teaching Model

IV. ASSESSMENT

The following assessments of each reflective teaching dimension as given in the proposed model are made in the context of a comprehensive review of related studies and the Adventist worldview. Studies are included to give further insights into the nature of each dimension which is missing in the basic conceptualization of reflective teaching by its proponents as previously presented in part two of this essay. These detailed clarification are required to facilitate their assessment in the context of the Adventist worldview.

Love of Teaching Dimension

Adventist educators consider their talent as a gift from God and must therefore be used to serve their fellowmen and God. As faithful stewards, whose hearts are filled with Gods love, they discharge their duty with faithfulness, compassion and love. Love for God and their profession compel them to share God's saving love to their fellowmen.

Love of teaching and teaching as a calling is emphasized in the writings of E. G. White. She said that it is only through "sympathy, faith, and love that men can be reached and uplifted" (Ed. 151). "To the teacher is committed a most important work - a work upon which he should not enter without careful and through preparation. He should feel the sacredness of his calling and give himself to it with zeal and devotion" (CT 229).

On the Knowledge-Based Dimension

Knowledge base refers to a clearly defined body of knowledge and skills that is held in common by practitioners in the field which is undergirded by theory, research, and a set of professional values and ethics. Floden and Buchman's (1990) review of philosophical inquiry in the writings of Dewey (1965), Ziechner (1980), Gage (1978, 1979), Shulman (1986), and others revealed several aspects of teachers' knowledge. These are: (a) knowledge of the subject matter that includes a flexible mastery of and an elaborate understanding of the various aspects of the content domain, (b) pedagogical content knowledge which is composed of understanding of content related to its teachability which includes ways of representing content that makes others able to understand it and insights into what makes the learning of specific aspects of a subject easy or difficult, and (c) curricular knowledge, the knowledge of the range of methods and programs available for teaching particular domains and topics. Furthermore, propositional knowledge was distinguished from case and strategic knowledge. Propositional knowledge refers to the kind of knowledge that directs instructions "consisting of descriptions, theories, principles, and rules of thumb" (Munby and Russell, 1990:116) while case knowledge refers to examples that vividly illustrate propositional knowledge and strategic knowledge is the form of knowledge that guides the teacher in resolving the conflicts that arise in applying principles or norms to certain situations.

Mark's (1990) analysis of interviews of eight fifth-grade teachers resulted in an expanded conception of pedagogical content knowledge consisting of four components: subject matter for instructional purposes, students' understanding of the subject matter, media for instruction of the subject matter, and instructional processes for the subject matter.

On the other hand, education for critical reflection is considered as the process of validating or invalidating students' belief systems which is a direct function of the knowledge structure he employs to make meaning and that there is a direct relationship between the process of thinking and the knowledge with which man thinks. Thus, what and how students learn is affected by the knowledge structures of their teachers who, in turn, are largely dependent upon teacher education programs for grounding and legitimizing of these knowledge structures (Corrigan and Haberman, 1990:195; Armeline and Hover, 1989:42-44). A teacher education program, therefore, that is built on an explicit knowledge base provides graduates of a program with a framework for making informed decisions in the professional workplace and serves as a solid foundation for their career-long professional growth (Galluzzo & Pankratz, 1990; Barnes, 1987).

Five essential attributes of a knowledge-based teacher education program were identified by Galluzzo and Pankratz (1990:7-14). These are:

1. A philosophy or set of beliefs that guides program development and instruction and guides the curricular and instructional decisions of the teachers' education faculty toward achieving the purpose of the program. It is hypothesized that teacher educators communicate their own beliefs to their students even though they are not overtly stated and when consistent with the programs' philosophy, will provide pre-service teachers with a solid foundation in the interpretations of conflicting ideas when they become teachers.

2. An organizing theme or program focus which captures the consensus of faculty beliefs, describes the type of teacher the program faculties seek to graduate, and serves as the key idea that turns a collection of courses into a coherent program. The organizing theme provides a basis on which to design curriculums, guides the faculty in deciding whether new information should be included in the program, suggests to the faculty where new material should be placed in the program, guides the selection of instructional strategies used to prepare teachers, and suggests indicators for program evaluation.

3. A set of program outcomes and evaluation processes consistent with the beliefs and organizing theme. These are explicit descriptions that the teachers' education graduate should possess.

4. A set of source documents or bibliography agreed upon by the faculty that contains the essential knowledge which a graduate program needs to make informed professional decisions. These source documents should represent a complete literature review that summarizes the key concepts from research, theory, philosophy and practice that give the program its definition. In this context, "knowledge base" implies a body of literature that supports the substance and structure of the professional curriculum and guides informed decision making in practice.

5. A program model or series of models that show how the various elements form an integrated program. Program models clarify conceptual relationships, signals serious voids in program design, and point out redundancies.

Galluzzo and Pankratz (1990:12) consider the set of source documents or bibliography agreed upon by the faculty to contain the essential knowledge that a program graduate needs to make informed professional decisions as the most essential of the five attributes.

Vaughman (1984:3-8) indicated that in order to improve the content of a teacher education program the following relevant knowledge and knowledge resources are to be included: (a) teaching effectiveness knowledge which provides guidance on what instructional strategies are most appropriate in different situations and how these strategies can be enhanced; (b) teaching context

knowledge which provides information on human and institutional development within the context of schools as social organizations; (c) change and improvement knowledge which provides references to accumulated studies on “educational change attempts in schools and universities to knowledge of how adults develop and learn and what strategies might be most appropriate to support individual development” (Vaughan, 1984:3).

Knowledge-based themes such as knowledge of subject, pedagogy, curriculum, values and philosophy, and teacher continuing personal and professional growth is consistent with Adventist worldview provided, of course, that it is recognized that “God is the source of all true knowledge” (Ed 16). In 2 Chronicles 1:10 Solomon asked God: “Give me wisdom and knowledge, that I may lead this people....” Therefore, an Adventist teacher knowledgeable in Adventist values and philosophy of education, capable of designing curriculums based on these values and philosophies, able to select content themes within his/her discipline that stress Adventist worldview, with flexible mastery of his/her subject matter, and able to teach his/her subjects well is a mighty force in integrating faith and learning in the classroom and in the whole school environment. “Knowledge is power, but it is power only when united with piety... and vitalized by the power of God” (CPT 38). The more of these true knowledge the teacher has, the better will be his work (CT 229).

On Ethics of Caring Dimension

Ethics of caring refers to the belief that teachers must care for and seek to understand their students as individuals and as learners with their own unique perspectives.

Schrag (1989:171-183) argued that values inevitably enter educational inquiry but such intrusion of values into educational research need not undermine the possibility of reaching objective ‘truth’ about schools. To Schrag (1989) “there is no value free truth about society or schooling, only mutually exclusive truths that vary according to the value perspective taken by the inquirer, a perspective which, itself, vary with the inquirer’s social location” (p. 171).

Historically, one fundamental aim of schooling is the production of a moral citizenry (Noddings, 1988:215). Moral learning in this context is rooted in the transformative tradition where ‘the good teacher is not so much an expert as a role model, a questioning guide, and a teller of stories’ (Bryk, 1988:271).

Traditionally, three approaches are used in practical ethics teaching in order to accomplish this aim of educating people for moral life: applied ethical theory, applied Kohlberg, and values-clarification (Howe, 1986:8). Ethics teaching through applied ethical theory involves the presentation of normative ethical theories, a discussion of their relative strengths and weaknesses, and then uses them in framing a discussion of actual moral problems (Howe, 1986:8). Ethics teaching through Kohlberg’s theory of cognitive moral development centers on resolving what types of moral reasoning are best, higher, and most adequate after the presentation of moral dilemmas that place into conflicts competing moral claims and personal rights of hypothetical individuals (Howe, 1986:9; Green, 1989:200). Values clarification involves the presentation of morally problematic situations, clarification of each one’s values, and encouragement to take position one can act on in the light of the expected consequences of that action (Howe, 1986:10).

Noddings (1988:215) indicated that although the assumption that a fundamental aim of schooling should be the production of moral citizenry and that it is sound and still widely held today, “the hypocrisy inherent in a blend of Christian doctrine and individualistic ideology has created

opposition to traditional forms of moral education” (p. 215). Noddings (1988:215-229) then introduced ethics of caring as more appropriate conception of morality where “love of teaching” is compared to the love of a mother for her child. Byrk (1988:278) refers to this love as “agape”, an altruistic form of love that creates a bond of trust on which the child’s subsequent learning rests. According to Noddings (1988) moral education from the perspective of an ethic of caring involves: (a) teacher models that pattern intellectual activity and desirable ways of interacting with people; (b) a search for problem solution through open and honest communication with students; (c) practice in caring by encouraging quality interaction between students, between teachers and students, and between parents and teachers; (d) confirmation of the cared for by revealing to him an attainable image of himself that is lovelier than that manifested in his present acts.

Howe (1986:6) indicated that for teachers to be able to cope with their function as moral educators they need to exhibit the following six characteristics of the morally educated: (a) appreciation for moral deliberation or the recognition that individuals’ interests might conflict, (b) empathy or the ability to assume the viewpoints and imagine the feelings of others, (c) interpersonal skills, the capacity to sensitively and humanely interact with others, (d) knowledge needed to formulate reasonable strategies and anticipate their consequences, (e) ability to reason through a conclusion and (f) courage to convert conclusion to action.

Ethics of caring which encourage teachers to act as role models before their students and care for and seek to understand their students as individuals and as learners with their own unique perspectives is one of the central themes in the writings of E.G. White. She says that teachers “should see in every pupil the handiwork of God - a candidate for immortal honors. He should seek so to educate, train, and discipline the youth that each may reach the high standard of excellence to which God calls him” (CT 229). When teachers practice Christianity in their lives, with the words of the Lord in their hands, and the love of souls pointing them to constant diligence, they should advance step by step in efficiency (CT 230-231).

On the Constructivist Approach to Learning Dimension

The conceptions of learning which place emphasis on active construction by the learner or the view of intelligence as a reflexive adaptive characteristics of human organisms are not new (Weissglass, 1999:356; Leder and Gunstone, 1990:111). Magoon’s (1977) review of constructivist approaches to educational research indicated that complex behavior like teaching and learning might be best understood as being constructed purposively by teachers and pupils themselves. That teaching and learning cannot be adequately studied without accounting for meaning and purpose. Several developmental theories are also being considered as “constructivist.” Green (1989:31) classified the developmental theories of Kohlberg, Piaget, Reigel, Selma, and Turiel as “Constructivist Theories” which:

“Represent an organismic approach to development in that they place primary emphasis on the synthetic, holistic qualities of individual-environmental interactions and locate the source of development within the dynamic commerce of that interactive engagement. Rather than being innately or environmentally determined, development is viewed as a natural product of progressive organizations and reorganizations that are constructed in the process of adapting to and interacting with the external world” (p. 30).

Taggart and Wilson (1998:8) stated that two basic principles of constructivism are used by

the concept of reflective teaching. These are: (a) what a person knows is actively assembled by the learner, and (a) a learner serves as adaptive function of storage of useful information. A constructivist practitioner, therefore, is seen as one who: (a) believes that all knowledge is constructed or invented by the learner, (b) involves learners in active manipulation of meanings, numbers, and patterns, (b) believes learning is a nonlinear process, (d) provides students with the tools of empowerment - concepts, heuristic procedures, self-motivation and reflection.

Reflective teaching themes such as teaching and learning as an interactive engagement, teaching and learning as an active construction of meaning, and students as an active participant in teaching and learning process are fairly consistent with Adventist worldview. Adventist worldview is balanced and complete, for its foundation is the true source of truth, that is, God. Since God revealed Himself and His will to man through the Holy Scriptures, the Bible is given a primary role in the Adventist curriculum at all levels of education. Consequently, in the process of constructing meanings, students are directed to the source of truth. Jesus says in the Bible, "I am the way, the truth and the life, no one comes to the Father but through me" (John 14:6).

On Artistic Problem Solving Dimension

Artistic problem solving refers to the process of imaginatively adapting the curriculum to meet students' background, interests and needs.

Shuell (1990:102) stated that "of the different metaphors that characterized teaching and learning, a 'problem solving' metaphor is most consistent with current conceptions of meaningful learning." He conceptualized teaching and learning as problem solving. To him a classroom is a group of individuals, each trying to solve fundamental problems: "What can I do to maximize my chances of reaching my goal?"; "What content should be presented today?"; "What teaching methods should be used with this group of students?"; "What is the best way to handle the disruption being caused by those students?" He then defined problem solving as "a goal directed activity that requires an active search for and generation of possible alternative actions and decision-making as to which course of action to follow next." It involves a mental evaluation (critical thinking) of the viability of various alternatives and the verification of the selected alternatives by trying it out to see if it works.

Ross (1989:22) presented five elements of reflective process which is parallel to Sheull's (1990) concept of problem solving. These are : (a) recognizing an educational dilemma, (b) responding to a dilemma by recognizing both the similarities to the situations and the unique qualities of the particular situation, (c) framing and re-framing the dilemma, (d) experimenting with the dilemma to discover the consequences and implications of various solutions, and (e) examining the intended and unintended consequences of an implemented solution and evaluating the solution by determining whether the consequences are desirable or not. Ross (1989:22-23) stressed, however, that the type of dilemmas a teacher will recognize, the way teachers frame and re-frame dilemmas, and the judgments teachers make about the desirability of solutions to problems depend upon the development of several attitudes and abilities and their willingness to assume responsibility for their decisions and actions. Thoughtful re-considerations of all that happens in a classroom with an eye for improvement, willingness to consider a new evidence, willingness to admit the possibility of error, ability to view situations from multiple perspectives, ability to search for alternative explanations of classroom events, and ability to use evidence in supporting or evaluating a decision is some of these attitudes and abilities.

Sternberg and Davidson (1992:1037-1038) stated that: (a) the character of an individual and the situation determine one's ability to solve problems, (b) storing in memory the critical elements of the problem and the relationship between these elements is a critical process in solving problems, (c) expert problem solvers spend more time in planning the steps and resources to use in solving the problem, taking into consideration ways that will facilitate task performance and how exhaustively the process will be executed, and (d) continuous monitoring of and control over what has been done, what is being done, and what needs to be done in solving problems is required to determine whether the goal set in solving a problem has been reached.

Several studies and literature focused on collaborative action research as an interactive process wherein practitioners and researchers work together to frame research questions, collect data and then analyze these data to answer the framed questions. It offers practitioners an opportunity to become more responsive to their own problems and needs and develops mechanisms for affecting continuous self-improvement. The researcher gains the opportunity to study the everyday context of a school. Teacher-researcher collaborative action models emphasize teachers' solving the problems they identify. This type of collaborative effort allows the teachers as reflective practitioners to: (a) focus on their own learning and where the impact of that learning is on real classrooms; (b) foster changes in thinking and problem solving skills, as well as more conscious decision making and new experiences in collegial networking among teachers; (d) foster the enhancement of professionalism for the classroom teacher; (e) pursue teachers' goal of lifelong learning in a productive way; and (f) enhance the opportunities for teachers to support one another in professional growth endeavors as well as to be expert on what is effective in their own setting (Stevens, 198:203-206; Allan & Miller, 1990:196-197).

In Henderson's (1992:49) view, educational problem techniques vary from teacher to teacher; however, most teachers follow a four-step process of problem solving. These include: (a) reflecting on the learning situation to identify factors most important in a particular case, (b) identifying the problem, (c) trying out one or more solutions, and (d) engaging in further inquiry. Henderson's (1992:53-54) modification of Donald Schon's (1988) four-step process of academic problem solving includes: (a) observation of what students say and do, (b) think that what student say and do as puzzles teacher need to solve, (b) inventing bridges between your understanding and the subject matter, and the puzzle is solved when connection is made between students' naive knowledge and the privileged knowledge of the subject matter.

Essentially, therefore, educational problem solving in reflective teaching view includes: (a) observation and reflection, (b) problem identification based on observation and reflection, (c) trying out one or more solutions, and (d) evaluation and further inquiry. It is considered a cyclic process of inquiry from observation to evaluation. This could best be done through action research which is considered as a form of systematic self-reflective problem solving.

Adventist philosophy of education aims to develop a balanced personality, that is, the development of the mental, physical, social and spiritual powers. In harmony with this, Adventist educational system combine the study of books with manual labor, wholesome social activities, and the study of God's word and prayer.

To develop the mental powers in order to solve life's problems, no other study could develop the intellectual strength and enlarge and expand the mind than the study of the Bible. Ellen G. White says, "let every student take his Bible and place himself in communion with the Great Teacher. Let the mind be trained and disciplined to wrestle with hard problems in the search for divine truth

Through the study of His word their mental powers will be aroused to earnest activity. There will be an expansion and development of the faculties, and the mind will acquire power and efficiency” (COL 143-144).

It is through a process of systematic “research in nature and revelation” that students can be directed to the “sources of truth” so that they will have “clearness of thought,” be “strong to act,” and have the “courage of their convictions” (Ed. 17-18). It is, therefore, a reflective teacher who models a problem solving ability through the research process combined with the knowledge of God’s word that will be able to guide students to do similar activities more effectively.

On Inquiring Attitude Toward Education Dimension

Inquiring attitude toward education involves taking a questioning, democratic perspective on the virtues of teaching and learning and a willingness to challenge any educational discourse.

Attempts have been made to promote the notion of mentor-teacher as inquiring professionals. The term mentor has been used to identify experienced teachers who act as educators, counselors, confidants and even parents to students. It is argued that teacher-mentors’ disposition toward further learning and professional growth can be promoted by their ability to engage in systematic inquiry into classroom learning (Howey, 1988:209-313) or their willingness to challenge any educational discourse (Henderson, 1992:171).

Adler and Goodman (1986) noted that technocratic perspective which emphasizes individualism, efficiency, rationality and objectively dominated educational thought in the twentieth century. While school systems promote the use of pre-determined instructional programs, teachers merely assume the role of manager or technician of the pre-determined curriculum and do not question curricular decisions. This leads to the acceptance of teaching practices as “embodying the teaching domain, to be accommodated and adjusted too rather than revised or even restructured” (Beyer, 1984:37).

Critical theorists now promote a critical perspective which “fosters a questioning attitude toward teaching, learning, knowledge, the curriculum, and toward the role of schools in society (Adler and Goodman, 1986:4). Adler and Goodman (1986:4) reasoned that: (a) good teaching involves the ability to reflect about oneself, children, content, and the relationship between school and society, and (b) the aim of teaching is an emancipatory one – for people to question and analyze and to aim toward transforming social structures and practices into those that are more equitable and just.

The reflective teaching themes permeating the inquiring attitude toward education dimensions are fairly consistent with Adventist worldview although in general Adventist seems to be very hesitant in challenging existing public virtues of teaching and learning. Yet, Mrs White says that “there is a great need of elevating the standard of righteousness in our schools, of giving instruction that is after God’s order. Should Christ enter our institutions for the education of the youth, He would cleanse them as He cleansed the temple, banishing many things that have a defiling influence” (CT 25). A reflective Adventist teacher possessing an inquiring attitude toward education can be a powerful force in the improvement of our school system whether it is the physical setting, aesthetic elements, social and religious atmosphere, etc.

IV CONCLUSION

Reflective teaching model found in the literature reflects six dimensions. These are: love of teaching, knowledge base, caring, problem solving, constructivist, and inquiring attitude. These chosen dimensions were considered fairly consistent with the Adventist worldview.

BIBLIOGRAPHY

A. Books

- Dewey, J. 1910. *How We Think*. Lexington, MA: D.C. Heath and Co.
- Dewey, J. 1933. *How We Think*. Lexington, MA: Heath.
- Dewey, J. 1938. *Logic: The Theory of Inquiry*. New York: Holt, Rinehart and Winston.
- Eby, Judy W. 1992. *Reflective Planning, Teaching, and Evaluation for the Elementary School*. New York, Macmillan Publishing Company.
- Eby, Judy W. 1998. *Reflective Planning, Teaching, and Evaluation K-12*. Upper Saddle River, New Jersey: Prentice-Hall, Inc.
- Feiman-Nemser, Sharon. 1990. "Teacher Preparation: Structural and Conceptual Alternatives", In *Handbook of Research On Teacher Education*, ed. W. Robert Houston. New York: Macmillan Publishing Company, Inc.
- Green, Michael. 1989. *Theories of Human Development*. Englewood Cliffs, New Jersey: Prentice Hall.
- Henderson, James G. 1992. *Reflective Teaching: Becoming an Inquiring Educator*. New York: Macmillan Publishing Company.
- Liston, Daniel P and Zeichner, Kenneth M. 1996. *Culture and Teaching*. Mahwah, New York: Macmillan Publishing Company.
- Pintrich, Paul R. 1996. *Educational Psychologist*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers, Vol. 31, No. 3/4.
- Sternberg, Robert J. and Davidson, Janet E. 1992. "Problem Solving", *Encyclopedia of Educational Research*, ed. Marvin C. Alkin. New York: Macmillan Publishing Company.
- Taggart, Germaine L. and Wilson, Alfred P. 1998. *Promoting Reflective Thinking in Teachers: 44 Action Strategies*. Thousand Oaks, California: Corwin Press, Inc.
- Zeichner, Kenneth M. and Liston, Daniel P. 1996. *Reflective Teaching: An Introduction*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- White, Ellen G. 1903. *Education*. Mountain View, California. Pacific Press Publishing Association.
- White, Ellen G. 1943. *Counsel to Parent, Teachers, and Students*. Pacific Press Publishing Association
- White, Ellen G. 1990. *Christ Object Lesson*. Better Living Publication.

B. Periodicals

- Allan, Karen Kuelthau and Miller, Margery Staman. 1990. "Teacher-Researcher Collaboratives: Cooperative Professional Development", *Theory Into Practice*, (Summer 1990), Vol. XXIX, No. 3:196-202.
- Adler, Susan and Goodman Jesse. 1986. "Critical Theory as a Foundation for Methods Courses", *Journal of Teacher Education*, (July-August 1986), 2-7.
- Beyer, Landon E. 1984. "Field Experience, ideology, and the Development of Critical Reflectivity" *Journal of Teacher Education*, (May-June 1984), Vol. XXXV No. 3.
- Bryk, Anthony S. 1988 and Raundenbush, Stephen W. "Toward a More Appropriate Conceptualization of Research in School Effects: A Three-Level Hierarchical Linear Model" *American Journal of Education*, (November, 1988).
- Floden, Robert E. and Buchman, Margaret. 1990. "Philosophical Inquiry in Teacher Education", *Handbook of Research on Teacher Education*, ed. W. Robert Houston. New York: Macmillan Publishing Company Inc.
- Galluzzo, Gary R. and Pankratz, Roger S. 1990. "Five Attributes of a Teacher Education Program Knowledge

- Base", *Journal of Teacher Education*, (September-October 1990), Vol. 41, No. 4:7-14.
- Garman, Noreen B. 1986. "Reflection, the Heart of Clinical Supervision: A Modern Rationale for Professional Practice", *Journal of Curriculum and Supervision*, Fall 1986, Vol. 2, No. 1:23-41.
- Goodman, Jesse. 1988. "The Political Tactics and Teaching Strategies of Reflective, Active Preservice Teachers", *The Elementary School Journal*, Vol. 89, No. 1:23-41.
- Griffiths, Morwena and Tann, Sarah. 1992 "Using Reflective Practice to Link Personal and Public Theories", *Journal of Education for Teaching*, Vol. 18, No. 1:69-84.
- Henderson, James G. 1989. "Positioned Reflective Practice: A Curriculum Discussion", *Journal of Teacher Education*, (March-April 1989), 10-14.
- Howe, Kenneth R. 1986. "A Conceptual Basis for Ethics in Teacher Education", *Journal of Teacher Education*, (May-June 1986), 5-13.
- Howey, Kenneth. 1988. "Mentor-Teachers as Inquiring Professional", *Theory Into Practice*, Vol. XXVII, No. 3.
- Lash, Fredrick B. 1988. "Problem Solving and the Development of Expertise in Management", In *RIE 1989 Abstracts*, A Paper Presented in the Annual Meeting of the American Psychological Association (96 the Atlanta, GA, August 12-16, 1988).
- Lasley, Thomas J. 1989. "Editorial", *Journal of Teacher Education*, (March-April 1989), Vol. XXXX, Number 2.
- Marks, Rick. 1990. "Pedagogical Content Knowledge: from a Mathematical Case to a Modified Conception", *Journal of Teacher Education*, (May-June 1990), Vol. 41, No. 3:3-11.
- Munby, Hugh and Russel, Tom. 1989. "Educating the Reflective Teacher: An Essay Review of Two Books by Donald Schon", *Journal of Curriculum Studies*, Vol. 21, No. 1:71-80.
- Neely, Ann M. 1986. "Planning and Problem Solving in Teacher Education", *Journal of Teacher Education*, (May-June 1986), 29-33.
- Noddings, Nel. 1988. "An Ethic of Caring and Its Implications for Instructional Arrangements", *American Journal of Education*, (February 1988), 215-230.
- Rosenholtz, Susan J. 1985. "Effective Schools: Interpreting the Evidence", *American Journal of Education*, (May 1985), 352-388.
- Ross, Wayne E. and Hannay, Lyne M. 1986. "Toward a Critical Theory of Reflective Inquiry", *Journal of Teacher Education*, (July-August, 1986), 9-15.
- Schrag, Francis. 1989. "Values in Educational Inquiry", *American Journal of Education*, (February 1989).
- Shuell, John J. 1990. "Teaching and Learning as Problem Solving", *Theory Into Practice*, (Spring 1990), Vol. XXIX, No. 2:102-108.
- Smyth, John. 1989. "Developing and Sustaining Critical Reflection in Teacher Education", *Journal of Teacher Education*, March-April 1989.
- Sternberg, Robert J. 1985. "Teaching Critical Thinking, Part I: Are We Making Critical Mistakes?" *Phi Delta Kappan* 69, (November 1985), 194-198.
- Stevens, Kelline W. 1986. "Collaborative Action research: An Effective Strategy for Principal Inservice", *Theory Into Practice*, Vol. XXV, No. 3:203-206.
- Tanner, Laurel N. 1988. "Observation The Path Not Taken: Dewey's Model of Inquiry", *Curriculum Inquiry*, 18:4.
- Tom, Alan R. 1985. "Knowledge Resources for Improving the Content of Preservice Teacher Education", *Journal of Teacher Education*, Sept.-Oct., 1985.
- Vaughman, Joseph C. 1984. "Knowledge Resources for Improving the Content of Preservice Teacher Education", *Journal of Teacher Education*, (July-August 1984), Vol. XXXV, No. 4:308.
- Weisglass, Julian. 1990. "Constructivist Listening for Empowerment and Change", *The Educational Forum*, (Summer 1990), Vol. 54, No. 4.
- Zeichner, K. M. 1983. "Alternative Paradigms of teacher Education", *Journal of Teacher Education*, (May-June 1983), Vol. XXXIV, No. 3:3-9.