

COMPARING THE THEORIES AND PRACTICES OF TYLER AND DEWEY
WITH EXPERT AND EFFECTIVE TEACHING OF TODAY

by

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(Under the direction of WILLIAM G. WRAGA)

ABSTRACT

The extent to which the fields of effective and expert teaching and the past scholarship on teaching overlap sufficiently justify further exploration of these similarities. John Dewey and Ralph Tyler established a theoretical foundation for expertise in teaching that can contribute to the contemporary literature about effective and expert teaching.

The literature of effective and expert teaching and John Dewey and Ralph Tyler writings about teaching were studied to determine if effective and expert teaching research was validated, and even improved by the theories and practices advocated by Dewey and Tyler. The resources for the literature review included the Reader's Guide to Periodical Literature, a chapter by Axtelle and Burnett (1970) in Guide to the Works of John Dewey, John Dewey's collected works index, the Educational Index, Teacher's College Record, and bibliographies and reviews of Dewey's and Tyler's work. The Reader's Guide to Periodical Literature served as a resource in order to span the years prior to those listed in the Educational Index. After a bibliography was created from these sources, an analysis of Dewey and Tyler's concepts of teaching was conducted.

This study found such a historical perspective can inform contemporary studies of effective and expert teaching. Similarities among Dewey, Tyler, and effective and expert teaching showed the importance of classroom management and discipline, meaningful lessons, a professional spirit, teaching adaptability and flexibility, and student evaluation. However, important areas of research were overlooked by current effective and expert teaching and should be considered in the future. These

specific areas from the analysis of Dewey and Tyler's writings included implementing problem-solving techniques, integrating ethical and moral teaching methods, focusing on students' interests and needs, utilizing multiple forms of student evaluations, and remaining cognizant of students' entire school experiences.

INDEX WORDS: John Dewey, Effective Teaching, Expert Teaching, Ralph Tyler

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DEDICATION

To Gregory B. Smith, Mr. and Mrs. Edsel Harrell,
Mrs. Ann Smith

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CHAPTER 1
COMPARING EFFECTIVE AND EXPERT TEACHING
WITH THE THEORIES AND PRACTICES
OF DEWEY AND TYLER

Background of the Problem

As educators search for the latest trend, cyclical fads continue to present the same problems. Such reforms as back to basics, the open classroom, contracting with students, a priority on science education, and child-centered education have been tried and tried again without regard to past experiences. Schools are being pressured to be accountable for improving. The need for reform may be due to the widespread pessimistic reports of noted leaders of today. Elam (1995) gave examples of some of these statements:

1. President Bush (America 2000) said, "We've moved beyond the days of issuing reports about the dismal state of our schools" (p. 8).
2. Edward Fiske (Smart Schools, Smart Kids: Why Do Some Schools Work) stated, "It's no secret that America's public schools are failing" (p. 8).

3. Lauren Resnick (opening session of the annual conference on assessment sponsored by the American Educational Research Association, former president of AERA) said, "We all know how terrible we are" (p. 8).

However, the Phi Delta Kappa/Gallup polls have examined the public confidence in the schools over the last 26 years (Elam, 1995). In recent years the "parents grade the schools their own children attend just short of a B, and they have done so every year since 1986" (Elam, 1995, p. 9). Elam stated that the American public is "almost universally supportive of changes that hold even faint promise of improving the public schools' capacity to meet sound education goals" (p. 32). The report also showed a trend that the public is willing to spend more on education in order to make the necessary changes (Elam, 1995).

But perhaps past and present research in the educational field should be revisited before attempting to create new and improved versions of education. It is well to heed Dewey's advice in the 1920's to study the past before creating a new educational system. Dewey recommended that our focus in education should be what can we learn from the "old experience" that will tell us about "developing a

new and improved experience" (as cited in Tanner, 1983, p. 42).

The "old experience" for purposes of this study will include the study of Dewey and Tyler's ideas about ideal teaching over the past century. Curriculum issues will be addressed with instructional issues when the need arises. The "new experience" will be represented by information gained from the research of expert teaching and effective teaching. While the study of teaching and instruction in general has been documented for over a hundred years, the study of expert teaching and effective teaching has gained momentum only in the last few decades.

Expert Teaching

Pedagogical knowledge has evolved beyond the position that there are generic teaching skills (Berliner, 1991, p. 147). David Berliner and others (Carter, Sabers, Cushing, Pinnegar, & Berliner, 1987; Carter, Cushing, Sabers, Stein, & Berliner, 1988) have been instrumental in bridging the gap between the study of expertise, as rooted in psychology, and expertise in education. Berliner's studies have gone beyond studying what makes a teacher effective. He now conducts research to understand "why teachers do as they do" (Brandt, 1986, p. 1).

In the 1980's, expert teaching research by Berliner and others (Carter et al. 1987; Carter et al. 1988) included adapted stages of expertise as described by Dreyfus and Dreyfus (1986). In addition, research of experts has provided a basis for expert pedagogy studies. A noted example was de Groot's (1965) study of expert chess players noting "that the perception, memory, organization of knowledge, and decision-making process of expert chess players were different than those of the less expert player" (as cited in Berliner, 1991, p. 145). Hence, expert teaching research (Berliner, 1986, 1991, 1994; Livingston & Borko, 1989; Carter et al 1987, 1988; Housner & French, 1994) may now include information gained from studies of experts (de Groot, 1965; Chi, Feltovich, & Glaser, 1981) and effective teaching (Brophy, 1973, 1981; Evertson & Emmer, 1982; Peterson & Fennema, 1985).

Expert teaching research includes how teachers think and what they think, instead of focusing on isolated behaviors in the classroom. Berliner (1991) described an expert teacher as not only possessing "the perceptual ability of the proficient performer, but (one that) can respond intuitively as well. They appear to respond effortlessly, smoothly, and appropriately" (p. 148). Berliner also described an expert as having "no fixed ways

of operating because they are guided by the context they are in, using experience as their guide" (p. 153).

The study of expert teaching includes the knowledge base and personality characteristics, as well as the beliefs of teachers. Not all teachers become experts, but an expert teacher operates in a seemingly effortless manner that is based on intuition and subconscious decisions. The exact definition is still being revised, but a prerequisite to this stage of expertise is at least ten years of experience.

Some of the same characteristics of expertise in general may be applied to expert teaching. The extent of this knowledge base and skills is what differentiates the expert from the novice. However, as noted by Wright & Bolger (1992), "Any conclusions about the skills of experts must take domain into account" (p. 16). A more detailed description of an expert's characteristics will follow. Experts have an extensive and up-to-date basis for content knowledge. This knowledge base is "necessary, but not sufficient" for judging one to be an expert (Wright & Bolger, 1992, p. 16). Experts' knowledge also includes many patterns that are called upon when faced with similar situations. But the difference between the expert and the novice is that the expert learns to recognize the patterns of high significance (Bereiter & Scardamalia, 1993). This

attention to what is relevant is also related to the amount of knowledge one has accumulated (Wright & Bolger, 1992).

There is also a need for experts to solve problems. As stated by Bereiter & Scardamalia (1993), "The career of the expert is one of progressively advancing on the problems constituting a field of work, whereas the career of the nonexpert is one of gradually constricting the field of work so that it more closely conforms to the routines the nonexpert is prepared to execute" (p. 11). But the set of characteristics describing the expert teacher includes more than the ability to solve problems.

The knowledge that experts have is useful in solving problems. When there is sufficient knowledge, then the problem solving for experts turns from recognizing to that of analyzing (Wright & Bolger, 1992). "The key feature driving human problem solving when the goal is not well defined is balancing search with evaluation. Evaluation demands knowledge" (Ericsson & Smith, 1991, p. 41).

In studying expert teachers, Bents & Gardner (1992) found that these teachers were able to make adjustments to the planned lesson to incorporate other topics that fit the students' interests. Teachers were able to establish alternatives and identify many options. They were able to anticipate and plan for problems.

In a study by Campbell (1990), expert teachers were also found to have a sense of independence. They had a strong sense of mission and were continually seeking ways to improve their teaching. The students' emotion and instructional dimensions were all combined in the holistic view of the expert teacher.

Ornstein (1995) summarized the description of expert teachers. Expert teachers were likely to refrain from making judgments about students, analyzed student cues from an instructional viewpoint, made classrooms their own, engaged in intuitive and improvisational teaching, and understood and knew their students. They tended to be more reflective and willing to admit their mistakes. These expert behaviors were performed fluidly and without effort in various situations (Ornstein, 1995).

Effective Teaching

The term effective teacher evolved from an effort to move educational research out of the laboratory and into the classroom. During the 1950s, behavioral research moved from the psychological laboratories to the classrooms. In the 1970s, educational researchers tried to find patterns of effective teaching from observations of ordinary teaching (Walberg, 1991). Ornstein (1991) commented about the host of measuring instruments that have been employed to study

teaching with "few facts concerning teacher effectiveness (having) been established" (p. 63).

Rosenshine (as cited in Walberg, 1991) described effective teachers as having the traits of clarity, task orientation, enthusiasm, and flexibility, as well as being structured and using students' ideas. Other variables that have been used to measure teacher effectiveness were scores on achievement tests along with a secondary variable, classroom management (Ornstein, 1991). However, teachers have teaching styles that may not directly exhibit these principles (Ornstein, 1991). Ornstein warned that effective teachers may also have characteristics of being democratic, creative, or enthusiastic that may be overlooked by teacher effectiveness models.

Comparison of Effective Teaching and Expert Teaching

But what is the difference between an effective teacher and an expert teacher? Many expert teachers are also effective teachers, while the reverse may not be true. Berliner (1991) stated, "The notion that teachers are alike, from the time they leave their college of education to the end of their career, seemed to be implicit in research on teaching before the 1980's" (p. 148). However, expert teaching may include many of the same strategies of effective teaching, but the area of expertise goes beyond

teaching objectives and time-on-task types of skills (see Table 1). According to Bereiter and Scardamalia (1993), "The experienced nonexperts have been devoting their efforts to reducing everything to routines...while the experts are out there breaking new ground in their efforts to address problems at increasingly complex levels" (p. 123).

Table 1

Comparison of Expert Teaching and Effective Teaching

Expert Teaching	Effective Teaching
Knowledge Base, Problem Solving Skills	Teaching Skills (Examples): Clarity, Task Orientation,
Personality Characteristics	Classroom Management
Beliefs	

Education Theorists: John Dewey and Ralph Tyler

The concepts of expert teaching closely paralleled some of John Dewey and Ralph Tyler's concerns with teaching and instruction. Teachers and teaching were at the center of Dewey's and Tyler's proposals. These two educators were instrumental in changing the path for today's curriculum and instruction theorists and practitioners.

Dewey and Tyler were selected for this study due to their notoriety in the field of curriculum and instruction. As Tanner (1997) suggested, "Intellectual development,

social development, and curriculum integration were approached seamlessly...in Dewey's plan" (p. 25). Tyler and Dewey were described by historians as having "affected theory, content, materials, and instruction through their research findings, consulting, speaking out in public life, and teaching. They were translators of social change...they believed in education as a science and a basis for conducting educational practice" (Jackson, 1997, p. 230).

Rubin (1994) described Tyler as "an activist with a profound belief that demonstration and example are more powerful than ideas that are merely scripted - he harnessed his theorems to social engineering and participated in an astonishing number of watershed events" (p. 784). Tyler's (Rubin, 1994) many accomplishments included the following: university examiner and dean of social sciences at the University of Chicago, his Eight-Year Study, founding role in the National Academy of Education, director of the Center for Advanced Study in the Behavioral Sciences at Stanford University, his part in the formulation of the Association for the Evaluation of educational Achievement, and his service as consultant to five U.S. presidents. These achievements are only a partial listing in addition to his famous rationale on curriculum development.

Dewey was a noted philosopher, psychologist, and educator. Due to the worldwide interest of his writings, hundreds of books were written about his career. Dewey himself wrote over forty books and authored over seven hundred articles (Dykhuizen, 1973). For the years between 1900 and 1967, the Center for Dewey Studies listed 327 separate translations into 35 languages.

His many accomplishments included: Chairman, Department of Philosophy, Psychology, and Pedagogy, University of Chicago; Founder - Dewey Laboratory School, University of Chicago; President of the American Philosophical Society; Professor emeritus of philosophy in residence, Columbia University; charter member, first teacher's union; and author of volumes of writings. As Cahn (1997) described Dewey, he "is the only thinker who has constructed a philosophy of education comparable in scope and depth to that of Plato" (p. 274).

A democratic education by Dewey's standards included training in science, art, history, inquiry, and communication (Westbrook, 1991). Dewey also saw the need for students to be trained as leaders. It was vital that the theoretical work of the universities keep in touch with the practical demands of education. In a letter to Alice Dewey, John Dewey showed his concern for the problems in

education. He wrote, "I sometimes think I will drop teaching philosophy directly, and teach it via pedagogy" (p. 95).

Dewey wanted to eliminate the gap between experience and the course of study (Westbrook, 1991). He called upon teachers to "psychologize" (p. 101) the curriculum by creating an environment that confronted the problems of the world. Teachers at the Dewey School were expected to arrange the classroom into an environment of the "right social growth" (p. 109). With the students' growth in mind, Dewey (Dykhuisen, 1973) stated, "The child's present abilities, interests, likes, and dislikes, and the present and future demands of the child's external world be taken into account when selecting subject matter, organizing the school, and adopting methods of discipline and responsibility" (p. 278).

In the foreword to Dewey's Laboratory School: Lessons for Today, (Tanner, 1997) Philip Jackson mentioned the "striking contrasts between practices that characterized the Dewey school and those being carried on in today's schools and classrooms" (p. ix). Many of today's educational ideas such as "teacher autonomy, multicultural education, character education and more...pale in comparison when

placed beside the way Dewey and his staff handled similar issues almost a century ago" (p. ix).

It should also be noted that Tyler was acknowledged in the same book as sharing his ideas and insights about Dewey. According to Tanner (1997), "Tyler was impressed with how Dewey and the teachers tried to identify and build on children's assets and he saw this as something we need to do. I am impressed with how [his] life was an extension of Dewey's" (p. xv).

Tyler and Dewey promoted better situations in schools and led educators to consider how to teach instead of only focusing on the content of the lesson. Tyler participated in workshops where teachers could try various methods and resolve problems that were unique to their school. He realized that each school could implement change based on their needs only if those participating were active in planning the changes.

Tyler's Basic Principle's of Curriculum and Instruction, which included four questions for developing curriculum and planning instruction, became the basis of Tyler's rationale. These questions became known as Tyler's Rationale. However, his rationale later became associated with learning objectives, which was only one part of curriculum planning. In an interview by Rubin (1994), Tyler

referenced a comment from Dewey, "Students are limited not only by intellects but by the experiences that expand their intellects" (p. 789).

It is probably no coincidence that Tyler was familiar with John Dewey's ideals and theories for education. The two men, though having varied backgrounds, had similar ideas about education and the importance of the individual learner. Tyler (Tanner, 1997) was impressed "with how Dewey and the teachers tried to identify and build on children's assets" (p. xv) and saw this as something for all schools to do.

By building on students' past experiences and interests, Dewey placed the responsibility of learning in the educators' hands. Teachers were treated as professionals and were given authority to plan, implement, and change the curriculum, but always with the students' individual needs as the focus. Dewey's theories were unique in that his approach to education included studies from three major fields: philosophy, psychology, and sociology (Tanner, 1997).

Dewey and Tyler sought a new approach that included meeting the needs of students and making education meaningful. Both saw the importance of including students and teachers as active participants in learning. Their

ideas came at a time when traditional teaching meant largely studying the classics and memorizing basic facts.

Dewey, Tyler, and Expert Teaching

Many of the same principles advanced by Dewey and Tyler were evident when describing the practice of expert teachers. For example, expert teachers continually make adjustments to their lesson plans, while revealing extensive patterns of knowledge. Their lessons relate the past to the present as a reflection of the current society. In addition, their teaching style included a sense of caring for the student, understanding the needs of every student, and adapting without being overwhelmed by outside pressures. Dewey and Tyler also valued reflection (Rubin, 1994; Tanner, 1997), and encouraged teachers to consider ways to constantly evaluate their lessons. The process of reflection and evaluation was standard practice for Tyler and Dewey.

Dewey and Tyler viewed curriculum as a means for improving education. They were also solving problems and searching for better ways of teaching. Dewey saw curriculum as a means for solving real-life problems and Tyler viewed curriculum as a way to attack the problems of education. Problem solving was also evident in expert teaching (Carter, Sabers, Cushing, Pinnegar & Berliner, 1987).

For both Dewey and Tyler, learning was based on experiences. Just as expert teachers relied on relevant information, the students' experiences were a way of making the education meaningful and relevant. Tyler (1949) defined learning as that which "takes place through the experiences which the learner has; that is, through the reactions he makes to the environment in which he is placed" (p. 63). The role of the teacher was to "set up the environment and structure the situation so as to stimulate the desired type of reaction" (p. 64).

Tyler and Dewey, were both advocates for working cooperatively (Tyler, 1981; Tanner, 1997). According to Tyler (1981), "Cooperative education expands tremendously the opportunities for practice provided students" (p. 56). For Dewey, setting up the environment meant doing away with traditional furniture and creating a setting for social interaction and cooperative learning (Tanner, 1997). Learning was produced through activities that were choreographed by the teacher. In a similar fashion, expert teachers also understood the value of the social group and activity structures used to foster instruction (Berliner, 1991).

Tyler (1949) also advocated analyzing "the results of an evaluation to indicate the various strengths and

weaknesses" and then to "suggest possible explanations or hypotheses about the reason" (p. 122). Dewey (Tanner, 1997) saw his school as one of "demonstration, observation, and experimentation" (p. 16). The principles were to be tested so they could be "respect[ed] by the educational profession" (p. 17). Once the theories were analyzed, new ways for improvement were sought, and then the process started over again. In a similar fashion, expert teachers continue to search for new and better ways to teach, while not being intimidated by the practice of reflection.

According to Tyler and Dewey, evaluation for students is not the same as testing. Evaluation of students should take the form of a multitude of sources. Observations, questionnaires, interviews, sampling, writing, and products are all viable methods of evaluation (Tyler, 1949). The teachers at the Dewey school had a "test-and-see" (Tanner, 1997, p. 177) attitude, which had an experimental connotation to the curriculum. Expert teachers also evaluate their students without relying heavily on test scores. They were able to ask questions and quickly assess the level of their students (Carter, Sabers, Cushing, Pinnegar & Berliner, 1987).

Significance of Study

There are too many paths that cross in the fields of effective and expert teaching and the past studies of teaching to not explore these similarities further. The curriculum development of the past focuses on some of the same characteristics of effective and expert teaching of today. That these similarities are evident from a brief overview of these works suggests that a closer analysis may well yield further patterns of agreement. If there is theoretical agreement between the literature of effective and expert teaching and literature from historic teaching theory and practice, specifically Dewey and Tyler, then perhaps expert teaching not only validates, but is validated by, and even improves past experienced research. A historical perspective can inform contemporary studies of teaching by not reinventing the wheel. Dewey and Tyler provided the theoretical foundation for expertise in teaching principles that can be used to oversee effective and expert teaching today.

Statement of Purpose

The purpose of this study is to determine the extent of the similarity between John Dewey's and Ralph Tyler's theories of teaching and instruction and effective and expert teaching. If theoretical agreement is evident,

perhaps it lends credibility, if not validity, to effective and expert teacher research.

Research Questions

This study will attempt to answer the following questions:

1. What are the current practices of expert and effective teaching?
2. How would John Dewey define an ideal teacher?
3. What characteristics would Ralph Tyler think necessary to become an ideal teacher?
4. To what extent do the teaching theories of Tyler and Dewey inform the current practices of expert and effective teaching today?

Scope of the Study

This study will include a review of the Dewey Lab School and Dewey's philosophy of teaching. In addition to his books and journal articles, his Early, Middle, and Later Works will be reviewed as they pertain to teaching. The elements of the Tyler rationale and his thinking about instruction will be researched. The third body of literature for review will be expert teaching practices.

Methods and Procedures

In order to have a base-line for comparison, the characteristics of an expert teacher will be chronicled from a literature review of the studies on expert teaching. Once

the characteristics are listed, then a search for the characteristics of teaching that Dewey and Tyler endorsed will be conducted in a review of the writings of Dewey and Tyler. Since Dewey was also a philosopher, the analysis of his work will be restricted to those related to teaching. The study of Tyler's works will be limited to those concerning teaching.

The resources for the literature review will include the Reader's Guide to Periodical Literature, a chapter by Axtelle and Burnett (1970) in Guide to the Works of John Dewey, John Dewey's collected works index, the Educational Index, the Teacher's College Record, and bibliographies and reviews of Dewey's and Tyler's work. The Reader's Guide to Periodical Literature is included as a resource in order to span the years prior to those listed in the Educational Index. A bibliography will be created from these sources, then an analysis will include Dewey and Tyler's concept of teaching. From this body of research, the historical concepts of teaching as noted earlier will be compared to the research in expert teaching.

The review of expert and effective teaching will focus on studies related specifically to teaching and instruction. The research of expertise as applied to other areas will be

included in order to provide a basis for explaining the research related to expert teaching and effective teaching.

After the review of literature for the three different areas (Expert Teaching, Tyler, and Dewey) is completed, then a comparison will be made to identify agreements and disagreements among the three sets of literature.

Implications for expert teaching will be extricated from these findings. This study will also identify any ideas about teaching that Dewey and Tyler advocated that expert teaching literature overlooks.

Assumptions

1. The historic record can inform current and future educational practice.
2. Expert teaching includes, but is not limited to, effective teaching.
3. Expert teaching includes the psychology of pedagogy.
4. Dewey and Tyler are of sufficient stature and influence to justify review of their work.

Limitations of the Study

1. Dewey and Tyler are only two educators from among many who studied teaching.
2. The Dewey Lab School may have had a more homogeneous student body. Nevertheless, Dewey's

theories and practices may still apply in today's educational settings.

3. Characteristics of expert and effective teaching are not easily observed. Teachers may have some characteristics at different times. There are few expert teachers due to the teaching environment.
4. This research is based on historical documents, with verification depending on replication of sources.

Definition of Terms

Expert - someone skilled in their recognized or identified domain that thinks and behaves in particular modes according to their knowledge base (Glaser, 1991).

Expert teacher - a teacher that has developed from years of experience an integrated, holistic view that responds effortlessly, fluidly, and appropriately to the demands of the situations with which they are confronted (Dreyfuss & Dreyfuss, 1986).

Organization of the Report

After an introduction explaining the problem, chapter two will review expert and effective teaching. The third chapter will review John Dewey's work on teaching. The fourth chapter will explicate Tyler's ideas about and proposals for teaching. The fifth chapter will synthesize

chapters two through four with the aim of determining the extent of theoretical agreement between Dewey and Tyler, and expert teaching literature.

CHAPTER 2

OVERVIEW OF EFFECTIVE AND EXPERT TEACHING

This chapter reviews literature on effective and expert teaching. From the literature review, characteristics of effective teaching are highlighted and specific studies are included. This chapter also reviews concepts and ideals of effective teaching from various perspectives and behaviors. Expert teaching research builds on effective teaching, offering insights into why teachers behave as they do.

Effective Teaching

The term effective teacher evolved from an effort to move educational research from a theoretical perspective into a realistic educational setting (Walberg, 1991). During the 1950s, "behavioral research moved from the psychological laboratories to the classrooms" (Walberg, 1991, p. 40). In the 1970s, "educational researchers tried to find patterns of effective teaching from observations of ordinary teaching" (p. 40). According to Walberg (1991), the results from both approaches appear to converge, forming two patterns of teaching: explicit teaching and comprehension teaching.

Important dimensions of effective and expert teaching include meaning, planning, and classroom management. In

addition to specific skills and content knowledge, the following review highlights current practices of research in these areas.

Meaning

Mandry (1987) described effective teaching as adding meaning to learning experiences. This meaning involved having the teacher think of ways that content applied to students' lives. An effective teacher looks for ways to create meaningful learning opportunities. According to Mandry (1987), teachers must be aware of what is going on in the world, what personalities and countries are in the news, and perhaps, most importantly, they must be cognizant of their students' interests.

As an experienced teacher, Mandry (1987) stated that he did not have to see the students' grades to see whether they understood a particular lesson or concept. He added, "The success of my approach was reflected in their eyes. There's a special sense of satisfaction when you know you've reached them all. This, indeed, is meaningful teaching" (Mandry, 1987, p. xi).

Ornstein (1991) suggested blending the artistic aspects with the objectivity of observations to create meaningful lessons. He described teaching as being "intuitive and interactive, not prescriptive or predictable" (p. 67). The

role of a teacher as an artist was largely dependent on experiences and gut reactions. Thus, the interaction of students and teachers was a necessary part of teaching that could not be easily predicted.

Planning

How do effective teachers plan for learning experiences? Clark and Dunn (1991) summarized research on teachers' planning, intentions, and routines. They found that experienced teachers planned in a variety of ways. In-service teachers conducted unit planning and term planning, in addition to daily planning, and weekly planning. Experienced teachers were guided by "images of what the lesson will be like and how it should proceed [instead of] specific written plans" (p. 187). When teachers depended on a rigid and detailed plan, students' needs were neglected and teachable moments were lost (Clark & Dunn, 1991).

Clark and Dunn (1991) explained that to understand teaching and planning was to understand the link between curriculum and instruction. Hence, a teacher transformed knowledge into teaching behavior by planning. Even though objectives and outcomes were important, the three important variables for teachers were "knowing what you are going to teach, knowledge of those you are going to teach, and where you are headed" (p. 190).

Classroom Management

In order for teachers to be effective, they must be in control of their classrooms. Brophy (1983) maintained that the ability to be an effective teacher must begin with the ability to be an effective classroom manager. When teachers created effective learning environments, students engaged in academic tasks (Brophy, 1983). Anderson, Evertson and Brophy (1979) also noted that good classroom management was evident in classes with higher student achievement.

Kounin (as cited in Brophy, 1983) explained that with effective teachers, classroom management was preventative instead of punitive: it involved "preventing such problems from arising in the first place" (p. 33). Kounin said that classrooms of effective managers ran smoothly and responded immediately to inappropriate behavior. Brophy (1983) also listed the following characteristics of effective teachers from Kounin's research:

1. Overlapping - Effective managers had learned to do more than one thing at a time when necessary
2. Signal continuity and momentum in lessons -
3. Effective managers were able to move through them at a brisk pace...
4. Variety and challenge in seatwork - Effective managers provided assignments that were sufficiently varied in type of task and appropriate in difficulty level. (pp. 33-34)

Evertson and Weade (1991) described the lines of effective management and effective instruction as blurred and

intertwined. The observation of classroom interactions and activities made it difficult to make distinctions between management and instruction, which they noted as a false dualism.

The Exemplary Practice in Science and Mathematics Education study offered additional insights to effective classroom management (Tobin & Fraser, 1991). Exemplary teachers were described as facilitating classroom lessons in order to optimize learning. Teachers were sensitive to the needs of the students and created meaningful lessons. Safety nets encouraged involvement and student confidence. The environment in the classroom was positive and teachers participated with all students.

Within teacher management, Brophy and Good (1986) suggested that distinction should be made among control of pupil behavior, control of learning tasks, and control of thinking processes. They noted, however, that students learned more in structured classrooms where there was more teacher talk. Beyond a certain level, "additional teacher direction, drill, or recitation became dysfunctional" (p. 337). The extra instruction was not undermined by students, but was viewed in this study as unnecessary.

Rosenshine (as cited in Brophy & Good, 1986) noted the following recurring positive correlates with student achievement gain:

1. Warmth
2. Business-like orientation
3. Enthusiasm
4. Organization
5. Variety in materials and academic activities
6. High frequencies of clarity, structuring comments
7. Probing questions
8. Focus on academic activities (p. 330)

In contrast, Rosenshine found a negative correlation between strong criticism and achievement gain. Mixed results were reported for verbal praise, difficulty level of instruction and amount of student talk.

Emmer, Evertson, and Anderson (1980) studied teachers to determine their classroom management routines at the beginning of the year. The more effective managers had better classroom interactions and were less likely to ignore disruptive behavior. The less effective managers had vague rules and were not consistent with consequences for inappropriate behavior. Less effective managers also gave unclear directions and did not check students to see if they understood the lesson. Off-task behavior increased when individual instruction was attempted. Hence, the lack of overall organization of the classroom resulted in less productive time for student learning.

These managers did not attempt to acclimate new students to the rules and procedures and did not anticipate problems. Their classrooms tended to be diverted easily from lessons. Teacher absence from the room and involvement in clerical duties were often observed. Overall, the lack of proper management skills diminished the teachers' roles as leaders.

Personality was not a contributing factor for effectiveness, as the effective classroom managers were not more likely to be described as "warm, enthusiastic, composed, articulate, anxious, or critical than less effective managers" (Emmer et al., 1980, p. 230). Effective teachers tended to "nip trouble in the bud" (Evertson, Anderson, Anderson & Brophy, 1980, p. 58). However, students rated effective classroom managers higher for listening skills and expressing feelings.

Good and Grouws (1977) noted that ineffective teachers were easier to identify than the highly effective teachers due to the less effective teachers having more frequent management problems. Ineffective teachers issued many warnings, criticisms, and negative accountability messages. In contrast, highly effective teachers did not praise as often as less effective teachers.

Teacher expectations were evident for effective managers. These managers were sensitive to the concerns of students and addressed them at the beginning of the first day of the school year. They also considered attention spans and students' interests when designing lessons. Activities were planned for a high degree of the students' success. Overall, effective managers provided more reasonable work standards.

In another study of effective classroom managers, Evertson and Emmer (1982) showed that more effective managers had "higher on-task rates, lower off-task, unsanctioned behavior rates, and less dead time" (p. 489). More effective managers were also rated higher on giving clear directions, student success, clear expectations, and consistency of response to appropriate and inappropriate behavior. Once disruptive behavior occurred, effective managers stopped the incorrect behavior sooner and ignored it less frequently.

Evertson and Emmer (1982) stated that clarity was accomplished by presenting complex tasks in "step-by-step procedures" (p. 496). When students "knew what to do... they were more likely to stay on task" (p. 496). Effective classroom managers were more aware of student skills and gave directions accordingly. Less effective managers gave

assignments without the information students needed to complete the assignments (Evertson & Emmer, 1982).

Similar patterns of classroom management were observed at the elementary level by Emmer, Evertson, and Anderson (1980). However, Evertson and Emmer (1982) indicated that elementary teachers emphasized teaching rules and procedures more than the junior high teachers did. At the junior high level, emphasis was placed more on student responsibility for procedures and behaviors.

In an effort to establish effective beginning of the year teaching methods for elementary and junior high classrooms, Brophy (1983) described Evertson and Emmer's work in this area. The characteristics of effective managers summarized from their third grade studies are listed as follows:

1. Analyzing classroom tasks - Effective managers were able to explain to their students in specific detail.
2. Teaching the going-to-school skills - Effective managers formally taught rules and procedures in the early weeks.
3. Seeing the classroom from students' perspectives - Effective managers were able to anticipate students' needs.
4. Monitoring student behavior - Effective managers monitored student compliance with expectations especially closely during the first few weeks. (Brophy, 1983, pp. 34-35)

In comparison, Brophy (1983) listed Evertson and Emmer's characteristics of effective managers for the junior high school levels:

1. Instructing students in rules and procedures
2. Monitoring student compliance with rules - Better managers mentioned the rules... more often and kept better track of student progress.
3. Communicating information - Better managers were clearer in presenting information.
4. Organizing instruction - Effective managers wasted little time.(pp. 34-35)

Teaching Traits

According to Walberg (1991), Rosenshine identified other teaching traits for effective teaching. He characterized effective teachers as needing such traits as clarity, task orientation, enthusiasm, and flexibility, as well as being more structured and using student ideas. Walberg (1991) acknowledged that explicit teaching and effective teaching have been called many names, but described successful explicit teaching as having six functions:

1. Daily review
2. Rapid presentation of new content in small steps
3. Guided student practice
4. Corrective feedback
5. Independent practice
6. Weekly and monthly review (p. 42)

Borich (1992) reviewed studies of effective teaching studies over the last two decades. He noted that the research was based on classroom achievement and standardized

tests. He also highlighted five key behaviors that contributed to effective teaching:

1. Lesson clarity - Advanced organizers, giving directions slowly and distinctly, including the objectives, using examples and illustrations, providing a summary, and knowing the ability of the learner
2. Instructional variety - using attention getting devices, student ideas, rewards, and attention-gaining devices
3. Task orientation - lesson plans that reflected curriculum, managed the class without interruptions, and established cycles of review, feedback, and testing
4. Engagement in the learning process
5. Student success (p. 9)

Borich (1992) found that the following behaviors were not as strongly linked to student achievement, but were important for effective teaching:

1. Use of student ideas and contributions
2. Structuring
3. Questioning
4. Probing
5. Teacher affect (p. 16)

Of the behaviors listed, teacher affect was difficult to record in "transcripts of narrowly focused research instruments" (Borich, 1992, p. 23). As Ornstein (1991) remarked, "There are many different teacher styles and effective teachers...[but] many successful teachers do not exhibit such direct behaviors" (p. 73). In addition, Borich (1992) acknowledged that despite highlighting specific effective teaching traits, teaching is complex and cannot be simply defined.

Process-Product Research

Process-product (or process-outcome) research studied the relationships between teacher behavior and student gain. Brophy and Good (1986) noted that observation systems became more reliable over the years and proved to show significant and stable teacher effects. However, Rosenshine (as cited in Brophy & Good, 1986) "questioned the stability of teacher behavior" (p. 330) when related to student achievement.

Brophy and Good (1986) found research linkages between teacher behavior and student achievement that were consistent through a replication of findings. The authors noted the need to qualify findings by grade level, student characteristics, or teacher objectives. The results are as follows:

1. Quantity and Pacing of Instruction - Achievement was linked to the quantity and pacing of instruction.
2. Opportunity to Learn/Content Covered - Amount learned is related to opportunity to learn.
3. Role Definition/Expectations/Time Allocation - Achievement is maximized when teachers [are] businesslike or task-oriented.
4. Classroom Management/Student Engaged Time - Efficient learning environments were dependent on the teacher's ability to organize and manage the classroom. Key indicators of effective management include: installation of rules and procedures at the beginning of the year, smooth transitions between lessons, withitness and variety [of challenging] lessons, [and] consistent accountability procedures.
5. Consistent Success/Academic Learning Time - Students must be engaged in activities that have an appropriate difficulty level. Pacing [should

promote] continuous progress. Questions should yield correct answers (about 75% of the time) and seatwork activities should be completed with a 90-100% success rate.

6. Giving Information - Achievement is maximized when teacher actively presents and structures material. Achievement is higher when information is presented with a degree of redundancy. Students learn more from clear presentations. Enthusiasm often correlates with achievement, especially for older children. At higher grade levels, it may be necessary to move at a slower pace [when presenting complex material].
7. Questioning Students - Data on difficulty level of questions continue to yield mixed results.
8. Reacting to Student Responses - Teachers should provide feedback so that everyone knows that an answer is correct. Praise may often be intrusive and distracting.
9. Seatwork and Homework Assignments - Students should experience very high (near 100%) success rates (Brophy & Good, pp. 360-364).

In a study by Anderson, Evertson and Brophy (1979), effectiveness was determined by the gain in student test scores. Manuals of 22 principles believed to promote effective teaching were distributed to 17 first-grade teachers who agreed to use the instructional manual, with 10 teachers serving as the control group. The focus of the manuals was to help teachers maintain a balance between attention to the group and attention to individuals. Teachers were asked to "follow certain principles of instruction, but no attempt was made to determine exactly what the teacher was to say or do" (p. 194).

After reviewing the principles that were implemented by the teachers, the data suggested that four principles were valuable for improving student achievement:

1. Students achieve more when they are given greater opportunity to learn.
2. In the group, it is important that students be given opportunities to practice skills ...
3. The teacher should provide much appropriate information about the structure of the skills involved, rather than focusing only on memorizing rules or labels.
4. Good classroom management underlies all the other principles and makes it possible to implement them in instruction.

(Anderson, Evertson & Brophy, 1979, pp. 221-222)

In elementary math classrooms, Good and Grouws (1977) found that highly effective teachers were able to clearly introduce and explain material. When students did experience difficulty, these teachers were more likely to respond with correct answers and to give explanations for how the answer could be derived. Students in classrooms of the highly effective teachers were given more work and covered more curriculum material. These students also approached the teacher more often than students with less effective teachers. When studying effective mathematics teachers, Peterson and Fennema (1985) found that the amount of time engaged in mathematics activities was related to students' mathematics achievement.

Evertson, Anderson, Anderson, and Brophy (1980) replicated in part a study by Brophy and Evertson (1976)

comparing effective teaching at the junior high level.

Brophy and Evertson previously studied second and third grade classrooms. A summary of statistically significant variables and patterns is listed below:

1. Generally, the more successful teachers were rated as more task oriented, affectionate, enthusiastic, oriented to students' personal needs, competent, confident, and academically effective.
2. Teachers...having effective organization and control in their classes were also more academically effective and popular with their students.
3. The more successful mathematics teachers spent more time in class discussion or lecture, asked more public questions, and formed a greater proportion of their contacts with students.
4. More successful mathematics teachers asked more questions of all types.
5. Teachers who depended heavily on volunteers tended to have classes with higher achievement.
6. Rates of public praise were often correlated positively with achievement in both mathematics and English.
7. Teachers who were...more receptive to student input were also more successful.
8. More successful mathematics teachers tended to spend less time in seatwork.
(Evertson, Anderson, Anderson, & Brophy, 1980, pp. 46-57)

The authors described effective teachers as "active, well organized, and strongly academically oriented" (Evertson, Anderson, Anderson & Brophy, 1980, p. 58).

At the high school level, Henderson, Winitzky, & Kauchak (1996) conducted research with four Advanced Placement teachers. The more effective teachers spent more time instructing students, asking questions, and were

assigned more homework in the more effective classrooms. The concept maps of the effective teachers also revealed a more elaborate and organized knowledge structure. The results showed that effective teachers "think about and organize their subject knowledge differently, and induce their subject knowledge differently, and induce their students to think differently as well" (p. 34).

Winnie & Marx (1982) noted, "The success of the teacher's instructional stimuli was dependent on the amount of material presented" (p. 513). They found that teachers needed to communicate clearly about the subject matter and students' thinking processes. Teachers need to be aware that "intended instructional practices may be interpreted in various ways by different students" (p. 516).

Rosenshine (as cited in Brophy & Good, 1986) reported that "data from different investigators using different methods indicated that certain teacher behaviors were consistently correlated with student achievement gain" (p. 330). Based on the research of cognitive processing, Rosenshine (1995) suggested that teachers should help students make connections between bodies of knowledge and help them to better organize pieces of information. He also suggested that teachers should require students to process

new information by explaining, summarizing, and comparing.

Rosenshine noted two findings from this body of research:

1. Information should be presented in small steps.
2. Students should be assisted with guided practice that may include modeling, working in groups, or questioning students.

Summary of Effective Teaching

While Mandry (1987) described the importance of meaning for effective teaching, many researchers (Borich, 1992; Brophy & Good, 1996; Good and Grouws, 1977; Walberg, 1991, and others) searched for steps effective teachers included in their daily routines. See Table 2 for a summary of effective teaching procedures. Examples of effective teaching practices included lessons with introductions, demonstrations, guided practice, feedback and more guided practice. In addition, classroom management was a large contributor to student achievement and effective teaching.

Table 2

Effective Teaching Practices

Pre-lesson

1. Use a standard and predictable signal.
2. Face the class.
3. Give an overview of the lesson.
4. Present new words and sounds.

Table 2 (continued)

5. Repeat new words or sounds.

Lesson

6. Present a demonstration or an explanation.
7. Work with one individual at a time.
8. Occasionally question a child about a response.
9. Call on volunteers when children contribute personal experiences or opinions.
10. When call outs occur, remind the child that everyone gets a turn.
11. The teacher should avoid leading questions, answering one's own questions, or repeating questions.

Evaluation

12. Decide if the group as a whole can meet the objectives of a lesson.
13. Teach the more able students to the end of the lesson, dismiss them, and keep those who need extra help.
14. Use one or more children to serve as models for the others.
15. After asking a question, the teacher should wait for the child to respond and indicate that some response is expected.
16. When the child is incorrect, the teacher should indicate that the answer is wrong.

Table 2 (continued)

17. The appropriate simplification procedure is determined by the type of question: For a factual question, the teacher should give the child the answer and then move on. The teacher should provide clues or simplify the question. If the clues still do not help the child, he should be given the answer. The teacher should never ask another child to supply the answer.
18. If the student answers correctly, the teacher should acknowledge the correctness and make sure that everyone else heard and understood the answer.

Post-lesson

19. Tutorial assistance should be provided if needed.
20. Praise should be used in moderation. Praise should be as specific and individual as possible.
21. Criticism should also be as specific as possible and include specification of desirable or correct alternatives.

Note: Adapted from "An experimental study of effective teaching in first-grade reading groups" by Anderson, Evertson and Brophy, 1979, The Elementary School Journal 79(4), 193-223.

Classroom management was necessary for maintaining an effective classroom. Therefore, it was studied as a separate entity (Brophy, 1983; Brophy & Good, 1986; Emmer, Evertson, & Anderson, 1980; Evertson and Weade, 1991; Evertson, Anderson, Anderson & Brophy, 1980; Tobin & Fraser, 1991; and others). Results showed that effective classroom managers had a better rapport with students and were less likely to ignore disruptive behavior. These classroom managers were sensitive to student needs and created "safety nets" to encourage student involvement (Tobin & Fraser, 1991, p. 225). Higher on-task rates, clarity in giving directions, higher levels of student success, and clear expectations were also associated with effective classroom management. (For a detailed listing of effective teaching traits, see Table 3).

Table 3

 Effective Teaching Traits

Trait	Description
Meaning	Adds meaning to lessons
Interaction	Teachers interact with students, concerned about students
Classroom Management	Preventative vs. Punitive Runs automatically

Table 3 (continued)

Classroom Management	<p>Overlapping-Teachers complete more than one task at a time</p> <p>Organizes lessons and classroom</p> <p>Brisk-pace of lessons</p> <p>Explains in detail</p> <p>Analyzes classroom tasks</p> <p>Monitors student behavior</p> <p>Facilitates learning</p> <p>Creates safety nets to encourage participation</p> <p>Anticipates problems</p> <p>Good listener, considers student input</p>
Clarity	Organizers, examples, summaries
Task orientation	Curriculum-based lessons, managed interruptions
Pacing/Engaged time	Opportunity to learn
Enthusiasm	Interest in content, expresses feeling
Flexibility	Ability to change plans quickly
Routines	Daily review, presentation in small steps, questioning, guided

	practice, corrective feedback, independent practice, and review
Variety	Uses attention getting devices, student ideas, rewards
Planning	Images vs. written plans

Effective teaching practices were observed in elementary, junior high, and high school classrooms. Replications of studies for the beginning of the year were completed for elementary and junior high levels with the first of the year routines proving pivotal for the remainder of the school year. Regardless of the grade level, effective teachers were found to have specific procedures for running their classrooms smoothly and effortlessly.

Berliner (1976) cautioned that the results of effective classroom studies may be misleading. He stated that research must be replicated in the natural teaching environment before accountability programs will be believable. When studying teacher effectiveness, some teaching behaviors are not stable over time and may fluctuate due to the variety of students and settings. Therefore, research for teacher effectiveness should take place in schools that account for more variance in student achievement (Berliner, 1976).

Berliner (1976) warned that current research only included teachers who volunteered for studies. Without the research of all teachers, only the self-confident teachers would be included. Berliner warned that this selection process lead to only studying effective teachers instead of comparing effective and non-effective teachers. He further stated that in order to learn how different teaching styles have a positive or negative impact on student achievement, links between the teachers and students must be studied.

Expert Teaching

In this section the concept of expert teaching is reviewed. Berliner and others (Bents & Gardner, 1992; Campbell, 1990; Cushing, Sabers, & Berliner, 1992; Henry, 1994; Livingston & Borko, 1989; Olson, 1992; Ornstein, 1995; Peterson & Comeaux, 1987; Webb & Blond, 1995) search for the difference between repetitive behaviors of good teaching and a thinking process that connects with students. Since only a few teachers reach the stage of expertise, the concept is not only difficult to define, but also difficult to observe. However, the contrasts between novices (beginning teachers) and experts (teachers of 10 years or more that excel in their area) are evident.

This section will begin with a discussion of the definition of expertise, followed by the identification of

common characteristics of expert teaching. The latter part of this section will include specific studies of expert teaching.

Experts

An expert is someone skilled in his/her area of expertise that thinks and behaves in particular modes according to their knowledge base (Glaser, 1991). The extent of this knowledge base and skills is what differentiates the expert from the novice. Unlike the definition in Webster's (Guralnik, 1982) dictionary which stated that an expert is "very skillful; having much training and knowledge in some special field," (p. 493) an expert teacher is defined in more specific terms. However, a weakness of much of the research in this area lies in the definition of expertise. While experience is a prerequisite for defining expertise, it is not always correlated with expert performance.

Welker (1991) stated that expertise required more than a basic knowledge. He described an expert as requiring "specialized training...and special places [to] practice," (p. 22) but warned against reducing teachers to "a mechanical way" (p. 28). He suggested allowing diversity of approaches to foster expertise and combining knowledge with everyday practice. Ericsson and Smith (1991) saw a need for

identifying "not only what the acquired characteristics are but also the process by which they are acquired" (p. 7).

Shanteau (1992) found three areas of research from cognitive psychology that helped explain the behavior of experts:

1. Expertise is domain-specific. Experts' cognitive processes are lost outside of his/her domain.
2. Experts rely on automated process. With practice, control processes may become automated over time.
3. Expert thinking may be studied by verbal protocols. (p. 13)

Shanteau (1992) suggested that cognitive psychology almost exclusively focused on expert knowledge. He stated that the "role of knowledge is seldom mentioned in discussions of the processing limitations of experts" (p. 16) where judgment/decision making is being studied.

Shanteau (1992) listed nine characteristics of experts observed from his own research:

1. Every expert has an extensive and up-to-date content knowledge.
2. Experts have a sense of what is relevant when making decisions.
3. Experts have an ability to simplify complex problems.
4. Experts can communicate their expertise to others.
5. Experts handle adversity better than non-experts.
6. Both experts and novices can follow established strategies when the decision problems are straightforward.
7. Experts are better at identifying and adapting to exceptions.
8. Almost all experts have a strong self-confidence.

9. Experts know how and when to adapt their decision strategies.
10. Experts have a strong sense of responsibility and tend to stand behind their recommendations.
(pp. 16-17)

Experts have "an extensive and up-to-date basis for content knowledge" (Shanteau, 1992, p. 16). This knowledge base is necessary, but does not create a level of expertise. In addition, domain specific knowledge is based on enormous experience that is then organized in a special way to form the basis of expertise (Brandt, 1986). Experts' knowledge also includes many patterns that are referenced when faced with similar situations. But the difference between the expert and the novice is that the expert learns to recognize the patterns of high significance (Bereiter & Scardamalia, 1993). This attention to what is relevant is related to the amount of knowledge one has accumulated.

However, experts do not think less because of an abundance of memory available for recall. Depending on the task, experts may think more. Experts tend to search for the answer in a problem solving way and have been found to "reason forward" (Shanteau, 1992, p. 13). In contrast, novices tend to think backwards "from the unknowns to the givens" (Shanteau, 1992, p. 13). When there is sufficient knowledge, the problem solving of experts turns to recognizing instead of analyzing.

The knowledge that experts have is useful in solving problems. It changes the manner in which experts approach problems and helps them to analyze problems within their domain of expertise in a more proficient fashion (Wright & Bolger, 1992). The key feature driving human problem solving when the goal is not well defined is balancing search with evaluation. Hence, evaluation demands knowledge (Ericsson & Smith, 1991).

According to Shanteau (1992), experts may benefit from their ability to identify the relevant attributes for problem situations in advance of any subsequent analytic processing of the information. Experts are able to adapt to new situations and make sense out of the situation. They know "how and when to adapt their decision strategies to changing task conditions" (p. 17). Not only are they able to decide when to make adjustments, they are "willing to make continuous adjustments in initial decisions" (Wright & Bolger, 1992, p. 18).

Experts continue to grow by reinvesting their time and effort into learning. The following are common forms of reinvestment:

1. Reinvestment in learning
2. Seeking out more difficult problems
3. Tackling more complex representations of recurrent problems (Bereiter and Scardamalia, 1993, p. 93)

Another form of knowledge is the expert's creativity. Instead of relying on routines, as is characteristic of non-experts, experts are constantly addressing new issues of higher complexity (Bereiter & Scardamalia, 1993). Creativity becomes a process of continuous problem solving or going beyond the common knowledge base. In many cases creativity involves risks and a goal that is not well defined.

The difference between experts and novices is that experts will take bigger risks if they have been successful in the past and have a supportive environment. The non-expert may see many tasks as not very promising, and in the end may not take any risks. But the expert sees the complexity as worthwhile or is able to judge the outcome of the goal (Bereiter & Scardamalia, 1993). The sense of failure or not being able to achieve a goal, however, will reduce the levels of creativity for some novices and experts (Bereiter & Scardamalia, 1993).

In order to foster creativity, new ways of thinking must be taught. Creativity is acquired through progressive problem solving toward creative goals (Bereiter & Scardamalia, 1993). New designs for thinking emerge from a series of drafts or versions. Creative problem solvers focus on what the present version may become, instead of

focusing on shortcomings. Just as with any other kind of expertise, creativity is developed through practice (Bereiter & Scardemelia, 1993).

In addition, experts are able to see patterns from information (Shanteau, 1992). Someone other than experts may not focus on the abnormality of an event (Brandt, 1986). According to Shanteau (1992), "They can extract information that non-experts either overlook or are unable to extract" (p. 16). Due to an accumulation of knowledge and observations, experts often make decisions from previous insights (Keren, 1992).

If pattern learning is increasingly difficult to modify, how do experts remain motivated? Flexibility may be one characteristic that explains how experts continue to challenge themselves. Flow experience may account for experts' ability to continue to seek challenges (Csikszentmihalyi & Csikszentmihalyi, 1988). If the complexity is too difficult, frustration will occur. Boredom will set in if the complexity is too low. Thus, patterns become building blocks for additional knowledge instead of restrictions for predictable outcomes.

In a series of studies by Chi, Feltovich, and Glaser, (1981) expert and novice problem solvers were given physics problems to analyze. Their research determined the kinds of

categories problem-solvers imposed and the knowledge that was related to the categories. Results suggested that experts' problem solving occurred over a span of time and that experts engaged in qualitative analysis prior to considering the dilemma. Experts tended to work forward and have a better use of a category system for solving problems.

In addition, experts have been shown to recognize patterns and categories in a more efficient manner. Investigators tend to select a small number of tasks without specifying the population represented by the sample (Ericsson & Smith, 1991). Citing Kerin, Wright & Bolger (1992) state, "It is the way by which the experience and training are absorbed, processed, accommodated, and structured that would determine its final use and the level of expertise" (p. 44).

From the previous literature review of expertise in general, a basis was established for examining expertise in the teaching field. Many of the same characteristics such as an extensive knowledge base (Bereiter & Scardamalia, 1993; Ericsson & Smith, 1991), pattern recognition (Shanteau, 1992), problem-solving (Brandt, 1986) and attending to many different tasks simultaneously are applicable to expert teaching. The following analysis of

studies addresses expertise as it applies to specific expert teaching characteristics.

Teaching Characteristics

All teachers do not become expert teachers, regardless of their years of experience. From the novice stage, teachers develop at different rates over the years.

Berliner's (as cited in Dodds, 1994) description of teacher expertise, as adapted from Dreyfuss & Dreyfuss (1986), is helpful in understanding the various levels of expert teaching:

1. Novices (student and first-year teachers) operate using context-free rules and are learning to label and use the basic elements of teaching tasks. Novices behave inflexibly but rationally, and their primary task is to gather experience.
2. Advanced beginners (second- to third-year teachers) recognize similarities across situations, storing up episodic memories and case knowledge to which they relate their current experiences.
3. Competent teachers (third- to fourth-year and some more experienced teachers) consciously choose what to do and can determine which events are most salient to the operation of their classrooms.
4. Proficient teachers (some fifth-year and more experienced teachers), having built up a large store of experiences, teach more fluidly and less consciously.
5. Expert teachers (only a few reach this pinnacle) teach intuitively, having an overall sense of the situation such that they can respond fluidly without deliberating. (p. 155)

According to Bents and Gardner (1992) expert teachers have the same characteristics as general experts, but also have the following domain specific characteristics:

1. Expert teachers view the classroom in an interrelated, holistic context.
2. Experts use humor... understand the lifelong, moral/ethical ramifications.
3. Expert teachers are able to ascertain how information is relevant.
4. Expert teachers are able to anticipate and plan for problems.
5. Classroom management is an assumed concept.
6. They [experts] are able to suggest many alternatives.
7. Expert teachers give more thoughtful adjustments to the planned lesson. (p. 41)

In addition, Ornstein (1995) stated that expert and novice teachers teach and "interpret classroom events" (p. 77) differently. He summarized the description of expert teachers as follows:

1. Experts are likely to refrain from making judgments about students.
2. Experts tend to analyze student cues in terms of instruction.
3. Experts make classrooms their own.
4. Experts engage in intuitive and improvisational teaching.
5. Experts seem to have a clear understanding... of the types of students they are teaching.
6. Expert teachers are less egocentric and more confident about their teaching. (pp. 77-78)

According to Olson (1992), expert practice was not ruled-governed, but occurred without a conscious effort. He stated, "While expert behavior was not based on conscious processes, it just happens" (p. 18). These practices

evolved over time with a non-stop growth process. Expert teachers' domain knowledge, which became very complex and holistic, was based on their experiences.

In accordance, teacher knowledge was not merely gained by attending classes or going through the motions of teaching. Before any new knowledge was learned, it had to be "congruent" (Tillema, 1994, p. 602) with the teacher's existing knowledge. Therefore, teachers' attitudes and beliefs must be studied before deciding if new knowledge will convert into practice.

As stated by Peterson and Comeaux (1987), researchers in teacher education have found that "an underlying knowledge structure" (p. 327) influences the way teachers perceive, understand, and respond to classroom events. In addition, experts interpret classroom events differently from non-experts. The difference in thinking is attributed to experts' more elaborate cognitive structures and can be measured directly or indirectly (Livingston & Borko, 1989).

Henry (1994) attempted to refine the identification of expert teachers based upon the research of Berliner and others. He had teachers with various years of experience rank their concerns. Expert teachers, nominated by the local curriculum coordinators, gave the most importance to informal student outcomes. Experts were also less concerned

with external factors or events outside their classroom. Because of this, the expert teachers' decision-making process was centered within themselves. These teachers placed student enjoyment as an important factor to learning and placed little importance on the influence of other teachers, administrators, or community members.

In studying expert teachers, Bents and Gardner (1992) found that these teachers were able to make adjustments to the planned lesson to incorporate other topics that fit the students' interest areas. Classroom management for expert teachers included routines for a "large chunk of what goes on" (Brandt, 1986, p. 8). Discipline, instead of punishment or control, was used to empower students (Bents & Gardner, 1992). Teachers were able to establish alternatives and identify many options.

Relationships

Webb and Blond (1995) acknowledged that a caring personality played a vital role in instruction for teachers. Caring may be observed as a way that teachers practice "knowledge from caring" (p. 612). A teacher's practice and a kind of knowing altered the "curriculum constructed and enacted with each student" (p. 612). Knowing a person required constant learning about who they are, and why they react in certain ways. In this sense, "knowledge is not

limited to what one person knows, but the intersection where the knowing of two persons in-relation overlap" (p. 624).

Common (1991) also studied teacher-student educational relationships. Her research included exceptional master teachers throughout history from very different cultures: Zeno of Elea, Lao Tzu of Ch'u, and Jesus of Nazareth. She found three qualities evident in the relationships of these great teachers:

1. [They] implemented curricula deemed to have moral and cultural significance.
2. They centered their teaching in the human imagination
3. They practiced their pedagogy through the telling of stories (p. 195)

Some of the same teaching techniques used today were used hundreds of years ago. The results of this study were measured by "not in what teachers do, rather in what their students do because of the teaching" (p. 195).

Lao Tzu of Ch'U balanced curriculum content and student access to the curriculum (Common, 1991). Zeno of Elea was a master of questioning techniques. His arguments lead to students thinking about their own ideas. According to Common, short stories and parables were common in the teachings of Jesus of Nazareth.

The relationships between teachers and students were important contributions that enhanced teacher traits such as content knowledge or caring for students. Common (1991)

maintained that the educational development of students was a major focus for all three master teachers. Improving society and leading a more democratic way of life were educational objectives of the master teachers.

Studies of Expert Teaching

This section includes studies of expert teaching. Noted traits of expert teaching include problem solving skills and the attention to detail of classroom activities. The following studies highlight the thinking processes of teachers.

Peterson and Comeax (1987) posited that experts and novices differ both in their problem representation and solution to problems due to differences in the "underlying schemata of experts and novices" (p. 320). In a study of 10 experienced teachers and 10 student teachers conducted by Peterson and Comeax (1987), teachers viewed a videotape of classroom events and were then interviewed. The average years of teaching experience were 24.5. The experienced teachers in this study had higher vocabulary scores and greater recall of classroom events than did novice teachers. The authors reported schemata differences in teachers' ability to recollect and analyze classroom events, with experienced teachers more often discussing the "problem-

solving situations in classroom teaching...in terms of higher-level principles" (p. 327).

In a series of studies by Cushing, Sabers, and Berliner (1992), teachers were asked to view three video monitors simultaneously in order to simulate monitoring of a classroom. Novices reportedly had the most difficulty. They were also asked to respond to a classroom scenario and to comment on a classroom that was viewed by slides (Cushing, Sabers, & Berliner, 1992). They found that "in all three tasks, experts were better able...to make sense of and interpret classroom phenomena, whether presented as archival and anecdotal information, static visual information, or dynamic, simultaneous information" (p. 111).

When novices, postulants, and experts were asked to view slides of a classroom (Carter, Cushing, Sabers, Stein & Berliner, 1988), experts made inferences about the activities. Novices and postulants gave literal descriptions of the classroom. Experts also focused on the typical vs. atypical classroom scenes and related the behaviors and settings to their own teaching. Comments about what is typical were not as evident in the postulants and novices viewing of the slides. Experts' stories about what was happening in the classroom were also richer, with all experts giving attention to the same slides. Novices

did not focus on the same slides as other novices. Experts, in contrast to the novices and postulants, commented on the slides being out of sequence, even though researchers had previously attempted to place the slides in the proper order.

In an attempt to gain information about how teachers process information about students, Carter, Sabers, Cushing, Pinnegar, and Berliner (1987) constructed a scenario to determine what experts, novices, and postulants (non-teachers) recalled about instruction, management, and classroom organization. In the scenario, participants were told they would be taking over another teacher's class after five weeks into the school year. The participants were given the task of planning a class with only a short note and students' previous grades and attendance. Teacher comments, corrected tests, and homework assignments were also included. The researchers found that not only did the experts have a greater knowledge base, but they also processed information about students differently than novices and postulants. The results of the study were presented as nine propositions representing qualitative differences among expert, novice, and postulant teachers:

1. Experts, novices, and postulants differ in their attitude toward the processing of students.
2. Experts, novices, and postulants differ in their inclinations to accept as valid the information

- provided by the previous teacher.
3. Experts, novices, and postulants differ in the ways they talk and think about students.
 4. Experts, novices, and postulants differ in terms of the kind and quality of solution strategies they proposed for classroom problems.
 5. Experts, novices, and postulants differ in their thinking about preparing to take over a new class.
 6. Experts, novices, and postulants differ in their routines for getting to know students and for assessing what the students have learned.
 7. Experts, novices, and postulants differ in the types and amounts of information they remember about students.
 8. Experts, novices, and postulants differ in the amount and kind of attention they give to test and homework provided in the task.
 9. Experts, novices, and postulants differ very little in the amount of time they allocate for examining information about students and for planning instruction.
- (Carter, Cushing, Sabers, Pinnegar, Berliner, 1987, pp. 149-156)

Experts, as compared to novices and postulants, did not believe specific information about students. Experts suggested they would like to disregard most of the information left by the previous teacher and gave reasons for categorizing students. Postulants, however, did not include reasons for sorting students.

Experts were more opinionated about the previous teacher's instruction and were more likely to only remember information if it was related to planning or instruction. They made it clear that they were in charge in an attempt to begin their own routines. Experts saw getting to know students and assessing what they had learned as two separate

parts. They also used information to build explanations about student success or failure.

In contrast, Carter et al. (1987) found that novices and postulants were more concerned with continuing the previous teacher's routines and were more concerned with individual students than the broader pieces of information. Novices did not voice the changes they would make. They also attended to surface information, while postulants remarks about tests and homework were vague and unrelated to action plans. Postulants spent more time looking at the textbook and novices complained that they did not have enough time to complete the planning.

Overall, the teaching characteristics of postulants, novices and experts were different in many of their tasks. Of the three groups, postulants and novices were similar in their responses for this study. However, the expert teachers were easily contrasted with the results of the inexperienced teachers and postulants. Moreover, the various levels of domain knowledge, educational training, and experience were evident from each group's responses.

In a study by Winitzky, Kauchak & Kelly (1994), nine teacher candidates were studied as part of a longitudinal investigation of teachers' growth in knowledge of classroom management. Concept maps and ordered tree data of

teachers were analyzed. For the ordered tree, twenty concepts associated with classroom management were selected and subjects grouped the terms "in a way sensible to the subject" (p. 126). Subjects also constructed a concept map [a graphic representation] of how they viewed classroom management.

According to Winitzky et al. (1994), the most important finding was the trend toward greater organization after one year of completing a teaching program. Teachers that applied the learned information showed sustained effects for teaching programs. However, the authors contend that for "growth of structure" and "long-term retention", experts must "process information at a deep level and restructure the content to make it their own" (p. 135).

When reviewing for tests, Livingston and Borko (1990) noted differences in organization between expert and novice teachers. The reviews conducted by the experts were organized according to student-directed questions. Experts then assisted students in having them explain their answers. The authors explained, "The novices experienced difficulty in generating examples and providing explanations for unexpected student questions" (Livingston & Borko, 1990, p. 383). The experts were more comprehensive and more

responsive to students' questions while teaching from an outline of concepts.

When Campbell (1990) interviewed expert teachers to determine their adaptive strategies, the teachers shared personal techniques for adapting to an inadequate work environment. These expert teachers were found to have a sense of independence and a strong sense of mission. Expert teachers were continually seeking ways to improve their teaching performance in a "holistic view" (p. 37). These teachers had a strong sense of autonomy and a strong support system. According to Campbell, "Experienced expert teachers did not allow the external work environment to interfere with their teaching mission" (p. 38).

But how do teachers become expert teachers? Butler (1996) proposed that reflection was the mechanism that "propels one from the novice state to the expert state" (p. 272). He felt that without reflection there is no development. Butler described a novice as reflecting on the action after it takes place, but for the expert, "performance is usually generated in complex situations" (p. 273).

Butler's (1996) stages of progression from novice to expert are listed as follows:

1. Novice - Rule-governed behavior
2. Advanced beginner - Still rule-governed at times

3. Competent - Being strongly analytic
4. Proficient - Synthesizing performance
5. Expert - Tacit knowledge (pp. 277-278)

According to Butler (1996), reflection is the key to transforming a novice into an expert. Teachers at each progression view the teaching experience differently. Novices have no experience in the situation in where they are expected to perform. The advanced beginners believe someone knows the answer to problems. They spend a lot of time seeking public knowledge outside themselves for answers to problems.

However, Butler (1996) suggested that competent teachers plan their lessons consciously and deliberately. They focus less on details and work from the big picture. Proficient teachers are best assisted by involvement in reflective discussions of actual problems. They see meaning in terms of long-term goals. Finally, the highest lever of expertise focuses on the core of the problem and operates from a deep understanding of the total situation.

Summary of Expert Teaching

Bereiter and Scardamalia (1993) stated that experts advanced problems instead of constricting the work. Moving beyond the plateau of normal learning was characteristic of acquiring expertise. According to Berliner's (as cited in

O'Sullivan & Doutis, 1994) reference about expert chess players, "There are no easily agreed upon right moves," (p. 178). Similarly, the observable tasks in teaching may lead to many different directions (O'Sullivan & Doutis, 1994). Bereiter & Scardamalia (1993) found that the study of expertise must go beyond fluid actions and pattern learning.

The challenge is to learn more about how experts acquire their knowledge and when they use this knowledge. According to Lampert & Clark (1990), teacher education should consider "not only the content of expert teachers' thinking, but also the conditions under which they think" (p. 22). A major limitation of trying to capture the observed expert performance is the ability to replicate real-life expertise. As Ericsson and Smith (1991) explained, "There is no consensus on how the expertise approach should be characterized" (p. 8). (See Table 4 for a listing of expert teaching characteristics and behaviors.)

Table 4

Expert Teaching Characteristics

Extensive domain knowledge

Sense of relevancy

Simplifies complex problems

Handles adversity, unconcerned with external environment

Table 4 (continued)

Adaptability

Self-confident

Problem-solvers, creative, recognizes patterns

Focuses on atypical events

Reflective

Fluid actions

Student relationships

Differs in attitudes, preparation, routines

Responsive to student questions

Effective and Expert Teaching Summary

From the review of the literature for effective teachers and expert teachers, various characteristics and behaviors appeared. Effective teachers have behaviors such as planning thoroughly, teaching with clarity, being task-orientated and using a variety of methods. Classroom management was important for effective and expert teaching. In many cases, teacher behaviors were linked to positive student achievement.

Expert teaching involved a different, more intricate and complex knowledge base. Because of the knowledge base of expert teachers, they were able to focus on events in greater detail and teach in a problem-solving way. The ability to remain flexible and care about all of the

students was evident in their belief systems as well. Expert teachers had a higher level of confidence that enabled them to become resilient to outside factors and focus on students as their main concern.

With the review of both effective and expert teaching, different levels of teaching were highlighted. Just as experts needed years of experience to acquire their skills, effective teachers must complete their repertoire of teaching behaviors in order to reach higher levels. All teachers do not become expert teachers, and expert teachers do not always behave according to their level of expertise. What is known, however, is that the truly ideal teacher makes teaching appear fluid and effortless. As Lampert & Clarke (1990) stated, teachers should be studied for not only how they teach, but "the conditions under how they think" (p. 22).

CHAPTER 3

REVIEW OF JOHN DEWEY'S IDEAS ABOUT TEACHING

This chapter reviews John Dewey's main ideas about teaching according to his published manifesto for all teachers, his Pedagogic Creed. Hence, this section will be organized according to the chapters found in his Pedagogic Creed: What education is, what the school is, the subject matter of education, the nature of method, and the school and social progress (Dewey, 1897). The first two sections include Dewey's literature of what education is and what the school is. Third, subject matter is reviewed according to how teachers should treat the content of lessons. Fourth, Dewey's nature of teaching methods are highlighted. Fifth, practical examples of school and social progress will include the routines of the University of Chicago Laboratory School along with how he expected teachers to teach, think, and create educational environments for social progress.

What Education Is

Democracy

Dewey (1923/1983c) considered democracy and citizenship valid subjects to be included in education. According to Bernstein (1966), he connected the "growth of democracy with the development of experimental method in the sciences...and

pointed out the changes in subject matter and method of education indicated by these developments" (p. 7). Dewey (1916b) defined democratic social interaction or communication as follows:

1. The consciously shared interests of participants are numerous and varied.
2. The participants have full and free interplay with other groups and their interests. (p. 100)

But Dewey's democracy was more than a form of government. It was a way to combat the passiveness brought about by a "modern technological society" (Bernstein, 1966, p. 6). He described the principle of democracy as the "formation and growth of attitudes and dispositions, emotional, intellectual and moral" (Dewey, 1937/1982a, p. 222). Dewey warned that individuals "must learn to think for themselves, to judge independently, and to detect propaganda" (Dworkin, 1959, p. 98) if the democratic ideal was to be maintained. For Dewey (1916/1980a), the demands of a democratic education included a social and moral society. He stated, "The relation between democracy and education is a reciprocal one...Democracy is itself an educational principle" (p. 294).

Ethics

In addition to creating a democratic educational environment, Dewey (1893/1971) prescribed an ethical spirit of teaching instead of a method. He stated, "For it is not

the study of ethics I am urging; it is the study of ethical relationships" (p. 60). He prescribed an efficient moral teaching that included the "life-process of the school" (p. 54).

Although Dewey (1893/1971) was not opposed to teaching ethics in the high school, he disagreed with teaching a formal course of ethics. He viewed a separate course as being "formal and perfunctory," resulting in the "hardening of the mind of the child with a lot of half-understood precepts..." (p. 54). According to Dewey (1910/1970a), if there was a separation between moral training and intellectual training, teachers would be "on the alert for failures to conform to the school rules and routine" (p. 35).

"Character or intelligence must not be the ultimate end" (Dewey, 1910/1970a, p. 63). Therefore, he offered an "ethical standard...by which to test the work of the school" (p. 67). The questions he posed are listed below:

1. Does the school...attach sufficient importance to the spontaneous instincts and impulses?
2. Does it afford sufficient opportunity for these to assert themselves and work out their own results?
3. Can we say that the school...attaches itself...to the active constructive powers rather than to processes of absorption and learning, acquiring information?
4. Does not our talk about self-activity largely render itself meaningless...[and is it] out of relation to the impulses of the child which work through hand and eye? (Dewey, 1910/1970a, p. 67)

Psychology

Dewey's (1910/1970b) description of teaching relied greatly on psychological principles. According to him, teaching was an ethical and personal relationship. However, some teachers "react(ed) in gross to the child's exhibitions without analyzing them into their detailed and constituent elements" (p. 146).

In one example of how to teach, Dewey (1893/1971) presented a case of misery to students and instructed them to decide, "whether to relieve it and, if so, how to relieve" the problem (p. 56). His illustration of how to teach was an example of "not what to do, but how to decide what to do" (p. 56). By giving an actual situation, Dewey intended for students to form a "sympathetic imagination for human relations in action" (p. 57).

The students' decisions were constructed from all available data. Dewey's (1893/1971) example of a charity case illustrated students' priority of decision-making skills and presented an "idea of the character of the ethical material thus placed at the disposal of the teacher" (p. 57). He stated that teachers should have an idea of the phases of a plan that would gradually bring out the "typical features of every human interaction" (p. 58).

When teachers attempt to develop students' thinking, Dewey (1933/1986b) acknowledged, "There are no set exercises in correct thinking" (p. 135). He also discredited the idea of using logical formulas to create a "general habit of thinking" (p. 135). Attitudes to be "cultivated" are listed as follows:

1. Open-mindedness (Cultivate curiosity and spontaneous outreaching)
2. Whole-heartedness (A genuine enthusiasm that is not distracted)
3. Responsibility (Consideration of projected steps, along with thoroughness) (pp. 136-137)

Dewey (1923/1983b) proposed that student learning and thinking would become a student priority if the proper social conditions were met. He suggested, "Hence one of the things that students most need to do in order to make education their own affair is to influence the standard of scholastic living till thinking becomes respectable rather than a suspected and covert undertaking" (p. 199).

Thinking and Reflecting for Students

What was needed, according to Dewey (1923/1983a), was an "opportunity for students to think for themselves" (p. 175). The problem he foresaw in education was capturing "the child's attention, providing materials for thought, getting the child to think consecutively, coherently, organizedly, self-propelledly, and relevantly" (Ryan, 1995, p. 142). Dewey noted that teachers were instrumental in

"forming habits of observation and inference," with the result being "a scientific education" (p. 143). Teachers' roles were to help students consider problems and "struggle to remedy them" (Dewey, 1916/1980b, p. 194).

Dewey (1916b) defined thinking as "the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous" (p. 170). True attention was not learning for the sake of learning, but involved "judging, reasoning, deliberation...or actively engaging in seeking relevant material" (p. 203). Dewey (1909/1977) explained that a child must be led to owning a problem, so he is "self-induced" (p. 203) to finding an answer. He stressed, "Thinking is thus equivalent to an explicit rendering of the intelligent element in our experience" (Dewey, 1916b, p. 171).

Accordingly, "A person who has gained the power of reflective attention, the power to hold problems, questions, before the mind, is, in so far, intellectually speaking, educated" (Dewey, 1909/1977b, p. 202). However, the transition to voluntary attention was reached only when the child entertained results in the "form of problems or questions" (Dewey, 1909/1977b, p. 201). Dewey described "reflective attention" (p. 202) as the activity that a child

directs with a basis for some tangible result to be reached. He stated that this power of thought must be accompanied by "inherent attracting power in the material" (p. 203).

Dewey (1933/1986a) declared, "We cannot force the power to think upon any creature...but we do have to learn how to think well, especially how to acquire the general habit of reflecting" (p. 140). He stated, "Learning is something a pupil must do himself and for himself" (p. 140). If thought were developed in "positively wrong ways" then the results would be "false and harmful" (Dewey, 1933/1986b, p. 129). Dewey (1933/1986b) described thinking as "developing and arranging artificial signs" (p. 126). "Meaning" and acknowledgement of "consequences" were necessary for "deliberate control" (p. 126).

Ryan (1995) reported that Dewey's philosophy of teaching students to think constituted a five-stage schema. The following list demonstrates guidelines for the thinking process:

1. A felt difficulty
2. Its location and definition
3. Suggestion of a possible solution
4. Development by reasoning
5. Further observation and experiment leading to its acceptance or rejection (p. 144)

Dewey created the above schema to "offer a structure for teaching without cramping the teacher or the child" (Ryan, 1995, p. 145). He was a critic of the "boring,

rigid, hidebound, and authoritarian modes of teaching" that were prevalent when he was young (p. 282).

Thinking and Reflecting for Teachers

Dewey (1897/1972) noted that thinking and reflecting about learning experiences were necessary in order to provide the proper learning environment. As Tanner (1997) referenced Dewey's own words, "[the school] should combine psychological principles of learning with the principle of cooperative association" (p. 27). Dewey (1897/1972) expected educators to think about the experiences and meaning of educational activities. Further, he suggested asking psychological questions when regarding any subject of study:

1. What is that study, considered as a form of living, immediate, personal experience?
2. What is the interest in that experience?
3. What is the motive or stimulus to it?
4. How does it act and react with reference to other forms of experience?
5. How does it gradually differentiate itself from others?
6. And how does it function so as to give them additional definiteness and richness of meaning?
(Dewey, 1897/1972, p. 170)

What the School Is

Axtelle and Burnett (1970) reported that Dewey was aware that most schools in America were not social institutions that reflected community life. However, Dewey believed schools should be such an institution. In Democracy

and Education, Dewey (1916b) described the school as having the following duties:

1. Formal schooling provides "a simplified environment." There is an attempt to introduce the basic and essential elements.
2. The school is "a purified medium of action." This action introduces students to the culture of decent and honorable members.
3. The school should "balance the various elements in the social environment."
4. The various elements in life are the patterns which different individuals and groups exhibit.
5. The school should have the function of coordinating within the disposition of each individual the diverse influences of the various social environments into which he enters.
6. Schools should develop a sense of balance between the various modes of thinking, feeling, and acting of the social environment. (pp. 24-27)

In addition, Dewey (1897) envisioned the school experience as a "process of living and not a preparation for future living" (p. 230) and suggested that the educational process had "two sides-one psychological and one sociological" (p. 229). Dewey (1897) not only believed that students should learn in social environments, but he made sure his school created such settings. He stated, "A study is to be considered as bringing the child to realize the social scene of action" (Dewey, 1910/1970a, p. 44). For Dewey, even history would appear dead if not presented "from the sociological standpoint" (p. 49).

The intent of the school, according to Dewey (1910/1970b), was the "formation of a certain type of social

personality, with a certain attitude and equipment of working powers" (p. 160). Acknowledging the development of the science of individual psychology, Dewey (1933) stated that the findings of the former were unknown to "schoolmasters, or were thought of as too newfangled for consideration" (p. 443). He noticed an absence of the following understandings in teaching methods:

1. The human mind does not learn in a vacuum. The facts must have some relation to previous experience; learning proceeds from the concrete to the general.
2. Every individual is a little different from every other individual.
3. Individual effort is impossible without individual interest. (p. 443)

Dewey (1897/1972) observed that these questions provided insight into how a student "psychologized" scientific content to form a transformation into his/her own "impulses, interests, and powers" (p. 175). He advocated adopting "working hypotheses" from psychology and discovering the "educational counterparts" (Tanner, 1997, p. 15).

The teacher's role, according to Dewey (1929), was not to "impose certain ideas or to form certain habits in the child, but...to select the influences which shall affect the child and to assist him in properly responding to these influences" (p. 9). Experience was the determining factor

for the discipline of the child. Even the grading system referenced the child's "fitness for social life" (p. 9).

The Subject Matter of Education

Dewey explained that subject matter should be developed not from year-to-year, but "throughout the entire movement of the school" (Dewey, 1904/1977, p. 268). He warned against educating for the "status quo" (Dewey, 1934/1980b, p. 181). With new courses being rapidly added, he urged teachers to direct the changes (p. 182). He argued, "The first great step, as far as subject matter and method are concerned, is to make sure of an educational system that informs students about the present state of society" (p. 182). Then students would be able to "take their own active part in aggressive participation in bringing about a new social order" (p. 182).

Subject matter was best introduced in a gradual manner (Dewey, 1929). Dewey warned against "violating a child's nature" (p. 9) by introducing subjects too abruptly. The school subjects were based on students' "own social activities" instead of specific content areas. He warned against neglecting students' individual needs by teaching them "one set body of subject matter" (Dewey, 1937/1982e, p. 240).

For him, history was a reflection of the child's social life. Therefore, Dewey advocated "expressive or constructive activities...such as cooking, sewing, manual training, etc." (p. 11). He explained that development of new attitudes and interests replaced the succession of subjects. Education was a continuous "reconstruction of experience" (p. 12).

The Nature of Method

Learning Experiences

Dewey (1930/1984b) emphasized teaching where teachers and students both participated in educational experiences. He stated, "The teacher, because of greater maturity and wider knowledge, is the natural leader in shared activity, and is naturally accepted as such" (p. 322). He viewed the school as a place where "teachers' business is simply to determine on the basis of larger experience and riper wisdom how the discipline of life shall come to the child" (Dewey, 1897, p. 231). Dewey (1933/1986a) indicated that the "more a teacher is aware of the past experiences of students, of their hopes, desires, chief interests, the better will [students] understand" (p. 140).

Dewey (1897/1972) mentioned, "The child will never realize a fact or possess an idea which does not grow out of this equipment of experiences and interests which he already

has" (p. 173). For him, teaching was a success "if we can enlarge the child's experience by methods which resemble as nearly as possible the ways that the child has acquired his beginning experiences..." (Dewey, 1915, p. 72). According to Young (1972), Dewey's learning experience included "a reconstruction of facts and hypotheses" (p. 60).

In Democracy and Education, Dewey (1916b), characterized the aim of teaching as something concrete, meeting the following criteria:

1. An educational aim must be founded upon the intrinsic activities and needs of the given individual...
2. An aim must be capable of translation into a method of cooperating with the activities of those undergoing instruction.
3. Educators have to be on their guard against ends that are alleged to be general and ultimate.
(pp. 126-127)

Dewey (1916b) maintained that the impulses and experiences of the young should be "directed or guided" (p. 47). He noted that the aim "signifies that an activity has become intelligent" (p. 129). He also emphasized that aims were a part of educational experiences, with the teacher considering whether the work "possesses intrinsic continuity" (Dewey, 1916a, p. 251). He also declared that the aims should not dictate every action of the student, or permit "discontinuous action in the name of spontaneous self-expression" (p. 251).

Therefore, Dewey (1937/1982b) viewed education as developing "insight and understanding" (p. 411). His educational experiences had certain criterion for learning. One such criterion was "continuing growth...in a particular line" (Dewey, 1938a, p. 36). In addition, experience was thought to be a moving force that aroused "curiosity, strengthened initiative and set up a desire and purpose" (p. 38). Hence, the responsibility of the teacher was to determine the "direction of the experience" (p. 38).

Dewey (1938a) noted that experiences needed to be connected. He described the danger of creating a "split between the experience gained in more direct associations and what is acquired in schools" (Dewey, 1916b, p. 11). He explained that adequate control could be accomplished "through successive acts which could be brought into a continuous order" (p. 30) and acknowledged that "the principle of continuity of educative experience" (p. 74) was a more difficult problem. For him, going on "to something different" (p. 75) was not a solution. Therefore, teachers' roles were to lead students to new problems and "new fields which belong to experiences" (p. 74).

According to Dewey (1938a), experiences were developed through an interaction of events. He stated, "The beginning of instruction of the learner should be the experience the

learner already has" (p. 74). Students then move from one situation to another, hopefully "understanding and dealing effectively with the situations that follow" (p. 44).

"Situations" were described as interactions developing between the "individual...and his environment" (p. 43).

Unfortunately, Dewey's learning experiences were criticized for not leading to growth. He countered this criticism by making the point that the "principles of shared experience and continuity of development can be made to yield specific criteria" (Skilbeck, 1970, p. 19). His characteristics of growth were "flexibility, openness to new insights, new possibilities, hospitality to novelty, to the imaginative and to the creative" (Axtell, 1967, p. 66).

Dewey (1929) advised teachers to become investigators in the classroom. He called for the "command of scientific methods" so students would be able to "see new problems, devise new procedures" (p. 12). Dewey (1931) described the sources of educational science as "any portions of ascertained knowledge that enter into the heart, head and hands of educators, and...render the performance of the educational function more enlightened than it was before" (p. 76). It was a way of using concrete educational experiences as a source of inquiry for "intellectual investigation" (p. 56).

Instead of a traditional curriculum, Dewey (1936/1980) suggested searching for a "wider and more controlled range of interests and purposes" (p. 208). The teacher's problem was to choose information from the vast amount of factual material, and "to be ready to alter or discard whatever experiences proved unchallenging" (Depencier, 1967, p. 22). The difficulty was in "finding material which will engage a person in specific activities having an aim or purpose of moment or interest to him" (Dewey, 1916b, p. 155).

Dewey (1938a) stated, "The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative" (p. 25). He maintained that students should contribute from previous experiences, "no matter how meager or slender that background of experience" (Dewey, 1938/1988, p. 296). Dewey's (1934/1980) philosophy of education was based on a "process of development" (p. 195).

For Dewey, education was a "progressive movement away from the child's immature experience to experience that becomes more pregnant with meaning" (Bernstein, 1966, p. 142). Dewey (1916b) described the nervous strain that would result when attempting to "divorce bodily activity from the perception of meaning" (p. 165) and warned against teaching the "accumulated learning of adults" (Dewey, 1915,

p. 3). He offered, "Probably the greatest and commonest mistake that we all make is to forget that learning is a necessary incident of dealing with real situations" (p. 4).

In essence, "Any way is mechanical which narrows down the bodily activity so that a separation of body from mind... is set up" (Dewey, 1916b, p. 167). He noted that a body with no channels of activity would burst forth into "meaningless boisterousness" (p. 165). Dewey (1938a) criticized the traditional classroom for creating callous ideas, boredom, and drudgery and stated that drills left students without the "capacity to act intelligently in new situations" (p. 27).

According to Dewey, there must be understanding of "what we see, hear, and touch" (Dewey, 1938a, p. 68). He suggested, "It is, then, a sound instinct which identifies freedom with power to frame purposes and to execute or carry into effect purposes so framed" (p. 67). He believed a purpose started with an impulse and was transformed by observation. Dewey described the formation of purpose as a "complex intellectual operation" that involved the following:

1. Observation of surrounding conditions
2. Knowledge of what has happened in similar situations in the past...
3. Judgment which puts together what is observed and what is recalled to see what they signify (p. 69)

Teacher Expectations

Dewey (1923/1983c) noted his disappointment for teachers "not taking their full responsibility" (p. 161) in introducing students to possible solutions for the future. He stated, "So far as the teaching in the past has been concerned, the effect has been to leave the students with the feeling that they really did not have to solve problems" (p. 160). Dewey expected teachers to study the teaching process and to be responsible "for keeping constant watch and ward over the life of the child" (Dewey, 1909/1977a, p. 242).

Dewey (1909/1977a) did not consider the school as a place to learn only lessons, with the teachers feeling an end to their duty once they had given students a grade. In his words, this "reacts most disastrously upon the responsibility of the teacher and the child" (p. 242). According to Dewey (1933/1986a), "organic curiosity [was necessary] for binding the ends together in a sequence of inquiries and observations" (p. 143). Dewey placed emphasis on "knowing as a process, a process of discovery, of making connections and abstractions" (Young, 1972, p. 60). He warned that teachers should protect students' curiosity by not becoming dogmatic and abstaining from giving information

that "would dull the sharp edge of the inquiring spirit" (Dewey, 1933/1986a, p. 144).

Teachers had a "responsibility for the constant study of school room work, the constant study of children, of methods, and subject matter" (Dewey, 1913/1979b, p. 109). Therefore, Dewey expected teachers to have a "professional spirit" (p. 109). He explained that professional teachers did "not think their work was done [after preparing a specific] amount of subject matter and [spending] a certain number of hours in the school" (p. 109). Dewey (1913/1979b) stated that teachers of a "professional spirit" (p. 109) recognized there was a need for continuous intellectual growth.

In addition, Dewey's (1939/1988) expectations for educators expanded beyond normal classroom duties. He suggested that teachers prepare themselves for work by "becoming citizen members of the community in the most intimate way" (p. 352). Hence, Dewey expected teachers to become facilitators for social change. On a broader scale, Dewey (1937/1982a) foresaw teachers as the democratic leaders in forming public opinion and "dispositions" (p. 222). Seeing teachers in the midst of politics, he urged them to "to [maintain] the democratic way of life" (p. 236).

Dewey (1904/1977), seeing a need for theory and practice to be combined, expected teachers to "continue to be students of subject-matter, and students of mind-activity" (p. 256). He was against the separation of "means from ends" (Galgan, 1988, p. 217). Teachers could improve in the mechanics of teaching but not as an "inspirer and director of soul-life" (Dewey, 1904/1977, p. 256) if they were not students of teaching.

Dewey (1931) wanted to know why students could learn to read "and not yet form a taste for reading good literature" (p. 63). He called for a different way of teaching, different from the standard "perfunctory drill" (Dewey, 1916/1980b, p. 193). Good teaching, Dewey explained, would "require a degree of expertness in understanding people which is rarely achieved by teachers today" (Dewey, 1937/ 1987, p. 542).

In addition, Dewey (1934/1980) criticized teachers for not examining the interests or capacities of students. He expected teachers to adapt the living things in the world to "meet the requirements that make for growth in [the] individual" (p. 199). He observed that "attitudes and methods of approach and response" (p. 153) should correspond with the direction of the students' interests.

Dewey (1904/1977) considered the introduction of the "model lesson" (p. 257) to be a hindrance for educational development. He objected to "clear-cut and definite instructions as to just how to teach this or that" (p. 257). Dewey's (1909/1977b) distaste of ready-made material was associated with his referral to the traditional use of books and "teacher talk" (p. 203). He warned against surrounding material "with foreign attractiveness, or making a bid or offering a bribe" (p. 203).

When discussing the personal qualifications needed for teaching, Dewey (1938b) emphasized, "Those persons who are peculiarly subject to nervous strain and worry should not go into teaching" (p. 330). He observed that the "most depressing phases of the vocation" were the number of teachers with "anxiety depicted on the lines of their faces, reflected in their strained high pitched voices and sharp manners" (p. 330). He explained that for some teachers, "contact with the young is a privilege" (p. 330) and only those that could stay young "indefinitely and...retain a lively sympathy with the spirit of youth" (p. 331) should remain in the teaching profession.

According to Dewey (1938b), teachers should "stir up the minds of others" (p. 331) and have a "keen interest in some one branch of knowledge" (p. 332). He also emphasized

that teachers should have a "natural love of communicating knowledge" (p. 331). However, he did not expect teachers to have an in-depth knowledge of all subjects, but an "unusual love and aptitude in some one subject" (p. 332).

It was important, according to Dewey (1917/1980a), to "find teachers who are themselves capable of assuming the experimental attitude" (p. 123). By his standards, a direct education for students was not desirable. It seemingly fixed "attention of pupils upon the demands [of] teacher and text-book...instead of the demands of the subject-matter [and] moving the medium of individual thought and endeavor" (Dewey, 1909/1977a, p. 247). Dewey (1917/1980a) stated, "For the present, the greatest contribution which any one experimental school can make to education is precisely the idea of experiment itself" (p. 123).

Dewey (1922) encouraged teachers to experiment with science and to break away from "old ways and results" (p. 273). He called the notion of omitting experimental failures and achievements "pathetic" (p. 273). He sought an environment for creating adventurous minds despite the docile young who became "docile teachers" (p. 272). Dewey claimed that "a new personal attitude in which a teacher shall be an inventive pioneer" (p. 273) was needed.

For Dewey (1924/1983), classroom teachers were artists, capable of teaching on an individual basis. "The tendency toward treating students in masses and classes rather than individually results in the comparative ease and comfort there is in working with a smoothly-running machine" (p. 180). For teachers to be successful, they had to be "informed about individual capacities, abilities, and weaknesses...in order to adapt their teaching to these varying conditions" (Dewey, 1923/1983d, p. 192).

Accordingly, Dewey (1923/1983a) observed that teachers emphasized uniformity "instead of encouraging individuality" (p. 172). He advocated creating a "distinctive [individual]...in a more or less unconscious way" (p. 172). However, Dewey warned against giving students a kind of "bumptiousness" (p. 172) where the student gained an "exaggerated idea of his own importance" (p. 172).

Dewey (1923/1983a) stated, "The problem of developing the individual is not a problem of isolating the child... but in finding some community project [where the individual can make his or her own] contribution" (p. 178). He considered individuality as a "matter of spirit, of soul, and the way in which one enters into cooperative relations with others" (p. 179). He believed the "whole scheme"

included "demonstration, observation and experimentation" (Dewey, 1972, p. 434).

For Dewey (1928/1984b), discovering students' "real needs, desires, interests, capacities, and weaknesses" was more beneficial than "direct prodding" (Dewey, p. 264). He advised educators to create worthwhile activities for students. However, Dewey (1916b) did not agree "that all minds work in the same way because they happen to have the same teacher and textbook" (p. 153). Therefore, Dewey (1938a) described the teachers' responsibility as ensuring that the learning "occasion is taken advantage of" (p. 71).

The guidance by teachers' served as an aid to intellectual freedom, instead of a "restriction" (Dewey, 1938a, p. 71) upon learning. Dewey thought teachers should be "intelligently aware of the capacities, needs, and past experiences of those under instruction to allow a suggestion to develop into a plan" (pp. 71-72). Hence, the teaching environment was described as "give and take, the teacher[s] taking but not being afraid also to give" (p. 72).

Objectives.

Dewey considered planning objectives for students' learning an important part of teachers' day-to-day preparation. He maintained that teachers created the

"objective conditions" for learning, even though "they [educators] did not consider the other factor in creating an experience...the powers and purposes of those taught" (Dewey, 1938a, p. 45). However, Dewey (1930/1984a) noted a problem relating to how objectives were determined and raised the following questions:

1. How far should the educational process be autonomous and how can it be made such in fact?
2. To what extent is it true that in spite of formulation of objectives by leaders, the educational system as a whole is goalless, so much so that there is no common and contagious enthusiasm in the teaching body, a condition due to lack of consciousness of its social possibilities?
3. Can a vital professional spirit among teachers be developed...?
Is it true that the individuality and freedom of the classroom teacher are lessening?
4. Can the power of independent and critical thinking... be attained when the field of thought is restricted...?
5. What are the concrete handicaps to development of desire and ability for democratic social cooperation?
6. How far does the principle of accepted learning extend to the structure of economic and political activities?
7. How far is the working purpose of present school work to prepare the individual for personal success?
8. How far can and should the schools deal with such questions as arise from racial color and class contact and prejudice?
9. Does the teaching of patriotism tend toward antagonism toward other people? (pp. 328-329)

Dewey (1930/1984a) explained that these questions were tied together by "certain convictions" (p. 330).

First, "objectives" [tended to become] "formal unless related to the actual school work" (p.330). Second, he stated, "The isolation of school from life is the chief cause for both inefficiency and lack of vitality in the work of instruction" (p. 330). Third, "the closer connection of school with life cannot be achieved without serious and continued attention by the teaching body" (p. 330). Fourth, "it is necessary to enlist the efforts" of the "classroom teacher, in consideration of social responsibilities of the school" (p. 330). What was needed, according to Dewey, was for the "teacher profession to claim actively and in an organized way its own autonomy" (p. 330).

Evaluation.

Dewey (1909/1977a) recommended that teachers reconsider their methods of evaluation. He urged, "Competitive motives and methods must be abandoned for cooperative methods" (p. 97). According to Dewey, a rigid disciplinary ideal of "set lessons" created a "soft pedagogy" (p. 244) where students would not reach their best capability. In addition, he disapproved of assigning grades to students, and claimed that the examination system created a "demoralizing standard by which the students come to judge their own work" (p. 243). The result was the "tendency...to

suppose that one is doing well enough if he comes up to the average expectation" (p. 243).

Discipline.

Another priority for teaching was discipline in the classroom. Dewey (1916b) conveyed an unconventional meaning for discipline and did not suggest that it was a means for punitive behavior control. His definition of discipline included "the outgrowth of a shared community life" (Dewey, 1936/1982, p. 194). To him, "Discipline means power at command mastery of the resources available for carrying through the action undertaken" (Dewey, 1916b, p. 151). Dewey (1916b) explained, "A person who is trained to consider his actions, to undertake them deliberately, is... disciplined" (p. 151). "The difficulty was to give an account of the educational experience that would elicit a kind of discipline, an approach to the syllabus and to the authority of the teacher in the classroom that would grow out of experience itself" (Ryan, 1995, p. 282).

Teacher Training

Dewey (1896) understood that a practice-teaching course was necessary in order to develop personal relationships between teachers and students. By introducing a training course, teachers would have the opportunity to develop "sympathy and psychological insight" (p. 8) for teaching.

The training course allowed soon-to-be teachers to develop as helpers while dealing with individual students.

However, Dewey (1928/1984a) recognized the complexity of teacher training. He stated, "The training of teachers is no longer a mere matter of equipping students having a somewhat inadequate prior intellectual preparation with the means by which to deal with the immediate problems of the schoolroom" (p. 254). He viewed teaching as a "complex and diversified problem that should be investigated" (p. 254).

Future teachers were to be given time to teach, unsupervised, with sufficient time to "recover from the shocks incident to the newness of the situation" (Dewey, 1904/1977, p. 269). Dewey noted that experienced teachers should encourage student teachers to "judge his own work critically, to find out for himself in what respects he has succeeded and in what failed" (p. 270). He suggested that criticism should not fall upon the teacher after every lesson. The end result, according to Dewey, was to "develop a thoughtful and independent teacher" (p. 270).

With much insight, Dewey (1904/1977) described the ways of making practice-teacher experiences seem "unreal" (p. 253). To him, the children were so safeguarded from the future teachers that it was like trying "to swim without

going too near the water" (p. 252). He observed that some practice-teachers were faced with the following conditions:

1. Deprivation of responsibility for the discipline
2. The continued presence of an expert
3. Close supervision
4. Reduction of size of group taught (p. 252)

For Dewey (1904/1977), the two major problems practice-teachers faced were mastery of subject matter and mastery of class management. He noted that practice teachers "cannot give equal attention to both at the same time" (p. 253). These two problems were explained as an "inner attention" and "external attention" (p. 254). The inner attention required mental play and the ability to keep track and to "recognize the signs of its presence or absence...and the ability to discriminate the genuine from the sham, and capacity to further one and discourage the other" (p. 254). Teaching from a book represented the external attention.

According to Dewey (1904/1977), a beginning teacher relied too heavily on external attention. He also observed an absence of psychological insight "which enables [teachers] to judge promptly and therefore almost automatically" (p. 255). Teachers' efforts were spent keeping order and focusing attention on questions, instructions, and lessons. Controlling habits were formed with "little reference to principles in the psychology, logic, and history of education" (p. 255).

Critiquing Methods of Teaching

Dewey objected to using a single technique as the sole method of instruction. For example, he was alarmed that teachers were presenting movies at the "end of instruction" (Dewey, 1913/1979a, p. 107). The exception was made "if teachers have sense enough to use the pictures and talk them over in a sensible way, allowing the information to soak in naturally" (p. 107).

When discussing projects as a teaching method, Dewey (1931) agreed that it was possible to find projects and problems that were in the interest of the learner, but that the scope should not be "trivial" (p. 31). According to him, there should be constant judgment of relationships upon a "central theme" (p. 34) with the "project, problem or situation" method serving as an "alternative, to... traditional divisions and classifications of knowledge" (p. 30). Dewey described students with proper projects as being "overtly active" and putting "knowledge to the test of operation" (p. 35). He stated that because of the constructive learning, "the separation between the practical and the liberal does not even arise" (p. 35).

Tanner (1997) wrote, "It is widely believed that the curriculum in Dewey's school consisted of series of projects" (p. 64). However, Tanner surmised that this

belief was inaccurate. In addition to projects, Dewey suggested that teachers use a "number of approaches—including discussion, fieldtrips, writing, laboratory experiments, and experiences in the practical and fine arts" (p. 64).

The School and Social Progress

As Dewey emphasized, teachers should connect classroom learning with social progress (Dworkin, 1959). He remarked, "The special expertness of the teacher is needed to improve the educative influence of the social event of institution" (Dewey, 1937/1987, p. 541). He declared, "I believe that the only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself" (p. 20). Accordingly, teachers were expected to create a "laboratory in which life is tried out" in order to become a "test-tube for social living" (Dewey, 1937/1987, p. 541).

Progressive Schools

Dewey's philosophy for achieving a better education became synonymous with the goals of the progressive movement. His association with the progressive movement was in response to the need for a different type of education. For him, a progressive school was primarily concerned with growth, "transforming existing capacities and experiences"

into possibilities (1928/1984b, p. 261). Dewey (1933) said "that learning is not necessarily disagreeable is the discovery, or rediscovery, of modern progressive education" (p. 448). The progressive schools provided "greater attention to distinctively individual needs and characteristics" (p. 448).

A primary focus of progressive schools was to insure an education that was conducive to growth (Dewey, 1916b). Dewey viewed growth as a continuing process, not an end to itself (Nathanson, 1951). He stated, "Growth is the criterion for judging individual behavior much the same way democracy is the criterion for judging social relationships" (Dewey, 1916b, p. 63).

Dewey (1934/1980) thought traditional schools failed in the following ways:

1. They ignore the diversity of capacities and needs of different human beings.
2. They fail to recognize that the initiative in growth comes from the needs and powers of the pupil.
3. The third failure is a result of the first two:
4. Every teacher must observe that there are real differences among pupils. (pp. 196-197).

The Dewey Laboratory School

After years of writing about how students should learn and how teachers should teach, Dewey began his own school: The University of Chicago Laboratory School. It was a place where teachers and students practiced reflective thinking,

problem-solving, and enhanced learning experiences through active participation in the curriculum. It was instilled with democratic ideals and an "experimental attitude"

(Dewey, 1917/1980a, p. 123). Dewey's Lab School focused on the following four points:

1. How can the school be brought closer in relation to the home and neighborhood life?
2. How can history and science and art be introduced so that they will be of positive value and have real significance in the child's own present experience?
3. How can formal instruction, including the mastery of reading, writing, and using figures intelligently, be gained from other studies and occupations?
4. Individual attention is gained by having small groups of children and a large number of teachers. (Mayhew & Edwards, 1965, p. 24)

At Dewey's Lab School, the question of how to improve learning was at the forefront of teaching. Students explored their interests with the guidance of teachers and learning evolved into a science. Observing, recording data, and drawing conclusions were a natural process in the classroom.

The experimental environment was based on "discovery through search, through inquiry, through testing, through observation and reflection" (Dewey, 1932/1985, p. 109).

Dewey described the laboratory type of education as placing "more responsibility on the students" (p. 109). Students

were encouraged to think instead of merely absorbing and reproducing lessons.

According to Bernstein (1966), Dewey increasingly "saw the need to apply the methods of the sciences to the study of human phenomena" (p. 38). "The Laboratory School was conceived in the spirit of experimentation as a place where one could test hypotheses and learn more about the psychology of the child. The school provided an opportunity to test and refine the ideas about human nature that had been evolving in [Dewey's] various investigations" (Bernstein, 1966, p. 38). However, as Ryan (1995) noted, it was not a vision of an "experimental school," but "a place permeated by the experimental spirit" (p. 147).

According to Meriam (1965), the following traits were evident at the Dewey Lab School:

1. Dewey's school was not self-contained. Students were in contact with several teachers during the day.
2. Dewey's school was democratic.
3. Dewey's school operated through a longer school day with no long ones (breaks) in summer.
4. Dewey's school discontinued the traditional school subjects as such.
5. Dewey's school encouraged in each pupil his greatest achievement possible. Examinations were not formal tests.
6. Discipline in Dewey's school was an exacting demand. Dewey's school provided wholesome play as inherent in the program.
7. Dewey's school provided wholesome play as an inherent portion of the program, not a recess for relaxation.

8. His school represented his social philosophy - Learning? Certainly, but living primarily. (pp. 22-24)

Dewey's expectations of teachers were modeled at the Dewey Lab School. According to Ryan (1995), the school placed "appalling" (p. 147) demands on teachers and few of them possessed the range of skills necessary to enhance the students' many stages of growth. However, the original principles were "worked out by the teachers themselves cooperatively" (Mayhew & Edwards, 1965, p. 366). "The development of concrete material and of methods of dealing with it was wholly in the hand of the teachers" (p. 367).

Teachers conducted a "constant conference" (Mayhew & Edwards, 1965, p. 367) with each other and informal communication was encouraged among teachers. The "daily contact of teachers at lunch" (Dewey, 1936/1982, p. 198) and transfer of students from one teacher to another was important in establishing the success of previous classes. According to Baker (as cited in Tanner, 1997), there was a "daily, even hourly interchange of ideas among teachers and children, where purposes were formed and plans were made to execute them" (p. 148).

Meetings were held to find similarities among the subjects that were taught. Dewey, being an active

participant at these meetings, asked the following questions about the teaching methods (Mayhew & Edwards, 1965):

1. Is there any common denominator in the teaching process?
2. Is the intellectual aim single or multiple?
3. Is there any normal process of the mind which corresponds to this end which we want to reach, and if so, what is it?
4. What is the significance of the various lines of study taken up toward reaching this end? (p. 368)

The continual exchange of ideas among teachers made "flexibility and capacity of growth" a necessity (Dewey, 1936/1982, p. 199). Dewey explained that there was no need "to magnify the authority from the superintendent, principal or director" (p. 198). Those teachers that lacked the "required flexibility and capacity of growth" (p. 199) were eliminated because they did not belong.

Teachers also met weekly to review the "work of the week" (Dewey, 1936/1982, p. 197) and to make the necessary modifications. The "reports on individual children" related principles of adjustment to the "subject matter" (p. 197). However, Dewey stated, "The younger and less experienced teachers...often failed to see this connection and were inclined to be impatient with the personal phase of the discussion" (p. 198).

It was important for teachers to "minister constantly to the changing needs and interests of the growing child's experience" (Mayhew & Edwards, 1965, p. 20), with children

grouped according to their interests and social compatibility. "There were no comparisons of the work of children, who, with some few exceptions, never asked the teacher for judgments or rankings or even comments on their work" (Mayhew & Edward, 1965, p. 376). Motivation by "marks" (p. 376) was never used. Therefore, "written or oral review took the place of examination" (p. 376) in order for students "to get a consciousness of his own power and ability" (p. 369).

It was not unusual for classes to have a "free exchange of ideas," (Mayhew & Edwards, 1965, p. 274) with a certain amount of uncertainty. The "ideas formed by the group" (p. 274) were tested. As children grew older, discussions became more detailed and the "experiences of their own past more frequently leaped into consciousness" (p. 274). "Written reports, records, and stories" (p. 275) were introduced after communication skills had been acquired. The spirit of "physical and mental freedom" (Mayhew & Edwards, 1965, p. 402) was evident as children maintained a "test and see for yourself attitude" (p. 403).

For Dewey, "The need of specialists whose backgrounds and training had fitted them for teaching certain subjects became apparent" (Mayhew & Edward, 1965, p. 42). The goal was to utilize the child's natural tendencies: "the social

impulse, the constructive impulse, the impulse to investigate and experiment, and the expressive impulse" (pp. 40-41). Dewey's Lab School created a learning environment where students could do what they wanted to do while developing "social or intellectual relations" (Mayhew & Edward, 1965, p. 42). The school was conducted "as a form of home and community" (Meriam, 1965, p. 21) where a "home-like atmosphere" (Mayhew & Edwards, 1965, p. 402) was commonplace. It was a true place of learning.

Summary

Dewey's educational theories and practices were surveyed in order to compare them to the research of expert and effective teaching. Dewey's writings from the late 1800's through the early 1900's were included in this review. Dewey's views of teaching culminated with examples from the Dewey Lab School, highlighting necessary characteristics for ideal teaching.

The concept of "what education is", according to Dewey (1897), formed a basis for ideal teaching. Democracy was an important part of the education process, with ethics and psychology forming a basis for studying students. Instead of teaching a separate course of ethics, he advocated a moral teaching that included the "life-process of the school" (Dewey, 1893/1971, p. 60). Attitudes of open-

mindedness, whole-heartedness and responsibility were cultivated through thinking and reflecting.

When Dewey described what the school is, he expected the educational institutions to create social environments that reflected community life. The teachers' role was not to impose certain ideas, but to select experiences that affected the child's social personality. He stated that teachers should become acquainted with the students' past experiences in order to understand the scheme of education. Accordingly, the school provided the setting where individual interest was combined with individual effort.

The subject matter of education was developed throughout the entire schooling of students. Dewey (1929) noted that school subjects were based on students' "social activities" (p. 10). With the guidance of teachers, students were placed on a continuum that connected the curriculum from one subject to another and from one grade to another. Subjects were gradually introduced so students' learning would not be interrupted and continued from grade-to-grade.

Dewey's nature of method focused on meaningful learning experiences, which began with students' interests. Experiences were planned so the "child's immature experience" (Bernstein, 1966, p. 142) became more

meaningful. Both teachers and students were expected to think about the learning experiences and to connect the classroom with the outside environment. Dewey (1909/1977a) explained that students must be lead to owning a problem.

He also noted that the impulses and experiences of students were best guided by educational aims. For him, the aim "signifies that an activity has become intelligent" (Dewey, 1916b, p. 129). Knowing the students' individual interests meant that a teacher's job was not over when the students received a grade. For Dewey, teachers should be dedicated beyond the usual workday and delve below the surface of a problem. He alleged that teachers should learn to judge promptly and automatically without relying on external attention. What was needed was a strong professional spirit that did not end once the school day was over. In his judgment, a docile teacher had no place in the educational setting.

Instead of punitive consequences, teachers practiced a new definition for discipline. Students were disciplined by becoming actively involved in the learning process. Evaluations such as interviews and observations replaced traditional testing. In contrast to competitive activities of traditional schools, a cooperative social setting was created.

However, Dewey (1928/1984a) acknowledged the "complex and diversified" (p. 28) problems of teaching. According to him, teacher training allowed student teachers time to teach with sufficient time to "recover from the shocks...of the situation" (p. 269). He suggested that experienced teachers should encourage student teachers without adverse daily criticism.

From Dewey's beliefs about education and teaching, he started a school of his own: The University of Chicago Laboratory School. As Bernstein (1966) remarked, Dewey "saw the need to apply the methods of the sciences to the study of human phenomena" (p. 38). Hence, the Dewey Lab School was conceived in the "spirit of experimentation" (p. 38). Teachers constantly reflected about teaching and students explored their interests in relation to "the home and [the] neighborhood life" (Dewey, 1917/1980a, p. 24). Teaching ideals were developed at the Dewey Lab School.

However, ideal teaching extended beyond the basic content areas of the classroom. Dewey believed students should be prepared for maintaining a democratic society. An advocate for improving education, Dewey motivated teachers to create social change through the educational process. (See Table 5 for a listing of Dewey's ideal teaching characteristics.)

Table 5

Dewey's Ideal Teaching Characteristics

Teaching Beliefs For Educational Purpose

Democratic setting - social and moral focus
 Ethical relationships
 Psychological and social aspects
 Active construction of lessons
 Thinking and reflecting
 Cultivated attitudes - responsibility, open-mindedness
 Student ownership of problems

Teaching Beliefs About What School Is

Basic and essential elements
 Balanced social environment
 Coordination of experiences with environment
 Process of living
 Individual interests

Teaching Beliefs for Subject Matter

Subject-matter for movement of entire school experience, not year-to-year
 Inform students about society
 Reflects child's life
 Continuous reconstruction of experiences

Nature of Teaching Methods

(Student expectations)
 Connecting past experiences
 Aims that develop insight
 Continual growth, sequential child development
 Interact with the environment
 Scientific methods
 Purpose and meaning
 (Teacher expectations)
 Problem solving
 Professional spirit
 Social change and democratic leadership
 Student of teaching process
 Adapt the living things
 Against "model lesson"
 Stay young indefinitely, no anxiety
 Experimental attitude
 Individual needs
 Objectives
 Unique evaluations, no grades
 Connect interests and discipline

Table 5 (continued)

Nature of Teaching Methods

(Teacher expectations)

Variety of methods

(Teacher training)

Mastery of subject and classroom management

Preservice Training - No close supervision, judge success, work with small groups of students

Teaching Beliefs about the School and Social Progress

Connecting classroom learning with social progress

Greater attention to individual needs

Learning by living

Teacher flexibility and capacity for growth

Free exchange of ideas

Physical and mental freedom

Home-like atmosphere

CHAPTER 4

REVIEW OF RALPH TYLER'S IDEAS ABOUT TEACHING

Ralph Tyler, perhaps best known for defining behavioral objectives, also devoted much attention to teaching. He expected teachers to consider the process of educating students. In this chapter, examples of Tyler's views of ideal teaching are discussed according to the organization of his book, Basic Principles of Curriculum and Instruction.

To begin with, Tyler's views for defining educational purposes are reviewed. The method of selecting learning experiences is then defined. Next, Tyler's expectations for organizing objectives are discussed. Finally, Tyler's suggestions for evaluating learning experiences are included in this chapter.

Educational Purposes

According to Tyler (1949), educators should ask what needs of the student are not being met, and whether it is the role of the school to fill this "gap" (p. 6). He suggested studying contemporary life so inferences could be made "regarding gaps, emphases and needs" (p. 22). For him, selecting objectives was a vital part of teaching students.

However, he suggested that before making any decisions about learning objectives, the student should be investigated.

As Tyler (1949) stated, "A study of the learners themselves would seek to identify needed changes in behavior patterns of the students which the educational institution should seek to produce" (p. 6). Tyler explained, "If the school situations deal with matters of interest to the learner he will actively participate" (p. 11). The interests were a "starting point for effective instruction" (p. 11). He did, however, warn that "objectives are not automatically identified" (Tyler, 1949, p. 15) by studying the students. The data must be compared with "norms or standards in the field" to identify "possible needs that a school program could meet" (p. 14).

Tyler (1933) advised teachers to include "psychological conceptions" (p. 289) of students in order to discover the most effective means for learning. He stated that a student was "much more likely to apply his learning when he recognized the similarity between the situations encountered in life and the situations in which the learning took place" (p. 18). Tyler (1949) explained, "The point of view taken in this course is that no single source of information is

adequate to provide a basis for wise and comprehensive decisions about the objectives of the school" (p. 5).

According to Tyler, (1949) a clear objective included both the "behavioral and content aspects" (p. 47). He advised selecting educational objectives according to an "educational and social philosophy" (p. 34). Educational objectives would then reveal "the kinds of behavior patterns" (p. 34) that would be useful for the school setting. Therefore it was necessary for the philosophy to be "stated clearly for the implications for educational objectives to be spelled out" (p. 37). He also advised checking objectives to evaluate them for attainability, appropriateness, and for being "too general or too specific" (p. 43).

Tyler (1959) advocated that teachers should have a set purpose with "creative ingenuity" (p. 49) for reaching predetermined objectives. He noted that too many objectives "results in the instructor being unable to keep in mind the different kinds of behavioral objectives to be sought" (Tyler, 1949, p. 57). "General objectives are desirable" (p. 57) and should "describe or illustrate the kind of behavior the student is expected to acquire" (p. 59). Tyler (1949) listed the following categories of behavioral objectives:

1. The acquisition of information
2. The development of work habits and study skills
3. The development of effective ways of thinking
4. The development of social attitudes
5. The development of interests
6. The development of appreciations
7. The development of sensitivities
8. The development of personal social adjustment
9. The maintenance of physical health
10. The development of a philosophy of life (Tyler, 1949, p. 58)

When deciding on feasible goals, Tyler (1949) noted that "the psychology of learning" provided an idea of "the length of time required to attain an objective and the age levels at which the effort is most efficiently employed" (p. 38). The objectives should be appropriate for "particular points in the sequence of the educational program" (p. 39) and for particular age levels. Opportunities to "use [the] knowledge in daily life" (p. 39) are also important for the learning process. In addition, Tyler explained, "Most experiences produce multiple outcomes" (p. 40). Therefore, instruction should "capitalize on the multiple results possible from each experience" (p. 41). Tyler (1948b) also recognized the following weaknesses in the area of objectives:

1. Failure to set up objectives
2. Failure of many teachers to define their objectives clearly
3. A concentration on a few objectives which are really less important
4. The practice of setting up more objectives than can actually be attained (pp. 388-389)

Tyler (1948b) proposed that the objectives should be broad enough to include educational "contributions to society, to the needs of the pupils, and to the improvement of mankind" (p. 390). To him, covering material without any thought to variable conditions or ends to be reached was "teaching blindly" (p. 388). He suggested that teachers study "contemporary reports of professional committees" (p. 391) to obtain ideas for objectives related to the development of students. Tyler noted that teachers should ask the following questions about students when making decisions about objectives:

1. What have they already learned?
2. What gaps are there in their accomplishments?
3. What are their interests and needs? (p. 390)

Tyler (1952) remarked that needs should not be confused with "interests, wants, and problems recognized by the student" (p. 526). He defined needs as the disparity between a desirable situation and the present condition. He acknowledged that students might be unaware of their needs. According to Tyler, education met the needs of students by changing patterns of behavior and offering "new patterns of reaction, thinking, feeling, and acting" (p. 526).

Tyler (1951) attributed "satisfying a need through the learning process" (p. 267) as a way to motivate students to

learn. He recognized social needs as a powerful way to motivate students. "The recent attention given to group dynamics and the current emphasis on the social psychology involved in group learning illustrate the application of the concept of social needs...to teaching" (Tyler, 1951, p. 267).

Tyler (1949) acknowledged that the broad needs of students could be broken down into phases:

1. Health
2. Social relationships
3. Socio-civic relationships
4. The consumer aspects of life
5. Occupational life
6. Recreational (p. 9)

Tyler (1949) realized that these were not all of the needs and that they would differ depending on the school and the groups within the school. He recommended studying the needs of students through observations, student interviews, parent interviews, and questionnaires in addition to standardized tests. Once the data had been gathered, it was the schools' role to "distinguish between the needs that are met by education and the needs met through other social agencies" (p. 15). Accordingly, "One of the problems of education is to channel the means by which these needs are met so that the resulting behavior is socially acceptable" (Tyler, 1949, p. 7).

He also noted that intellectual needs were a way to motivate students. Tyler (1951) proposed that teachers present challenging phenomena about the students' environment and raise questions that cannot be immediately answered. He explained the importance of associating activities with other activities that are already interesting. However, he warned, the students' attitudes about the content should be examined "so that the teacher may understand what meanings it will have for them" (Tyler, 1951, p. 268).

Selecting Learning Experiences

According to Tyler (1971), if a child was deprived of learning what was important, then a "problem learner" was created. In his experiences, he observed, "It's rare to find a child who can't learn something he wants to learn" (p. 53). Tyler (1949) suggested following certain principles for selecting learning experiences:

1. Give an opportunity for practice
2. Gains satisfaction from carrying on the kind of behavior implied by the objectives
3. Experiences are appropriate to the student's present attainments...
4. Many particular experiences can be used to attain the same educational objectives
5. The same learning experience will usually bring about several outcomes (pp. 66-67)

Tyler advocated that schools provide the opportunity for "organizing, interpreting, reflecting upon, and making

sense out of the ideas that we already have" (Russell & Tyler, 1940, p. 415). In order to create strategies for learning, Tyler (1971) suggested asking the following questions:

1. How does learning take place?
2. How can we help build a bridge so that, step by step, a disadvantaged child can gain confidence, experience success and begin to get the rewards of learning?
3. How can we help him apply what he has learned in school to his life outside school? (p. 53)

Further, Tyler recognized that students learn in different ways (Russell & Tyler, 1940, p. 415). He emphasized choosing material according to "ethnic, geographic, and economic factors" (Lackey & Rowls, 1989, p. 100). Tyler (1989b) listed the following additional principles for enhancing the learning experience:

1. The student must have experiences that provide practice.
2. The learning experiences must be satisfying.
3. The motivation of the learner is an important condition.
4. He is stimulated to try new ways of learning.
5. The learner should have some guidance.
6. The learner should have ample materials.
7. The learner should have time to carry on the behavior until it becomes part of the repertoire.
8. The learner should have opportunity for a good deal of sequential practice.
9. The learner should set standards beyond the present behavior.
10. The learner should be able to judge the performance without the help of a teacher in order to continue learning. (p. 205)

Tyler (1971) believed that learning was a lifelong process and that teachers should take the time to consider the proper objectives. He warned that education should not include all the educational experiences needed by youth, but should provide a balance that would "provide a well-rounded program" (Tyler, 1944, p. 402). In order for students to have an "opportunity to practice the kind of behavior implied by the objective...a student must have experiences" (p. 65) for learning. Tyler (1948c) indicated the following potential weaknesses when planning the learning experiences:

1. Lack of meaning
2. Lack of motivation
3. Exclusive preoccupation with verbal media of learning
4. Failure to achieve sequence and integration
5. Watering down with memorization (pp. 301-302)

Tyler (1949) emphasized the active learner when selecting educational objectives and stated that "learning takes place through the active behavior of the student" (p. 63). He observed that a student learns from what "he does...not what the teacher does" (p. 63) and explained that the goal was to create an "active participant" (Tyler, 1989b, p. 203). For him, "Too little pupil activity or too little variety...results in loss of interest and consequent failure" (Waples & Tyler, 1930, p. 231). However, Tyler (Waples & Tyler, 1930) warned, "Too much pupil activity... results in loss of time and in the learning of much that is

irrelevant to the course" (p. 231). If all the learning factors were under the students' control, than this would lead to undisciplined behavior (Tyler, 1989b).

Tyler (1949) acknowledged that "the most difficult problem is setting up learning experiences to try to make interesting...an activity which has become boring" (p. 81). He observed that the criterion of interest and meaningfulness was overlooked, and that the initial objectives should begin with the students' interests. As students gain a greater understanding of knowledge, then they would be stimulated to "broaden and deepen their interests" and to "develop interest in other objectives" (Tyler, 1976c, p. 63).

Tyler (1949) explained, "Interests tend to focus behavior in particular directions" (p. 79). He emphasized the need for continued learning (Tyler, 1965). Tyler (1976c) offered the following standards for selecting objectives:

1. Stress those things that are important for students to learn in order to participate constructively in contemporary society
2. Be sound in terms of the subject matter involved
3. Be in accord with the educational philosophy of the institution. (p. 63)

As Tyler (1976c) admonished, "Where possible and appropriate, the students themselves should participate in

planning and evaluating the curriculum" (p. 65). He also advised giving greater "emphasis to the need for a comprehensive examination of the non-school areas of student learning" (Tyler, 1977b, p. 11). For ideal learning, teachers' work in the classroom must link "the school and the community" (Tyler, 1971, p. 3).

For students to have an opportunity to use the objective in their own daily life, Tyler (1948b) requested that teachers examine each objective and ask the following questions:

1. How can this objective be applied to the home experiences of the student, to his life in the community, to his school experiences?
2. Can the students actually be aided to apply this behavior in the community?
3. How could this activity be modified to involve more and varied aspects of the pupils' lives?
4. How could it have wider applicability to this community? (p. 395)

Tyler (1976c) criticized the practice of overloading students with too much knowledge. The terms, "educational delivery system" and "teacher proof materials" (p. 63) indicated a stifled learning process. He explained, "When more material is presented to students than they have time to treat in this way, they attempt to memorize it by rote and to parrot back statements from their textbooks" (Tyler, 1965, p. 145).

Tyler (1949) postulated that the selection of learning experiences may be inadequate where the following is present: "memorization without understanding," "a rapid rate of forgetting," "isolated bits" of information, a tendency to remember with "the degree of vagueness and the large number of inaccuracies" and finding dependable sources for identifying "accurate and recent information" (pp. 72-73). In order to overcome these problems, Tyler (1949) recommended combining information with problem solving, varying context and intensity, and frequently organizing and using the information. He warned against reducing objectives to "oversimplified activities" (Tyler, 1976a, p. 87) that will "likely...destroy the essential human characteristics of intelligent behavior that the school seeks to develop" (p. 87). He described six approaches to improve learning experiences:

1. Concentrate major efforts on important tasks
2. Curriculum is periodically updated
3. Learning must be organized over time
4. Select material that is understood by student and used effectively
5. Work out better sequences of learning
6. Give careful attention to efficient learning
(Tyler, 1965, pp. 146-147)

According to Tyler (1948b), learning experiences should include a variety of "verbal, pictorial, auditory, and direct experiences in the laboratory and in the community" (p. 394). He admitted that plans for learning were

sometimes too inflexible and eliminated spontaneity.

Therefore, he stressed that learning experiences maintain flexibility for "particular situations that arise" (p. 394).

Tyler realized that students have varied learning rates, and suggested that mastery learning techniques should be implemented in order to create "some kind of individualization scheme" (Lackey, Jr. & Rowley, 1989, p. 82). According to Tyler, "Effective mastery learning cannot take place unless there is a connecting thread that runs through all the lessons like the string in a pearl necklace" (p. 83). Tyler (1971) also insisted students should have opportunities to develop what is learned into a "normal repertoire of behavior" (p. 3). He explained, "Learning of a positive sort requires the effort and involvement of the learner" (p. 3). In order for education to become relevant, learning must be incorporated into students' "daily round of living" (p. 3).

Tyler (1976a) attributed inadequate learning to the "inadequacy of the learning conditions provided" (p. 21). He stated, "Force is an ineffective incentive to learn to do something" (Tyler, 1971, p. 3). He observed that learning experiences should include a review of society's problems which added "meaning to the curriculum, increased student

interest, and extended the media of learning beyond purely verbal exchange" (Tyler, 1948c, p. 304).

When discussing specific examples, Tyler (1948b) gave advice for improving the selection of learning experiences at the high school level. He described the problem of depending on a large amount of textbook assignments with very little less formal teaching. He observed the "failure to relate learning experiences to the objectives sought" (p. 392). Tyler explained that learning experiences were needed in order to allow students to "practice under conditions which give meaning to it and which motivate the learner" (p. 392).

Tyler (1948b) objected to selecting learning experiences without showing students the connection of learning activities. His vision of teaching included matching the learning experience to the student. However, Tyler (1948b) emphasized that if students were not interested in learning experiences, then learning would be limited.

Tyler also believed teachers should teach all students, regardless of their background (Lackey, Jr. & Rowls, 1989). He noted that teachers must "facilitate learning at all levels" and that teaching "cannot be met by following set rules" (Tyler, 1959, p. 49). Students must do more than

read about or discuss a topic in order to apply the knowledge to everyday situations. He advocated that learning about "objects, activities, and problems does not necessarily provide the student with the equipment to deal intelligently with problems that may arise" (Tyler, 1952, p. 524).

He warned against teaching "problem-solving as though it were a formal method...regardless of the content involved" (Tyler, 1952, p. 525). Problem-solving and content were necessary so "students not only will learn about things but will learn to deal with them effectively" (p. 525). Tyler (1948b) emphasized understanding, rather than obedience and memorization. He stated there was a lesser need "for rote memorization and greater need for the kind of learning that probes for understanding and meanings" (Tyler, 1959, p. 47).

As an example of ineffective learning experiences, Tyler referenced a study by Bloom and Broder (as cited in Tyler, 1976a) where students attended a lecture. Twenty-four hours after the lecture, the audio taped lecture was played for individual students. At fifty-second intervals, the following question was asked: Do you remember what you were thinking at this point in the session? This study rated the lecture method ineffective, drawing less than 50

percent of the students' attention. However, when discussion and student planning were involved, the students' attention span increased to more than 50 percent. As a result, Tyler (1959) advised that teachers should focus on the individual who is having difficulty and change the teaching procedures. According to him, teachers must adapt "to differences in students and in situations" (p. 49).

Tyler's (1989a) advice for selecting learning experiences for minority children included helping them to see how schoolwork achieved "their own purpose" (p. 117). He stressed, "I think the heterogeneity of a group is one of the values of education" (Lackey, Jr. & Rowls, 1989, p. 43). He wrote that motivation may be increased by eliminating "artificial or simulated activities or exercises" that are strange to minority students and by working cooperatively in groups (p. 118).

In addition to Tyler's (1957/1958) concern for minority students, he also included the needs of gifted students. He noted that "giftedness is not something one is born with...but a product of internal factors and an external environment which stimulates, motivates and provides opportunities for development" (p. 81). He suggested flexible programs that were challenging and meaningful. Overall, Tyler viewed the methods of teaching the gifted as

suitable for educating all students, with programs open to "enrichment, acceleration, and independent study" (p. 82).

Tyler (1976a) observed, "The critical task...is no longer one of sorting students but rather one of educating all, or almost all, young people to meet the needs of the modern society..." (p. 19). Hence, schools should establish ways of connecting learning experiences to "out of school activities" (Tyler, 1976c, p. 63). Tyler stated, "If something that is learned in school is not utilized by the student in relevant situations outside the school, most of the values of the learning is lost" (p. 64).

Tyler (1971) commented that it was not his intent "to suggest that there is any difference between the conditions required for students to learn things which will enable them to carry on successfully their occupational activities and the conditions required for learning things helpful in other areas of life" (p. 13). He believed that the majority of youth could learn under the proper conditions. Tyler (1959) stressed the need for "learning that probes for understanding and meanings" (p. 47). He observed that educators should improve the "quality of learning" (p. 47) and he proposed the following conditions for effective learning experiences:

1. Motivation
2. The learner finds his previous ways unsatisfactory.

3. Guidance of the learner's efforts
4. Materials
5. Time to carry on the desired behavior
6. Satisfaction
7. Sequential practice
8. Setting their sight higher
9. Judging his own performance (pp. 47-48)

Without one of the requirements needed for effective learning experiences, Tyler (1976a) explained, "Learning is negatively affected" (p. 85). He said that students must want to learn, must "perceive clearly what it is they are trying to learn" (p. 85), and have the confidence to succeed.

Overall, Tyler (1949) advocated a "creative" (p. 81) process for selecting learning objectives and suggested that the experiences be "checked by the criterion of effect...in order to bring about the results desired" (p. 82). The learning experiences should also meet the "readiness test" for determining the appropriate skill level and result in "economy of operation" (p. 82) for obtaining several objectives. The students' change in behavior, according to Tyler (1948b), should become "increasingly effective and more valuable socially...for a more satisfying life" (p. 388).

Organizing Learning Experiences

In order for learning experiences to have a "cumulative effect, they must be organized as to reinforce each other"

(Tyler, 1949, p. 83). The relationships between "vertical and horizontal" (p. 84) experiences should be considered. Tyler explained that the "cumulative effects" (p. 84) from one grade to the next (vertical) were just as important as the breadth from one subject to another (horizontal). Hence, the "three major criteria" for organizing learning experiences are "continuity, sequence, and integration" (p. 84).

Tyler (1949) explained that a "recurring and continuing opportunity for...skills to be practiced and developed" (p. 84) were necessary. If experiences were properly sequenced, then each experience would build upon "the proceeding one" (p. 85). Students gained a greater understanding of the breadth and depth of a subject if the experiences were properly sequenced. The integration of knowledge was also important for relating the same skills to various subjects. Overall, Tyler (1949) expected the organization of learning experiences to result in a "unified view" (p. 85).

Tyler (1949) suggested identifying "the elements... which serve as the organizing threads" (p. 86) for planning the curriculum. Tyler mentioned "three kinds of common elements: concepts, values and skills" (p. 87). These threads were developed by students at a broader and deeper

level and served as a basis for organizing the learning experiences. Tyler (1949) hoped that a "total school experience" (p. 88) would be created from the integration, continuity, and sequence of these experiences.

In addition to organizing threads for learning, Tyler (1949) explained, "It is also essential to identify the organizing principles by which these threads shall be woven together" (p. 95). The range and extension of concepts "need to be considered in terms of their psychological significance to the learner" (p. 96). He warned that "developments must be meaningful to the learner himself" (p. 97). Tyler (1949) suggested the following principles for organizing learning experiences:

1. Increasing breadth of application
2. Increasing range of activities included, the use of description followed by analysis
3. The development of specific illustrations followed by broader and broader principles
4. The attempt to build an increasingly unified world picture from specific parts (p. 97)

Tyler (1949) also considered "structural elements" necessary for "putting experiences together" (p. 98). He described broad, intermediate, and lower levels of structural elements:

1. Broad - Specific subjects, broad fields, core curriculum, total unit
2. Intermediate - Course sequences, single semester or year units
3. Lowest level - The lesson, the topic, the unit (p. 98)

He indicated that organized learning experiences had "advantages and disadvantages" (Tyler, 1949, p. 99). For example, discrete subjects achieved little continuity, which made "vertical organization less likely to occur" (p. 99). In contrast, many "specific pieces" (p. 99) made integration difficult. Therefore, he advocated broad groups of subjects with longer spans of time.

Organized learning experiences were important for students to feel certain about what they were to learn and to have confidence in their abilities to complete the task (Tyler, 1976c). If students were uncertain about what they were to learn, they would "balk, stumble, or openly avoid trying" (p. 63). Tyler suggested that the learning tasks should be sequenced in order to become increasingly demanding and relevant to situations outside the school.

Time was only one of the variables for providing individual learning experiences (Tyler, 1983). Organizing effective instruction included "laboratory projects" or "demonstrations and problems" (Tyler, 1933, p. 288). Tyler (1949) explained that flexible "source units" (p. 101) provided material for teachers to use with any particular group and permitted "modification in the light of the needs, interests, and abilities of any group" (p. 101). Tyler

(1949) stated that the many examples of organized learning experiences generally involved the following:

1. Agreeing upon the general scheme of organization
2. Agreeing upon the general organizing principles
3. Agreeing upon the kind of low level unit
4. Developing flexible plans
5. Using pupil-teacher planning (p. 101)

Evaluating Learning Experiences

Tyler (1949) viewed evaluation as a necessary process for refining the educational process. Evaluation was a way of gaining evidence of the "permanence...of the learnings" (Tyler, 1949, p. 107) and included more than "a single appraisal" (p. 106). For Tyler, evaluation was a way to gauge the effectiveness of learning experiences.

Tyler (1948b) foresaw each teaching situation as a problem to be solved by the teacher's clear ideas of the objectives sought. He explained, "Changes in the behavior which teaching is expected to produce in students are the objectives of teaching" (p. 388). He acknowledged that the complexity of teaching prevented the use of "simple rules or formulas on how to teach" (p. 388).

Tyler (1949) stated that a student's evaluation should take place at the beginning and end of learning experiences. He expected teachers to "make a systematic review of the learning conditions in the class when one or more students are not successfully carrying on the assigned

learning tasks" (Tyler, 1976a, p. 84). He suggested that if objectives were not being met, then a different plan should be tried and re-evaluated. According to Tyler, "Even though styles in education and specific methods in teaching and principles of education change, methods by which teachers may investigate and solve their own problems continue" (Tyler, 1930b, p. 211).

Tyler (1930a) remarked that student evaluation should be complete and effective, as opposed to the "evils" (p. 405) of trial and error. But most importantly, he noted that the teacher should not be without means to gather information in order to solve problems. Tyler (1930a) recommended referring to literature that was relevant to the specific teaching problem. He emphasized the importance of "teachers conducting studies, conferring with consultants, and participating in discussion groups" (Tyler, 1948a, p. 297).

Tyler (Tyler, Gagne, & Scriven, 1967) objected to using evaluation for the wrong reasons. He viewed students as having "dynamic potential," (p. 16) and disagreed with using tests to rank students. Tyler (1974b) stated, "Tests were created for particular purposes, using particular assumptions and techniques of the times" (p. 169). Tyler (1967) challenged educators to be innovative in developing

diagnostic procedures, and referred to Walter Cook's general criteria for diagnostic tests as listed below:

1. The tests should reveal the mental processes of the learner.
2. The tests should suggest areas for remediation and also cover a long sequence of learning systematically.
3. There should be constant review of difficult items and progress should be revealed in objective terms.
4. The tests should be a reflection of what and how the teacher has presented the material. (p. 17)

Tyler (1949) believed evaluation should "appraise behavior" and "involve more than a single appraisal" (p. 106). Assessment areas to be tested were listed as follows:

1. Problem solving in situations that require varied cognitive skills and styles
2. Analysis, search, and synthesis behaviors
3. Comprehension through experiencing, listening, and looking, as well as reading
4. Expression through artistic, oral, nonverbal, and graphic, as well as written symbolization (p. 60)

According to Tyler (1948a), teachers should learn about child growth and development and study the community in order to acquire a "realistic understanding" (p. 297) of society. He described a notable trend as having "increased emphasis on the early diagnosis of students' strengths and weaknesses, coupled with individual planning and greater emphasis on the personality of the prospective teacher" (Tyler, 1943, p. 208). Tyler (1948b) stated that teachers should learn about students through some "systematic plan of

in-service study" (p. 395). He advocated, "In the early stages of any program...teachers will need assistance in translating facts about students into appropriate learning experiences. They will also need help in setting up small-group and individual activities" (pp. 395-396).

Tyler (1953) indicated that educational programs must address the following questions:

1. How are the needs of pupils actually identified?
2. How are needs translated into educational objectives?
3. How are problems which are meaningful to students discovered?
4. How can a teacher whose training has largely been limited to one or two subjects learn to draw upon content in other fields?
5. How can skills in pupil-teacher planning be acquired?
6. How can time for cooperative planning among teachers be provided?
7. Where can appropriate instructional materials be found?
8. How can pupils be trained to do effective individual and group work?
9. How can core work be evaluated?
10. How can competence in guidance and counseling be developed? (p. 564)

Summary

Tyler's (1949) concept of teaching began with consideration of students' needs. According to Tyler, a "set purpose" (p. 49) for educating students was needed. He advocated filling the "gap" (p. 6) for needs that were not being met. However, he suggested investigating the learners before making any decisions about objectives.

A "psychological conception" (Tyler, 1933, p. 289) of the student was necessary to identify "changes in behavior patterns" (Tyler, 1949, p. 6) the school should seek to produce. Tyler explained that students were more likely to apply learning when they recognized the similarity between "life and the situations in which the learning took place" (p. 18). He stated that clear objectives included both "behavioral and content aspects" (p. 47).

Tyler (1949) noted that objectives should be appropriate for the "particular points in the sequence of the educational program" (p. 39) while capitalizing on the "multiple results from each experience" (p. 41). Opportunities for practice in "daily life" (p. 39) were also important. When considering students' needs, Tyler suggested considering material according to "ethnic, geographic, and economic factors" (Lackey & Rowls, 1989, p. 100). He advocated considering the needs and interests of all children.

Tyler expected teachers to select objectives according to students' learning experiences. Hence, active environments for students were created. According to Tyler (1948b), learning experiences should include a variety of "verbal, pictorial, auditory, and direct experiences" (p. 394). He suggested that teachers create relevant

learning and provide opportunities for students to develop what is learned into a "normal repertoire of behavior" (Tyler, 1971, p. 3). However, Tyler (1944) maintained that a "proper balance" (p. 401) of educational experiences created "a well-rounded program" (p. 401).

When selecting learning experiences, Tyler (1976d) suggested six approaches:

1. Concentrate major efforts on important tasks
2. Curriculum is periodically updated
3. Learning must be organized over time (life-long learning)
4. Select material that is understood by student and used effectively
5. Work out better sequences of learning in the several fields
6. Give careful attention to efficient learning (pp. 146-147)

Tyler (1949) depicted teachers who organized objectives for a "cumulative effect" (p. 83) with students having opportunities for "skills to be practiced and developed" (p. 84). Meaningful lessons were developed in broad groups of subjects with "larger blocks of time" (Tyler, 1949, p. 100). Tyler (1976a) explained that inadequate learning was present if inadequate "learning conditions" (p. 21) were present. He expected teachers to implement mastery learning techniques to "create some kind of individualization scheme" (Lackey, Jr. & Rowley, 1989, p. 82).

In order for learning experiences to have a "cumulative effect, they must be organized as to reinforce each other"

(Tyler, 1949, p. 83). The relationships between "vertical and horizontal" (p. 84) experiences should also be considered. Tyler (1949) noticed that organizing objectives usually included the following:

1. Agreeing upon the general scheme of organization
2. Agreeing upon the general organizing principles
3. Agreeing upon the kind of low level unit
4. Developing flexible plans
5. Using pupil-teacher planning (p. 101)

Tyler (1976a) stated that a needs assessment was necessary for developing an "individualized program" (p. 86). He recommended evaluating students with a "systematic review" (p. 84). If objectives were not met, then the "tentative formulation should be dropped and others developed" (Tyler, 1949, p. 82). Although evaluation was important in meeting the students' needs, he advocated teaching all students without mention of any ranking system. In addition to testing, he stressed the importance of other forms of evaluation: Observations, interviews, and talking with parents or other teachers.

Tyler's educational ideals were evident from his writings about teaching and teacher training. Following his own beliefs, he attempted to change education by suggesting a new way of teaching. His teaching methods focused on all students and he expected teachers to "facilitate learning at all levels" (Tyler, 1959, p. 49).

A day-to-day routine for Tyler's teachers included searching for better methods of teaching, studying literature related to their classrooms, or revising current lesson plans. He expected students to gain an understanding of events and "learn to deal with them effectively" (Tyler, 1952, p. 525). Tyler emphasized the need for teachers to create a balance with a variety of projects, demonstrations, and studies of community problems. Tyler (1959) advocated problem-solving techniques rather than memorization. He stressed the importance of meaning and motivation in the students' lives, with teachers creating continuous challenges for learning experiences. The teachers' role was to organize, interpret, reflect and make sense of the lessons.

Tyler (1930b) suggested that teachers "investigate and solve their own problems" (p. 206). This included recognizing "actual problems" and becoming "familiar with sources of information on teaching problems" (p. 207). He established in-service workshops for teachers and helped them to study their own classrooms. Features of his workshops included "freedom from organizational details, flexibility of program, informal contacts and democratic procedures" (Ryan & Tyler, 1939, p. 22). For Tyler, teacher

preparation included learning about child growth and development along with social understanding.

Tyler's teaching and learning ideals were evident in his training methods for teachers. Tyler (1985) stated, "The deliberations on teacher education today tend to ignore earlier efforts to improve the preparation of teachers" (p. 682). He noted that teachers "need time to meet in discussion groups, to confer with consultants... and to use [information] in planning changes in curriculum and guidance" (Tyler, 1948a, p. 297).

In conclusion, Tyler (1948b) addressed the question of how to improve teaching. He referenced the following areas:

1. The objectives which are sought
2. The learning experiences which are used
3. The organization of these learning experiences
4. The evaluation of the results of teaching (p. 387)

Improving instruction and understanding students' needs were instrumental in becoming an ideal teacher. For Tyler, investigating student learning and evaluating teaching results were ongoing strategies for solving problems in the classroom. These traits, along with a love of learning, were the mainstay of Tyler's teaching expectations. He stated, "Good teaching demands a person who is understanding and has a warm human reaction to children" (Tyler, 1943, p. 208). See Table 6 for a listing of Tyler's teaching characteristics.

Table 6
Tyler's Teaching Characteristics

Educational Purpose

Investigate the learner
Begin with student interest
Connect life and learning
Objectives for changing behavior
Psychology of learner
Motivation - meet social needs of student

Selecting Learning Experiences

Opportunity for practice
Experiences are appropriate
Include meaning
Active student participation in planning
Connect experiences from school to community
Problem solving
Variety of experiences
Flexible to change experiences
Make education relevant
Teach all students

Organizing Learning Experiences

Vertical and horizontal learning experiences
Organizing threads - concepts, values, skills
Individual learning - projects, demonstrations, problems

Evaluating Learning Experiences

Solve teaching problems (literature, consultants, discussion groups)
Compare objectives to expected change in behavior
Evaluate beginning and end of learning experience
Systematically review experiences
No ranking students
Learn about child growth
Identify needs

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS FOR RESEARCH

The purpose of this study was to determine the extent of the similarity between effective and expert teaching with John Dewey's and Ralph Tyler's theories and practices of teaching. In order to highlight similarities and differences between effective and expert teaching and Dewey and Tyler, current practices of effective and expert teaching were reviewed, along with the writings of Dewey and Tyler about teaching.

The following four research questions are answered:

- a) What are current practices of effective and expert teaching?
- b) How would John Dewey define an ideal teacher?
- c) What characteristics would Ralph Tyler think necessary to become an ideal teacher?
- d) To what extent do the teaching theories of Dewey and Tyler inform the current practices of effective and expert teaching today?

What are Current Practices of
Effective and Expert Teaching?

Effective and expert teaching both demonstrate exemplary practices of ideal teaching, with some overlap between the two areas. Effective teaching is usually

discussed in definitive ways by describing essential steps for teaching. Expert teaching research adds to effective teaching research by delving into the thinking processes and personal characteristics of teachers. A summary and comparison of the two areas follows.

Effective Teaching

According to Mandry (1987), effective teaching added meaning to the learning process. An effective teacher related world events to the students' interests. Ornstein (1991) described effective teaching as intuitive and interactive, with the role of the teacher depending on student experiences. The teacher's task was to artfully create meaningful lessons (Ornstein, 1991). Thus, the interaction of students and teachers was a necessary part of teaching that could not be easily predicted.

Classroom management was a basis for effective teaching and students' behavior was monitored according to expectations (Brophy, 1983). Effective classroom managers implored preventative instead of punitive measures to control the classroom. These managers responded quickly and "automatically" (p. 33) to classroom events.

Brophy (1983) noted from Kounin's research that effective classroom managers were able to complete more than one task at a time and tended to cover material at a brisk

pace. Winnie & Marx (1982) explained, "The success of the teacher's instructional stimuli was dependent on the amount of material presented" (p. 513). They found that teachers needed to communicate clearly about the subject matter and students' thinking processes. Detailed "step-by-step procedures" (Evertson & Emmer, 1982, p. 496) were helpful in keeping students on task.

Brophy (1983) described Evertson and Emmer's research for classroom management at the elementary level. The characteristics of effective managers summarized from their studies of third grade classrooms are listed as follows:

1. Analyze classroom tasks - Effective managers were able to explain to their students in specific detail.
2. Teach the going-to-school skills - Effective managers formally taught rules and procedures in the early weeks.
3. See the classroom from students' perspectives - Effective managers were able to anticipate students' needs.
4. Monitor students' behavior - Effective managers monitored student compliance with expectations especially closely during the first few weeks. (Brophy, 1983, pp. 34-35)

Effective classroom managers were characterized as facilitators and creators of positive learning environments (Tobin & Fraser, 1991). Exemplary classroom managers created safety nets to encourage involvement and student confidence. These managers valued student input and were able to answer more student questions.

Regardless of the grade level, effective teachers were found to have specific procedures for running their classrooms smoothly and effortlessly. According to Walberg (1991), effective classroom managers followed six explicit teaching functions as listed below:

1. Daily review
2. Rapid presentation of new content in small steps
3. Guided student practice
4. Corrective feedback
5. Independent practice
6. Weekly and monthly review (p. 42)

Teaching methods for effective teachers included "clarity, task orientation, enthusiasm and flexibility" (Wahlberg, 1991, p.42) in addition to the following teaching behaviors:

1. Overlapping tasks
2. Signaling continuity and momentum
3. Variety and challenging assignments (Brophy, 1983, pp. 33-34)

Borich (1992) added instructional variety and enthusiasm as important key behaviors for effectiveness in the classroom, stressing "student success" (p. 9) as a lasting result.

Despite the many routines of effective teachers, planning included "images of what the lesson will be" (Clark & Dunn, 1991, p. 187). When teachers depended on rigid and detailed plans, students' needs were neglected and teachable moments were lost (Clark & Dunn, 1991). Even though objectives and outcomes were important, the three important variables for teachers were "knowing what you are going to

teach, knowledge of those you are going to teach, and where you are headed" (p. 190).

Expert Teaching

A description of experts, in general, may be used to describe the characteristics of expert teachers. From the novice to the expert stage of teaching, knowledge and experience is gained over the years. However, experience alone is not sufficient for declaring someone an expert teacher (Dreyfuss & Dreyfuss, 1986).

In contrast to effective teaching, expert educator literature emphasizes a thinking process that connects with students. Since only a few teachers reach this stage, it is often difficult to observe and define. However, Welker (1991) noted that teaching expertise requires more than a basic knowledge of their domain. He described an expert as requiring specialized training.

Ericsson and Smith (1991) suggested a need to identify "not only the acquired characteristics [of experts]...but also the process by which they are acquired" (p. 7).

Shanteau (1992) reported the following characteristics of experts:

1. Every expert has an extensive and up-to-date content knowledge.
2. Experts have a sense of what is relevant when making decisions.
3. Experts have an ability to simplify complex problems.

4. Experts can communicate their expertise to others.
5. Experts handle adversity better than non-experts.
6. Both experts and novices can follow established strategies when the decision problems are straightforward.
7. Experts are better at identifying and adapting to exceptions.
8. Almost all experts have a strong self-confidence.
9. Experts know how and when to adapt their decision strategies.
10. Experts have a strong sense of responsibility and a willingness to stand behind their recommendations. (pp. 16-17)

Instead of relying on routines, experts constantly addressed new problems of higher complexity (Bereiter & Scardamalia, 1993). Thus, creativity was fostered through new ways of thinking. Creative problem-solvers focused on exploring patterns until solutions were discovered.

According to Olson (1992), expert behavior was not a conscious effort. The underlying knowledge structure allowed teachers to "perceive, understand, and respond to classroom events differently" (Peterson & Comeaux, 1987). In addition, experts were able to see patterns from information (Shanteau, 1992). Someone other than experts may not focus on the abnormality of an event (Brandt, 1986). Hence, expert teachers usually focused on the atypical events of a classroom.

According to Butler (1996), the key to reaching the expert level was reflection. He stated that reflection

"propels one from the novice state to the expert state" (p. 272). Teachers at each progression viewed teaching experiences differently and searched for answers outside themselves.

Expert teachers reacted intuitively, having an overall sense of the situation such that they responded fluidly without deliberating (Dodds, 1994, p. 155). As noted earlier, expert teachers expanded their content and teaching knowledge instead of restricting their work (Bereiter and Scardamalia, 1993). These teachers focused on the core of a problem and operated from a deep understanding of the total situation.

Webb & Blond (1995) explained that a caring personality was important for interacting with students. A teacher's practice and a kind of knowing altered the "curriculum constructed and enacted with each student" (p. 612). Knowing a person required constant learning about who they are, and why they reacted in certain ways. As Common (1992) surmised, teacher and student relationships were important when studying great teachers.

As stated by Peterson & Comeaux (1987), researchers in teacher education found that "an underlying knowledge structure" (p. 327) influenced the way teachers perceive, understood, and responded to classroom events. Cushing,

Sabers, & Berliner (1992) found that "experts were better able...to make sense of and interpret classroom phenomena," (p. 111). Bents & Gardner (1992) also found that expert teachers considered students' interests and then made adjustments to the planned lessons.

Expert teachers differed from novices in their attitudes, preparation, and routines of their classrooms. These teachers made their own decisions about students and tended to disregard information from previous teachers. Bents and Gardner (1992) stated that expert teachers taught in a holistic context and used humor in their lessons. Expert teachers also anticipated and planned for problems.

When responding to student questions, expert teachers were able to give better examples and answered questions in greater detail than novice teachers (Livingston & Borko, 1990). Test reviews conducted by experts were organized according to students' questions instead of other pre-packaged materials. In contrast, "The novices experienced difficulty in generating examples and providing explanations for unexpected student questions" (p. 383).

To summarize, effective teaching literature revealed the following common elements: lessons with introductions, demonstrations, guided practice, feedback and more guided practice. In addition, classroom management was a large

contributor to student achievement for effective and expert teaching. Expert teaching research builds on effective teaching practices. However, Bereiter & Scardamalia (1993) stated that the study of expertise must go beyond fluid actions and pattern learning. What is needed is to learn more about how experts acquire their knowledge and when they use this knowledge.

How Would John Dewey Define Ideal Teaching?

Dewey believed in a democratic way of learning, where teachers and students both participated in the educational process. Learning experiences included more than a textbook, with the students' physical, intellectual and moral growth a major focus. Knowledge was not an end to learning, but a basis for discovery.

Beliefs for Educational Purpose

Dewey (1923/1983c) considered democracy and citizenship valid subjects to be included in education. He described the principle of democracy as the "formation and growth of attitudes and dispositions, emotional, intellectual and moral" (Dewey, 1837/1982a, p. 222). Dewey (1909/1977) explained that a child must be led to owning a problem, so he is "self-induced" (p. 203) to finding an answer. He warned that individuals "must learn to think for themselves,

to judge independently, and to detect propaganda" (Dworkin, 1959, p. 98) if the democratic ideal was to be maintained.

In addition to creating a democratic educational environment, Dewey (1893/1971) prescribed an ethical spirit of teaching instead of a method. Therefore, he offered an "ethical standard...by which to test the work of the school" (p. 67). According to him, teaching was an ethical and personal relationship, which also relied on psychological principles (Dewey, 1910/1970b). What was needed, according to Dewey, was a social institution that did not separate instruction and character. Dewey (1933/1986b) expected attitudes of "open-mindedness, whole-heartedness, and responsibility" (pp. 136-137) to be developed from studying actual problems.

True attention was not learning for the sake of learning, but involved "judging, reasoning, deliberation... or actively engaging in seeking relevant material" (p. 203). Dewey (1909/1977) explained that a child must be led to owning a problem, so he is "self-induced" (p. 203) to finding an answer. Hence, the teachers' role was to provide stimuli to help shape ethical and personal relationships and to convert facts to intelligent perceptions (Dewey, 1916/1980a).

Beliefs About What School Is

Dewey (1915) considered student freedom an important part of education. In addition to teaching the basic elements, he advocated creating social environments in the school. Students were not placed in rows, but were given the opportunity to move throughout a non-competitive classroom. Grades were not assigned and learning experiences were connected to students' lives. Dewey (1897) envisioned the school experience as a "process of living and not a preparation for future living" (p. 230).

He advocated grouping students according to interests and social skills. The teacher's role, according to Dewey (1929), was not to "impose certain ideas or to form certain habits in the child, but...to select the influences which shall affect the child and to assist him in properly responding to these influences" (p. 9). Experience was the determining factor for the discipline of the child, connecting individual interests and experiences with the outside environment.

Subject Matter

Dewey explained that subject matter should be developed throughout the entire school experience (Dewey, 1904/1977). He warned against educating for the "status quo" (Dewey, 1934/1980b, p. 181) and expected teachers to direct the

changes in education. For him, education was not an accumulation of knowledge, but was related to real life experiences in society (Dewey, 1915).

Teaching material was to be covered in its natural state, not in isolation (Dewey, 1931). Subjects were integrated with continuity in order to construct knowledge and solve problems. According to Dewey, education was a continuous reflection of the child's social life and experiences with new attitudes and interests replaced the succession of subjects.

Nature of Teaching Methods

The challenge of education was to meet the many diverse capacities of each individual, beginning with the student's interests and past experiences. Dewey (1933/1986a) indicated that the "more a teacher is aware of the past experiences of students, of their hopes, desires, chief interests, the better will [students] understand" (p. 140). Only then could a teacher plan the lesson and pattern of growth for individual learning.

Dewey (1916b) maintained that the impulses and experiences of the young should be "directed or guided" (p. 47) according to aims. He noted that the aim "signifies that an activity has become intelligent" (p. 129). He also emphasized that aims were a part of educational experiences,

with the teacher considering whether the work "possesses intrinsic continuity" (Dewey, 1916a, p. 251).

According to Dewey (1938a), educational experiences had certain criterion for learning. One such criterion was "continuing growth...in a particular line" (p. 36). Dewey (1929) advised teachers to help students to "see new problems, devise new procedures" (p. 12) and assist students with interacting with their environment. The difficulty was in "finding material which will engage a person in specific activities having an aim or purpose of moment or interest to him" (Dewey, 1916b, p. 155).

In addition, teachers were expected to assist students with studying the problems of society. Dewey (1923/1983c) noted his disappointment for teachers "not taking their full responsibility" (p. 161) in introducing students to possible solutions for the future. Dewey (1929) advised teachers to become investigators in the classroom and instill scientific methods so students would be able to "see new problems [and] devise new procedures" (p. 12) for establishing meaningful lessons.

Dewey expected teachers to have a professional spirit that included a constant study of the school, children, methods, and subject matter (Dewey, 1913/1979b). He observed that "attitudes and methods of approach and

response" (p. 153) should correspond with the direction of the students' interests. Teachers were expected to adapt to the living things in the world instead of using "model lessons" (Dewey, 1904/1977, p. 257).

He explained that for some teachers, working with students was a privilege and only those that could stay young "indefinitely and...retain a lively sympathy with the spirit of youth" (Dewey, 1938b, p. 331) should remain in the teaching profession. He also emphasized that teachers should have a "love of communicating knowledge" (p. 331) and an experimental attitude. For Dewey (1928/1984b), discovering students' "real needs, desires, interests, capacities, and weaknesses" (p. 264) was an important part of teaching.

When describing objectives, Dewey (1930/1984a) warned against creating formal objectives that were not "related to the actual school work" (p.330). According to him, a rigid disciplinary ideal of prescribed lessons created a "soft pedagogy" (p. 244) where students would not reach their best capability. He expected teachers to connect objectives with real-life situations. Dewey (1909/1977a) recommended that teachers also reconsider their methods of evaluation. He urged, "Competitive motives and methods must be abandoned for cooperative methods" (p. 97). In addition, he

disapproved of assigning grades to students, and claimed that the examination system created a "demoralizing standard by which the students come to judge their own work" (p. 243).

Instead of punitive measures, Dewey (1916b) conveyed an unconventional meaning for discipline and did not suggest that it was a means for controlling behavior. Dewey (1916b) explained, "A person who is trained to consider his actions, to undertake them deliberately, is...disciplined" (p. 151). Thus, teachers were expected to use a variety of instruction, such as "discussion, fieldtrips, writing, laboratory experiments, and experiences in the practical and fine arts" (p. 64).

When considering teacher training, Dewey (1904/1977) explained that the two major problems practice-teachers faced were mastery of subject matter and mastery of class management. He noted that practice-teachers "cannot give equal attention to both at the same time" (p. 253). Dewey also criticized teacher training due to the lack of responsibility conveyed in the classroom. Therefore, he opposed close supervision and suggested that soon-to-be teachers work with small groups of students and study thinking processes and subject matter (Dewey, 1904/1977).

Beliefs About the School and Social Progress

Dewey believed teachers were important in creating social change. Not only did he describe an ideal teacher as adding meaning through outside experiences, but suggested that teachers educate the public about necessary changes. He expected teachers to assist students with studying society's problems. Dewey (1928/1984b) stated that educators should concern themselves with "socially desirable attitudes and habits" (p. 267).

After seeing a need for change in education, Dewey began his own school. Dewey's Laboratory School was the site of an "experimental spirit" (Bernstein, 1966, p. 147). The school encouraged active participation in a democratic setting where teachers and students learned together from past experiences and present interests.

The experimental environment was based on "discovery through search, through inquiry, through testing, through observation and reflection" (Dewey, 1932/1985, p. 109). Dewey described the laboratory type of education as placing "more responsibility on the students" (p. 109). The continual exchange of ideas made "flexibility and capacity of growth" (Dewey, 1936/1982, p. 198) part of the teaching experience.

Teachers lead disciplined classes without punitive measures and repetitive lecturing. The spirit of "physical and mental freedom" (Mayhew & Edwards, 1965, p. 402) was evident in the classroom. Dewey's Laboratory School created a learning environment where students could do what they wanted to do while developing "social or intellectual relations" (p. 402). The school was conducted "as a form of home and community" (Meriam, 1965, p. 21) where a "home-like atmosphere" (p. 402) was commonplace. Students were comfortable in their learning environments.

What Characteristics Would Ralph Tyler

Think Necessary to Become an Ideal Teacher?

Tyler focused on enhancing the student learning experiences. His ideal teacher planned objectives for each lesson, then reviewed and revised plans for future learning. With specific objectives, the students' education was evaluated to see if the goals were addressed.

Tyler encouraged problem solving and reflection of the learning process. He warned that each classroom had specific problems that were shaped by the school's philosophy and noted that specific how-to teach instructions were not possible. Hence, he acknowledged the complexity of teaching and the challenges of the classroom.

Educational Purpose

In order to plan for specific learning experiences, objectives must be selected. However, Tyler suggested that before making any decisions about learning objectives, the student should be investigated. Tyler stated that objectives should stress those things that are important for students and prepare them to participate constructively in society. Tyler (1949) explained, "If the school situations deal with matters of interest to the learner he will actively participate" (p. 11).

Tyler (1933) advised teachers to include "psychological conceptions" (p. 289) of students in order to discover the most effective means for learning. He stated that a student was "much more likely to apply his learning when he recognized the similarity between the situations encountered in life and the situations in which the learning took place" (p. 18). Tyler (1951) attributed satisfying student needs, especially social needs, as a powerful way to motivate students.

Selecting Learning Experiences

Tyler (1944) stressed that education should change behavior and include thinking, feeling, and acting in the learning experiences. Tyler (1949) suggested selecting learning experiences that were appropriate to the students'

attainments and then giving students' an opportunity to practice. He cautioned that all learning experiences were not educational. Therefore, the role of educators was to provide a balance.

Tyler advised that teachers present challenging problems about the students' world and raise questions that could not be immediately answered (Tyler, 1951). However, he warned that students' attitudes should be examined "so that the teacher may understand" (p. 268) the meanings that various subjects have for students. He explained that learning experiences would be inadequate if there was memorization without understanding or if inaccurate information was presented. In order to overcome these problems, Tyler (1949) recommended combining information with problem solving, varying context and intensity, and frequently organizing and using the information.

Tyler (1949) emphasized the active learner when selecting educational objectives and stated that "learning takes place through the active behavior of the student" (p. 63). For him, "Too little pupil activity or too little variety...results in loss of interest and consequent failure" (Waples & Tyler, 1930, p. 231). As Tyler (1976c) admonished, "Where possible and appropriate, the students

themselves should participate in planning and evaluating the curriculum" (p. 65).

According to Tyler (1971), he insisted that the curriculum should be relevant and students should have opportunities to develop what is learned into a "normal repertoire of behavior" (p. 3). He explained, "Learning of a positive sort requires the effort and involvement of the learner" (p. 3). In order for education to become relevant, learning must be incorporated into students' "daily round of living" (p. 3).

Ideal teaching included matching the learning experience to the student. Believing education was for all students, Tyler (Lackey, Jr. & Rowls, 1989) argued against tracking students. Tyler stated, "The critical task...is no longer one of sorting students but rather one of educating all, or almost all, young people to meet the needs of the modern society..." (Tyler, 1976a, p. 19). Hence, teachers should establish ways of connecting learning experiences to "out of school activities" (Tyler, 1976c, p. 63).

Organizing Learning Experiences

In order for learning experiences to have a "cumulative effect", Tyler (1949, p. 83) explained that relationships between "vertical and horizontal" (p. 84) experiences should be considered. The "cumulative effects" (p. 84) from one

grade to the next (vertical) were just as important as the breadth from one subject to another (horizontal). Tyler (1949) suggested identifying "the organizing threads" (p. 86) for planning the curriculum, with "concepts, values, and skills" (p. 87) serving as common elements. He hoped that a "total school experience" (p. 88) would be created from the integration, continuity, and sequence of learning experiences.

Instead of narrow units, Tyler (1952) advocated larger blocks of time that would resemble life-like situations and hoped that isolated subjects would be avoided. To him, programmed materials were a way of conditioning the learner and watering down the curriculum (Tyler, 1948c, 1989). Hence, model lessons were to be avoided.

Students were expected to acquire their own skills and to view their own world so they could operate more effectively (Tyler, 1971). Tyler (1949) explained that flexible "source units" (p. 101) allowed teachers to adapt to different students and situations. Therefore, if a student was having difficulty, Tyler (1976b) suggested that the teacher should change teaching procedures to enhance individual learning. Individual learning was enhanced through "laboratory projects" or "demonstrations and problems" (Tyler, 1933, p. 288).

Evaluating Learning Experiences

Tyler (1943) emphasized the importance of an early diagnosis of students' strengths and weaknesses. It was important for teachers to work cooperatively and develop a philosophy for solving teaching problems (Ryan & Tyler, 1939). Tyler (1948b) developed in-service workshops so teachers could discuss problems, review literature, and confer with consultants in order to improve education. He also established in-service programs so teachers could plan and maintain comprehensive and cumulative records for each student.

Tyler (Tyler, Gagne, & Scriven, 1967) challenged educators to be innovative in developing diagnostic procedures. He also suggested evaluating the students at the beginning and the end of the learning experience. He expected teachers to "make a systematic review of the learning conditions in the class when one or more students are not successfully carrying on the assigned learning tasks" (Tyler, 1976a, p. 84). Further, he explained that students should be rewarded and receive feedback through frequent evaluation (Tyler, 1976b).

Tests were not to be used for the wrong reasons, according to Tyler (Tyler, Gagne, & Scriven, 1967). He viewed students as having "dynamic potential," (p. 16) and

objected to ranking students. Tyler (1974b) stated, "Tests were created for particular purposes, using particular assumptions and techniques of the times" (p. 169).

The needs of students, according to Tyler (1952), would only be met if the changes in behavior offered "new patterns of reaction, thinking, feeling, and acting" (p. 526). Tyler (1951) attributed "satisfying a need through the learning process" (p. 267) as a motivational tool for student learning. For him, investigating student learning and evaluating teaching results were ongoing strategies for solving problems in the classroom. These traits, along with a love of learning, were the mainstay of Tyler's teaching expectations.

Similarities Between Effective and Expert Teaching and Dewey's and Tyler's Ideas About Teaching

Before answering the fourth research question, it is useful to examine the number of similarities that exist between effective and expert teaching and Dewey's and Tyler's vision of the ideal teacher. The notion of how experts proceed in everyday teaching enhances the ideals of Dewey and Tyler. These similarities will be discussed for the areas of meaning and relevancy, classroom management and discipline, teaching methods, problem-solving and

reflection, professional spirit and independence, adaptability and flexibility, and evaluation.

Meaning and Relevancy

Adding meaning and relevancy to learning experiences was important for effective and expert teaching and Dewey and Tyler. Dewey (1929) explained that school subjects were based on students' "own social activities" (p. 240). Hence, a connection between the students' home environment and past experiences were necessary for creating meaningful learning activities, with students' interests becoming the focus for relevant lessons. Tyler (1971) suggested that teachers should help students apply what was learned in school to life outside school (p. 53). Expert teaching research, and occasionally effective teaching research, depicted the need for teaching to be relevant to student interests (Mandry, 1987).

Classroom Management and Discipline

Effective and expert teaching research and Dewey and Tyler showed that classroom management and discipline were always present and understood by students. In essence, effective classroom management was preventative, instead of punitive. However, Dewey conveyed an unconventional meaning for discipline and described it as a subject to be studied, with students being allowed to be social creatures. Tyler

also warned against undisciplined behavior and too much student activity.

Effective and expert teachers did not overlook potential classroom management problems, but created learning environments where discipline was expected. Anderson, Evertson and Brophy (1979) agreed that "good classroom management underlies all the other principles and makes it possible to implement them in instruction" (p. 222). As Bents and Gardner (1992) suggested, "Classroom management is an assumed concept" (p. 41). In summary, whether referring to the terms classroom management or discipline, all three areas of research understood the importance of creating a classroom for learning with understood classroom management techniques and a disciplined environment.

Teaching Methods

Active student learning was a common theme for effective and expert teaching research and Dewey's and Tyler's writings. Dewey and Tyler warned against pre-packaged materials or mechanical teaching methods. Dewey (1938a) stated that drills left students without the "capacity to act intelligently" (p. 27). In addition, Tyler (1989b) suggested that the learner be stimulated to try new ways of learning" (p. 205).

All three areas of research encouraged a variety of teaching methods. Dewey and Tyler suggested that long-term projects increased in-depth learning. Tyler (1948b) explained that a variety of "verbal, pictorial, auditory, and direct experiences in the laboratory and in the community" (p. 394) were needed. While effective and expert teaching research did not usually mention lecture and drill methodology, expert teachers were noted for creating their own classroom and engaging in "intuitive and improvisational teaching" (Ornstein, 1995, p. 78).

Problem-solving for Students and Teachers

Problem-solving methods for students and teachers were evident in all three areas of research. However, effective and expert teaching research primarily focused on problem-solving for teachers. Expert teachers were consistently studied to determine their level of problem-solving skills for subject content and pedagogy (Carter, Cushing, Sabers, Stein & Berliner, 1988; Cushing, Sabers, and Berliner, 1992; Peterson & Comeax, 1987). As Peterson and Comeax (1987) reported, expert teachers often discussed the "problem-solving situations...in terms of higher-level principles" (p. 327). In addition, experts tended to simplify complex problems by reasoning "forward" (Shanteau, 1992, p. 13) and recognizing patterns (Bereiter & Scardamalia, 1993).

Dewey and Tyler also depicted ideal teachers solving their own teaching problems. Dewey (1936/1982) expected teachers to discuss their classroom problems with other teachers on a "daily, even hourly" (p. 148) basis. Tyler created in-service workshops for discussing teaching problems and advised teachers to continually review their students' achievements.

In addition, Dewey and Tyler both advised creating problem-solving situations for students. As Dewey (1938a) stated, there must be an understanding of "what we see, hear, and touch" (p. 68). However, Tyler (1952) warned against teaching "problem-solving as though it were a formal method" (p. 525).

Reflection

To adequately apply knowledge to everyday situations, Dewey and Tyler prescribed reflection. According to Dewey (1897/1972), thinking and reflecting about learning experiences were necessary for providing the proper learning environment. For experts, reflection was the means for progressing from a novice to expert level of teaching (Butler, 1996). In addition, Tyler (1976c) viewed reflection as a method of evaluating learning experiences and expected teachers to reflect upon their learning.

Professional Spirit and Enthusiasm

Teachers' enthusiasm or professional spirit was important for student learning. Dewey depicted enthusiasm as a love for learning. Tyler believed teachers should continually strive for creating learning experiences that were suitable for students' needs. Expert teaching research depicted teachers that focused solely on student learning and were not easily distracted by outside factors.

A professional teaching spirit was depicted as teachers continued their duties after the classroom day ended. Dewey (1913/1979b) defined professional spirit as having a "responsibility for the constant study of school room work, the constant study of children, of methods, and subject matter" (p. 109). On a broader scale, he expected teachers to prepare students to change society and to become democratic leaders for forming public opinions.

Expert teachers and Dewey and Tyler's ideal teachers also possessed an independent outlook for teaching. (Effective teacher research usually focused on other areas instead of autonomy and independence.) Expert teachers had confidence in their teaching abilities, were not easily intimidated, and readily collaborated with other teachers. Similarly, Tyler and Dewey believed teachers should plan

learning experiences in conjunction with students and other teachers.

Adaptability and Flexibility

Expert teachers and ideal teachers of Tyler and Dewey all had the ability to be adaptable and extremely flexible with lesson plans. (Effective teaching research did not focus on teacher adaptability.) Dewey commented that teachers who were not flexible would soon realize they were not suitable for teaching at the Dewey Laboratory School. Tyler also expected teachers to evaluate their teaching and adapt to the students' needs when necessary. In a similar manner, expert teachers were highly adaptable and flexible in various teaching situations. Hence, student questioning or a need to vary the teaching lessons did not frustrate expert teachers.

Evaluation

Student evaluation was evident in all three areas of research, but with various forms. For instance, in addition to testing, Tyler prescribed a variety of evaluation methods such as observations and parent and student interviews. Dewey disagreed with assigning grades and suggested long-term projects as one form of evaluation. Expert teachers were noted for informally assessing the strengths and weaknesses of students before giving tests.

Individualized learning through evaluation was an expectation for effective and expert teaching and for Dewey and Tyler. Tyler expected teachers to continually examine the expected student objectives and revisit the need for changing learning experiences. Dewey expected the Dewey Laboratory School teachers to evaluate their teaching on a daily basis. This meant meeting informally during lunch or collaborating with other teachers at the end of the school day. Effective and expert teachers were able to informally evaluate students. Hence, experts in particular, were able to access student learning without referring to students' previous teachers' notes or test grades (Carter, Sabers, Cushing, Pinnegar, and Berliner, 1987).

Informing Effective and Expert Teaching with Ideas about Teaching from Dewey and Tyler

Dewey and Tyler seemed to realize that not all teachers were effective or expert teachers. Therefore, they sought to prepare teachers, of all career stages, to become the best teachers. The next section will review Dewey's and Tyler's theories and practices that would inform current effective and expert teaching research. The following areas will be discussed: teacher training, ethical and moral training, students' interests and evaluation.

Teacher Training

Tyler and Dewey both described practice teaching and in-service training. Tyler's teacher training helped guide teachers in planning and evaluating learning experiences with the use of objectives. Dewey established aims for guiding the learning experiences. However, effective and expert teaching research did not usually focus on training for practice-teaching methods.

Tyler, noted for his objectives, depicted teacher training as workshops for problem-solving situations. These workshops were later called in-service training and did not focus on specific stages of teaching such as novice or expert. Teachers met in groups, usually with consultants, to discuss the teaching problems. Dewey also advocated discussing teacher problems with other teachers, with teachers meeting on a daily basis.

Ordinarily, the focus of expert teaching research was not on teacher training. Expert teachers were noted for their years of experience, but the level of teacher education or teacher training was usually not considered for designating an expert teacher. Overall, effective and expert teaching research analyzed teaching behaviors in the classroom instead of focusing on pre-service training.

Ethical and Moral Training

For Dewey and Tyler, improving moral character and striving for a greater ethical standard were important concepts of teaching. As Dewey explained, (1893/1971) an ethical spirit of teaching instead of a method was needed. He stated, "For it is not the study of ethics I am urging; it is the study of ethical relationships" (p. 60). Tyler depicted moral and ethical standards in the form of objectives. In addition to teaching specific content, Tyler (1949) advocated helping students to develop social attitudes, work habits, study skills, and specific appreciations and sensitivities. Effective and expert teaching research noted the importance of adding meaning to the lessons, but seldom included ethical and moral teaching research.

Students' Interests

Dewey and Tyler both suggested that attention to students' interests and needs would result in greater student involvement. According to Tyler, the selection of learning objectives should include the students' interests. Dewey's idea of grouping students depended on student interests instead of abilities.

In contrast, effective teaching research rarely mentioned student interest as a starting point for planning

lessons. However, expert teaching regarded meaningful lessons as being connected to the students' lives. Neither effective nor expert teaching research regarded student interest as the basis for beginning the learning experiences. Hence, student interest may be mentioned during the lesson, but was not a major focus for motivating students' learning.

As Tyler (1949) acknowledged, "The most difficult problem is setting up learning experiences to try to make interesting...an activity which has become boring" (p. 81). He observed that the criterion of interest and meaningfulness was overlooked, and that the initial objectives should begin with the students' interests. As students gain a greater understanding of knowledge, then they would be stimulated to "broaden and deepen their interests" and to "develop interest in other objectives" (Tyler, 1976c, p. 63).

Evaluation

Evaluation for Dewey and Tyler was defined differently than that in effective and expert teaching research. Student achievement for effective and expert teaching was usually based on criterion or norm-based testing. The most effective teachers were most likely associated with students that performed well on tests.

Unlike traditional standardized testing methods, Dewey did not believe in assigning grades or creating a competitive classroom. He did believe in challenging students but did not want them restricted by grades. Tyler viewed evaluation as important, but viewed testing as only one method of evaluation. He suggested that testing should not be used to rank students, but stated that a needs assessment was necessary for developing an "individualized program" (Tyler, 1976a, p. 86).

Recommendations for Practice

1. Teacher training should introduce to pre-service teachers collaborative problem-solving techniques.
2. Teacher training should assist teachers with the integration of ethical and moral teaching methods in the classroom.
3. Teachers should capitalize on students' interests and needs when planning objectives.
4. Teachers should routinely utilize multiple forms of student evaluations and needs assessments.
5. Teachers should be cognizant of students' entire school experience.

Recommendations for Research

1. Research on effective and expert teaching should include long-range studies in order to follow the career paths of teachers from novice to expert stages.
2. Research should examine how meaningful and relevant lessons affect students' interests and ultimately classroom discipline.
3. Research should examine how teachers' professional spirit and independence affect overall teaching.
4. Research should examine the relationship between teacher adaptability and flexibility.
5. Research should examine the ways expert teachers evaluate students.
6. Research of effective and expert teachers should be more comprehensive than a review of recent research. Historical research should be conducted to inform current research with teaching methods that have remained approved practice over time.

Examples of past efforts to improve teaching can improve current research for effective and expert teaching. Because Dewey and Tyler advocated increased ability of all teachers, perhaps studying teachers at various career stages would eventually result in more teachers reaching a higher

level of teaching expertise. In short, a review of Dewey's and Tyler's literature can provide greater insight to important teaching principles of today.

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