



The influences of personal and professional learning situations on real-life learning strategy utilization by school administrators in Wyoming
by Robert John McKenna

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University
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Abstract:

In this study, two real-life learning situations were examined to find out if there were any differences between the learning strategies used by school administrators in personal learning settings as opposed to professional learning situations. Additionally, this study examined the relationship between the demographic variables of age, type of academic training, years of teaching experience, the scope of responsibility within the district or building and the learning strategies used by school administrators in professional and in personal situations. The learning strategies were evaluated using the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) instrument. The five strategy construct areas of metacognition, metamotivation, memory, critical thinking, and resource management are identified in SKILLS.

The first hypothesis comparing the learning setting was analyzed with t-tests in each of the five content areas of SKILLS, as well as with each of the specific strategies within each of the content areas in both the personal and professional learning situation. The second hypothesis investigated the relationship between selected demographic variables and learning strategies and was tested by a series of multiple regression analyses. Separate regression analyses were conducted for each of the five content areas of SKILLS, as well as with each of the specific strategies within each of the content areas in both the personal and professional learning context.

Through the use of t-tests, it was found that school administrators did differ at a statistically significant level in their use of learning strategies in personal learning situations from their use of learning strategies in work-related, professional settings. The results of the multiple regression calculations indicate that there is no significant influence attributable to the respondent's demographic information and the specific learning strategies used in both personal and professional learning contexts. Thus, the SKILLS instrument is a valid and reliable instrument that can be used to discriminate learning strategy utilization in various contextual situations.

**THE INFLUENCES OF PERSONAL AND PROFESSIONAL LEARNING
SITUATIONS ON REAL-LIFE LEARNING STRATEGY UTILIZATION
BY SCHOOL ADMINISTRATORS IN WYOMING**

by

Robert John McKenna

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APPROVAL

of a thesis submitted by

Robert John McKenna

This thesis has been read by each member of the graduate committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

9/30/91
Date

Robert A. Felley
Chairperson, Graduate Committee

Approved for the Major Department

9/30/91
Date

Janet Mellis
Head, Major Department

Approved for the College of Graduate Studies

10/9/91
Date

Henry Parsons
Graduate Dean

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ABSTRACT

In this study, two real-life learning situations were examined to find out if there were any differences between the learning strategies used by school administrators in personal learning settings as opposed to professional learning situations. Additionally, this study examined the relationship between the demographic variables of age, type of academic training, years of teaching experience, the scope of responsibility within the district or building and the learning strategies used by school administrators in professional and in personal situations. The learning strategies were evaluated using the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) instrument. The five strategy construct areas of metacognition, metamotivation, memory, critical thinking, and resource management are identified in SKILLS.

The first hypothesis comparing the learning setting was analyzed with *t*-tests in each of the five content areas of SKILLS, as well as with each of the specific strategies within each of the content areas in both the personal and professional learning situation. The second hypothesis investigated the relationship between selected demographic variables and learning strategies and was tested by a series of multiple regression analyses. Separate regression analyses were conducted for each of the five content areas of SKILLS, as well as with each of the specific strategies within each of the content areas in both the personal and professional learning context.

Through the use of *t*-tests, it was found that school administrators did differ at a statistically significant level in their use of learning strategies in personal learning situations from their use of learning strategies in work-related, professional settings. The results of the multiple regression calculations indicate that there is no significant influence attributable to the respondent's demographic information and the specific learning strategies used in both personal and professional learning contexts. Thus, the SKILLS instrument is a valid and reliable instrument that can be used to discriminate learning strategy utilization in various contextual situations.

CHAPTER I

INTRODUCTION

Administrators in public schools face a variety of real-life problems that they must address every day. These demand not only problem solving processes but also the capacity to organize (planning) and actually experience the phenomena of "learning". The use of learning strategies in real-life encounters enhances an individual's ability to positively cope with life's many and varied challenges at both the personal and professional level.

Professionalism, in education, is something that is expected in this country. Being a "professional" gives a sense of added status and competency to the job of educating learners. The field of educational administration has moved towards becoming a separate profession, within the broader perspective of teaching. In the past, administrators focused more on the management end of the school process and tended to leave the teaching and learning to the teachers (Sergiovanni, 1991). However, the slogan "School leaders as learners" reflects a new norm in public school administration. Administrators today are not mere managers and shufflers of endless reams of paper. Today's professional school

administrator provides the leadership to make decisions, motivate and solve day to day problems in a collegial atmosphere (Hallinger & Murphy, 1991).

Administrative training is an ongoing professional activity. The materials and methods currently used to prepare school administrators for employment stress sound academic learning strategies. Adult learners live and work in real-life situations (as distinct from the learning that takes place in academia) and must rely upon themselves to initiate learning and set realistic expectations for their learning outcomes. Therefore, learning strategies must reflect the real-world job realities that are encountered in the school districts and buildings where professional school administrators work.

While professional development programs and district operations often focus on formal learning situations, instituting and implementing professional development goals usually remains dependent on the individual school administrator's own initiative (Hallinger & Murphy, 1991). School administrators must be prepared to undertake the responsibility for much of their own on-the-job learning activities. School administrators work in the real world and need real-life learning strategies to cope with day to day learning opportunities.

Real-life learning varies from individual to individual and is, in most cases, geared to the particular learning situation that is encountered. To distinguish

real-life learning from that encountered in an academic setting, one has to examine some of the conditions that prevail in a formal "schooling" situation. In an academic setting, one finds a curriculum that has been set by someone other than the learner; all of the pertinent information needed for the learning experience is provided, and the correct answers to problems the student might be asked to solve are available (Wagner & Sternberg, 1986). Real-life learning means planning and organizing one's own efforts. These are the everyday encounters with learning that allow the individual to survive and gain satisfaction with his or her particular lifestyle. It is the actual experience of using effective strategies that count.

An important aspect of adult learning is that quite often it is initiated for immediate use in real-life situations. Sternberg (1990) suggests that there are numerous differences between learning for real-life problem solving and learning for academic endeavors. Adult learners distinguish for themselves problems encountered in the real world as distinct from those problems identified and defined by someone such as a teacher or lecturer. Real-life problems are usually not as well structured as those problems encountered in an academic setting. Most often school-related problems lack the contextualization existing in those encountered in the real world. Often, in school settings, information is given which enables the learner to work effectively in solving

problems. However, in real-life it is often difficult to obtain or discover the information that would aid the learner in resolving day to day problems. In solving real problems, one must look not only at one's own perspective for resolution of the problem but also at those arguments that might be put forward by an opposing side. School related problems predominantly teach learners to confirm what they already believe. Good feed-back is often lacking in real-life situations; sometimes it does not come until it is too late. School environments teach us to work on problem solving on an individual basis. Real-life problems are quite frequently resolved by the group process of discussion. Hence, real-life learning strategies are dependent upon episodes that are characteristic of the real world in comparison to a rather artificial, academically contrived problem. Thus, as with most professionals, these are the types of situations school administrators face daily. They encounter and must effectively resolve real-life problems in both the workplace and in their personal lives on a continual basis.

Adults may use a variety of learning strategies in addressing real-world problems. Learning strategies are the techniques or specialized skills that the learner has developed to use in both formal and informal learning situations (McKeachie, 1988). These skills are honed to a workable efficiency by what Darwin would have termed "survival of the fittest" testing. If one was using this

Darwinian cliché, then those skills which produce favorable results are retained by the individual, amplified and expanded upon, and those techniques which have not proven to be reliable or fruitful will either be abandoned or suppressed. While this may be the way individuals develop learning strategies, there is another possibility for viewing this cliché of specialized skill "evolution" slightly differently. It is here that we might see an "efficiency of effort" paradigm that could be described in this alternative view. Those skills that are the easiest to perform are used more frequently. The skill might not necessarily be very effective, but the learner immediately chooses the quickest and easiest fix to the exercise at hand. The notion that water always flows in the path of least resistance might be applicable in this particular situation.

The particular skill(s) and the sequence(s) in which learning strategies are used can be both intuitive and learned in response to a given set of external stimuli. This learning stimulus seems to trigger or activate the learning process and to raise the question of whether there are "factors" which influence one's ability to use learning strategies. For example, does a school administrator's past teaching area have any bearing on the particular strategies used to solve those everyday problems that are so commonplace in the world of the adult?

Learning strategies that are employed by adults vary from learner to learner, and are dependent upon the actual learning objective. The particular

strategies employed by any given learner can often be so familiar to the learner that little thought is given to the actual strategy selection. However, when new or extraordinary learning situations are encountered, the adult learner might spend considerable time in selecting appropriate strategies that will be useful in successfully learning what is needed.

How do adults learn? Are there particular strategies which might be used more effectively by one learner, and not so well by another? Do the strategies employed by adults vary depending upon whether the learning situation is in an academic or real-life environment? Is the selection of real-life learning strategies contingent upon the learning being job related or of a personal nature? Factors such as these may influence one's use of learning strategies. They directly influence today's school administrator who must provide strong and positive leadership if the school is to be an effective institution. The administrator's personal background-data and employable real-life learning strategies can provide valuable insights into the effectiveness of leadership and subsequently the effective outcomes of schools.

What effect in real-life learning does a person's level of attainment in a formal educational setting have on their ability to use learning strategies? Virtually all school administrators in Wyoming must have attained a master's degree in school administration from a recognized university before they are

certified to hold an administrative position. Although this is one common denominator and although this master's degree training is shared, previous formal educational qualifications vary greatly. For example, some might have a vocational background where practical applications were predominantly examined; others may have a background with an emphasis on critical thinking skills. Each academic field has established methods for acquiring and learning knowledge and appears to attract people who have similar styles for learning (Kolb, 1978).

Is a person's age of any importance in selecting and successfully using learning techniques? With greater and varied experiences, one might anticipate there to be a modification or refinement of those strategies for learning that brought success in very specific circumstances that were encountered in the real world of the adult. Older learners by virtue of a succession of personal triumphs, defeats, and modifications to the strategies used might very well be more focused in recognizing their particular learning style or at least in being able to concentrate their learning efforts on subjects which are of importance to them.

Does the size of a school administrator's district/building have a bearing on the type of learning strategies employed? Small school districts/buildings present different challenges to the administrator than do larger institutions.

Often small districts will have only one administrator who is isolated and without a readily available person to discuss ideas and concerns. This presents a learning environment for the administrator that might require a completely different approach in the selection of learning strategies to solve the problems encountered. Being able to speak with someone in person allows the administrator to bounce ideas off the other individual, and get instant verbal and non-verbal reactions to everyday, real-life problems. When one must take a broader perspective or more global outlook in managing a building/district, learning strategies might be different. When one is not only the instructional leader but is also the person who is responsible for the direct control of the boiler room, learning might well take on a multi-level aura. On the other hand, larger districts/buildings tend to have many administrators, and they are assigned tasks that might be more limiting in scope when compared with the small district/building administrator, and consequently they may require the employment of differing strategies when learning situations evolve.

Statement of the Problem

Real-life learning occurs daily in one's professional and personal life. Although adults possess a variety of learning strategies and use them in different situations, little or no research has been conducted to determine if

individuals use the same learning strategies in their professional activities as in their personal lives. School administrators have a myriad of learning opportunities daily to gain knowledge for solving problems. Yet, little is known about the strategies used by administrators in these situations or about the demographic factors which may have influenced the development of these strategies.

Purpose of the Study

Therefore, the purpose of this study was to investigate the relationships between learning strategies used in professional situations and those used in personal situations by school administrators. In addition, this study examined the relationship between the demographic variables of age, type of academic training, years of teaching experience, and the scope of responsibility within the district or building and the learning strategies used by school administrators in professional and in personal situations.

Research Hypotheses

Two major hypotheses were tested in this study. The first examined the relationship between the use of learning strategies in professional situations and the use of learning strategies in personal learning situations. The first

hypothesis was analyzed with t -tests in each of the five content areas of SKILLS, as well as, with each of the specific strategies within each of the content areas in both the personal and professional learning situation. The second investigated the relationship between selected demographic variables and learning strategies. The second hypothesis was tested by a series of multiple regression analyses. Separate regression analyses were conducted for each of the five content areas of SKILLS, as well as, with each of the specific strategies within each of the content areas in both the personal and professional learning context.

The following two hypotheses were tested:

Hypothesis 1: There is no significant relationship between administrators' type of learning situation and their learning strategy score measured by SKILLS.

Hypothesis 2: There is no significant relationship between the demographic factors of age, type of academic training, years of experience, and scope of administrative duties and the learning strategies which are measured by SKILLS and which are strategies used in professional and in personal learning situations.

Definition of Terms

Throughout this study the following terminology was used in an operational context as defined below:

Learning Strategies--those techniques or skills that an individual elects to use in order to accomplish a learning task. These differ from learning styles in that they are techniques rather than stable traits and they are selected for a particular task. Such strategies vary by individual and by learning objective. Often they are so customary to learners that they are given little thought; at other times much deliberation occurs before a learning strategy is selected for a specific learning task (Fellenz & Conti, 1989, pp. 7-8).

Learning Style--a stable component of a person's psychological makeup comprising those traits and characteristics that the individual has accumulated and developed over the course of their existence. Learning styles are fairly consistent and stable. These traits are not only a component of the individual's genetic constituency but are probably the manifestation of all the positive and negative experiences that have ever impacted the learner (Fellenz & Conti, 1989).

Real-Life Personal Situation--those learning experiences encountered on a daily basis that require individuals to solve problems related to their home or family situation.

Real-Life Professional Situation--those learning situations encountered by professionals in the performance of their job.

SKILLS--an acronym for Self-Knowledge Inventory of Lifelong Learning Strategies. This is a valid and reliable instrument used to identify real-life learning strategies via the use of scenarios from real-world situations which reflect Shirk's learning categories. The questions assess how likely individuals are to use specific strategies in dealing with learning problems.

School Administrator--a professional school administrator who is listed in the 1990-91 *Wyoming Education Directory* as an employee in one of the 49 school districts in the state of Wyoming. The term denotes an individual who is certified by the State Department of Education as a specialist with endorsement as either a central office administrator (superintendent, assistant superintendent, or program director) or a building level administrator (principal, assistant or associate principal or dean of students).

Assumptions of the Study

This study assumed that the responses made to the SKILLS scenarios represented true and accurate perceptions of the respondents concerning their use of learning strategies in real-life learning situations of both a professional and personal nature.

Delimitations of the Study

The study sample was restricted to a small, relatively homogeneous population of school administrators from the least populated state in the continental U.S. The investigation was dependent on volunteer participants from this locale.

The generalizability of the results of the study are limited due, in part, to the organizational and regional character of the sample and to the volunteer status of the subjects. The need for replications of this study using additional populations should be conducted as they would undoubtedly enhance the generalizability of the results.

Methodology of the Study

The purpose of this study was to investigate the relationship of several independent variables to two dependent variables. The independent variables

were age of the school administrator, years of formal education background, teaching area and experience prior to undertaking administrative work, and building/district size. The dependent variable, real-life learning strategies as measured by the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS), were divided equally into first those learning strategies used in professional situations and secondly, those learning strategies utilized in personal real-life learning situations.

Conti and Fellenz (1990) provided evidence concerning the construct validity for SKILLS, which was based on literature reviews and obtaining judgment on the constructs from a group of adult education and educational psychology professors. Additionally, an exhaustive review of the literature was undertaken for each of the five constructs and in particular those aspects that were related directly to adult learning. The findings from the literature review were then linked to scenarios of general areas of adult learning indicated by Shirk (1990). Robert Sternberg and Wilbert McKeachie, and a group of learned adult educators, reviewed the constructs and associated strategies at a summer institute at the Center for Adult Learning Research in Bozeman, Montana. The consensus of the group was that the SKILLS instrument did indeed address the five theoretical constructs of metacognition, memory, metamotivation, resource

management and critical thinking, and further, the scenarios did in fact represent a variety of real-life situations.

Organization of the Study

Chapter I included an introduction, statement of the problem, purpose of the study, research hypotheses, definition of terms, delimitations and assumptions of the study, methodology, and organization of the study.

Chapter II contains a review of the related literature that is concerned with professionalism, learning strategies and real-life learning.

Chapter III provides a detailed description of the methods and procedures used in the study. Additionally, this chapter outlines the design, data collection procedures, instrumentation, description of the population and sample, statistical hypotheses, and the statistical analyses of the data.

Chapter IV contains the results of the study and the statistical analyses for rejecting or accepting each of the two research hypotheses.

Finally, Chapter V provides a summary of the study, conclusions, discussions and recommendations for additional research.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

In the study of learning theory, two major paradigms emerge and appear to dominate much of today's thinking about adult education: pedagogy and andragogy. Malcolm Knowles first used the term andragogy to describe the "art and science of helping adults learn" (Knowles, 1968; Davenport, 1987, p. 6). Knowles (1970) provided four assumptions that are the underpinnings of his definition of andragogy: (1) as the learner matures, his/her self-concept moves from a dependency on others to a more self-directed mode, (2) along with maturity, is the accumulation of a greater store-house of experiences that can be used as a resource by the learner, (3) maturity brings a readiness to learn those things that are important relative to the role the learner plays in society, and (4) with maturity the learner tends to focus any new learning towards solving current problems as opposed to learning about new subjects.

The development of andragogy initially was as a method or approach to learning (Knowles, 1970). Recently, the emphasis has altered somewhat from a

teacher-centered approach to a more learner-centered view; the concept of andragogy taking on a theoretical approach that emphasizes that learning is more a continual process; from its inception as a pedagogical process to its continuing and on-going life-long learning experience (andragogy) (Knowles, 1979). Conti's (1985) work with adult learning styles further suggests that teacher-centered approaches might work well with short-term tasks (such as learning to pass the various components of the GED examination), but that andragogical approaches might be more effective with basic level groups of learners (such as ESL classes) who are focused on acquiring long-term skills.

There is some confusion when discussing learning "styles" as opposed to learning "strategies". Two distinctions must be made. First, that learning styles can in fact be differentiated from learning strategies. Second, an individual's learning style is a stable component of a person's psychological makeup (Fellenz, 1990). Thus, style will deal with those traits and characteristics that the individual has by nature accumulated and developed over the course of their existence. Learning styles are fairly consistent and stable (Smith, 1982; Keefe, 1982). Such traits are not only a component of the individual's genetic constituency, but, as Witkin (1976) suggests, are probably the manifestation of all the positive and negative experiences that have ever impacted the learner.

Learning strategies, on the other hand, are those techniques or specialized skills that the learner has developed to use in both formal and informal learning situations (McKeachie, 1988). These skills are honed to a workable efficiency by learning successes and failures in the individual's everyday encounters with solving problems. This means that those skills which produce favorable results (are effective) will be retained by the individual (and perhaps amplified or expanded upon), and those techniques which have not proven to be reliable or fruitful will either be abandoned or suppressed. There is of course another possibility, and perhaps one should view an individual's learning strategies slightly differently. It is here that we might see an "efficiency of effort" paradigm developing. Those skills that are the easiest to perform are used more frequently. The skill might not necessarily be very effective, but the learner immediately chooses the quickest and easiest fix to the exercise at hand (Fellenz, 1990). The notion that water flows in the path of least resistance might be applicable in this particular situation.

The particular skill(s) and the sequence(s) in which they are used can be both intuitive and learned in response to a given set of external stimuli. This learning stimulus appears to trigger or activate the learning process. Thus, are there "factors" which influence one's ability to use selected learning strategies? For example, does a school administrator's past teaching area have any bearing

on the particular approach (or strategies) used to solve those everyday problems that are so commonplace in the world of the adult?

Real-life learning varies from individual to individual, and is, in most cases, geared to the particular learning situation that is encountered. To distinguish real-life learning from that encountered in an academic setting, one has to examine some of the conditions that prevail in a formal "schooling" situation. In an academic setting, one finds a curriculum that has been set by someone other than the learner; all of the pertinent information needed for the learning experience is provided, and the correct answers to problems the student might be asked to solve are available (Wagner & Sternberg, 1986). Real-life learning means planning and organizing your own efforts. These are the everyday encounters with learning that allow the individual to survive and gain satisfaction with his or her particular lifestyle. It is the actual experience of using effective strategies that counts when discussing this type of learning (Fellenz, 1990).

Area I - Professionalism: Definition, Formal Preparation and Delineation of School Administrators as Professionals

There are some important commonalities of professional occupations that tend to set them apart from other endeavors. However, defining who is a professional is difficult and not a new problem. There is no clear-cut boundary

separating professions from other occupations (Cervero, 1988). Thus, "all occupations seeking the ideals of professionalization are worthy of sympathetic study..." (Houle, 1980, p. 27). Even in the early days of this century, Flexner (1915) suggested that there might be certain objective standards that one might need to look at when distinguishing a profession from that of other occupations. According to Flexner there are six essential characteristics an occupation must meet if it is to be considered a profession. These necessary characteristics include: (1) the involvement of intellectual activities, (2) that materials used within the occupation be derived from science, (3) the end-product of the occupation's pursuits be of a practical and well defined nature, (4) that the techniques used within the occupation be able to be communicated in some educational manner, (5) tend towards self-organization, and (6) be altruistic (Cervero, 1988). Schon (1987) feels that an occupation that is professional will "...share conventions of action that include distinctive media, languages, and tools." Professionals tend to work in particular institutional settings, such as "...the law court, the school, the hospital and the business firm, for example" (1987, p. 32).

Cervero (1988), has a slightly different viewpoint. He suggested "The professions, whose members account for almost 27 percent of the work force in American society, have a relatively high degree of control and influence in the

lives of other people in society" (Cervero, 1988, p. 17). Thus, the search for objective standards has been extensive and laborious over the past 75 years or so.

As more and more occupations seek the increased status of being categorized as a profession many different approaches to defining a profession have been attempted. These attempts fall into three broad perspectives: (1) static, (2) process, and (3) socioeconomic (Cervero, 1988). The static approach is dependent upon objective criteria that are firmly and clearly discriminated between those occupations which have been seen as professional and those which have not been viewed as being a profession (Cervero, 1988). Proponents of this approach have not been able to agree on set criteria or objectives. The second approach identified in defining professional occupations is the process approach. In the process approach, the move is from the question of whether or not an occupation is a profession to one of defining "the circumstances in which people in an occupation attempt to turn it into a profession" (Vollmer & Mills, 1966, p. v). Thus, with the process approach, occupations may, by virtue of how the constituents perceive and perform within the occupation, become a profession.

To address the notion of professionalization (via the socioeconomic approach), is to suggest "that any profession is a 'folk concept' that is historically

and nationally specific. This approach contrasts dramatically with both static and process approaches in that it assumes there is no such thing as an ideal profession and that no set of criteria is necessarily associated with it" (Cervero, 1988, p. 9). Friedson (1986) further suggests that in seeking to define professionalization by means of the static and process approaches will lead to an unsuitable conclusion because professional occupations are not generic in nature, but, rather an evolving historic idea that is greatly influenced by various social and economic institutions (especially in the U.S. and Great Britain).

Becker (1963, p. 33) strongly suggested that in defining professionalization, "Such a definition takes as central the fact that 'profession' is an honorific title ... a collective symbol and one that is highly valued" within a given society.

Friedson (1986) has provided one of the most comprehensive examinations of this topic. He suggests that in order for an occupation to be considered a profession, the individuals within the occupation must have some amount of higher education. By utilizing census data and definitions from the 1970 census, Friedson attempted to place all professions into two major categories: (1) professional, technical and kindred workers, and (2) managers and administrators, except farm workers. However, the categories were modified slightly in the 1980 census, and a new category was created that grouped managerial and professional together and moved technical occupations to

another major category. The notion is that a formal qualification creates a unique category for an occupation with some specialist-type training whereas those individuals without higher education are eliminated from the field of perspective candidates to enter a particular profession (Friedson, 1986).

The number of individuals who are practicing school administrators is about equal to the population of licensed medical practitioners in this country (Cervero, 1988). Unlike medical doctors, who are characterized as being first order professionals, school administrators are seen to be professionals of the second rank (Glaser, 1968). Friedson (1986) identifies school administrators, including principals and superintendents, along with accountants and health administrators as the only occupations that are members of the managerial/professional category (newly created by combining these previously separate entities) identified in the 1980 census.

Glaser (1988) suggests that because teachers (and subsequently school administrators) perform tasks or deal with social issues that are open-ended, they lack the public's confidence in resolving problems. Doctors, lawyers and some other professions are seen to bring final closure to problems that they deal with. Patients either get better or die; law suits are ultimately resolved by a finite judicial system. Because schools are continually changing to meet the expectations and needs of the new generation of learner, they are not perceived

by the public as completely solving a problem or producing a measurable end-product.

The roles that school administrators play can be characterized into two basic activities that they engage in. Those activities that require the administrator to improve instruction through direct interaction with the teachers (Alfonso, Firthe & Neville, 1981, in Cook & Deluca), and those objectives that might be described as action toward achievement of school goals which are not necessarily dependent upon others for their success or failure (Sergiovanni, 1987). This dichotomy of activities might appear to be somewhat simplistic at first view, but, administrative activities are quite often seen as supervisory or administrative (Cook & DeLuca, 1986).

In preparing today's school administrator for the rigors of the job, a number of factors have been identified as critical for ensuring success, both in the selection and training of potential school administrators. Instructional leadership is of considerable importance and is superseding the broader category of supervisor in school settings. Cook and DeLuca (1986) suggest that in order to "develop greater style adaptability, techniques which encourage exploration of simulated and real-life situations...be widely incorporated..." in training and preparing potential school administrators for what will be encountered out in the field. This notion is further supported by Schon (in

Cervero, 1988) who suggests training that would most benefit "practitioner(s) who wish to enhance their abilities to reflect in and on their practice, to become aware of their own problem-setting frameworks, and to extend their repertoires of images, examples, strategies and appreciations" (p. xii).

Continuing education is of great importance to the professional school administrator, and as such, should take into account the particular character of the occupation being assisted.

The dynamic concept of professionalization requires the broadening of the...goals of continuing education...the professionalizing process is complex, and the life-long learning to which it gives rise must have many goals in both pre-service preparation and in the active years of practice. The educational goals established...must be sought through the lifespan of the professional (Houle, 1980, pp. 34-35).

School administrators have "...an insatiable appetite for training beyond university preparation" (Pitner, 1981, p. 3). Work by Campbell and Cunningham (1959), Mintzberg (1973), Pitner (1979), and Duignan (1980) empirically suggests that school administrators can be characterized by the real-life tasks they are asked to perform in their role as a leader, a number of which would suggest the need for life-long learning opportunities beyond formal tertiary training. Many administrators have reported that they were unprepared for the rigors of day to day school administrative duties. The reality of what was encountered in the actual working environment is difficult to prepare for. Administrators have a desire to succeed, but do not come into the job with the

specialized skills that are needed for the unique position that a school administrator holds. Administrators believe that they perform adequately, but wish to perform to an exceptionally high level (Wolcott, 1973).

Pitner (1979) summarizes administrative work/tasks as : (a) being of short duration, (b) subject to continuous interruptions (thus providing a somewhat erratic working pattern and tending towards discontinuity), (c) allowing the needs of other workers in the school setting to supersede prior plans, (d) interaction with personnel, predominantly being verbal contact, face-to-face with individuals, (e) those tasks which provide considerable variability , (f) providing a work flow that is sporadic and unpredictable, (g) being called upon to make numerous trivial and relatively unimportant decisions, and (h) those jobs that the administrator tends to deal with as being problems/information that have an immediate, solvable and concrete conclusion.

School administrators undertake a job "...that requires substantial cognitive ability. The discontinuity and the variety of tasks, decision making under conditions of uncertainty, plus the pace of the work seem to suggest that a school administrator must have a highly developed repertoire of critical thinking skills. Administrators face an unending stream of activities, people and problems; the work demands that administrators be able to quickly shift mental and emotional gears (Pitner, 1981, p. 5).

Schon (1987) notes that "the context of a professional practice is significantly different from other contexts..." (1987, p. 32). Universities are perhaps best suited for training school administrators in the intellectual domain - the cognitive areas of functioning. The less cognitive areas might best be taught more appropriately in the domain or environment of the non-university setting (Pitner, 1981). Examples of this might include internships, on the job training, and observation of well regarded individuals in a laboratory-type setting.

Five areas, dealing with analysis, have been identified by March (1974) as being critical for success in professional management/administration. These include the ability to analyze each of these: (a) expertise, (b) coalitions, (c) ambiguity, (d) time, and (e) information. Each of these skill areas is closely linked to an administrator's success as a manager. Everyday existence would become tenuous if skills were not demonstrated in the above areas on a regular basis. These skills are not only rudimentary for survival and success, but, represent a plethora of training and learning for the administrator.

The analysis of expertise relative to those individuals encountered as a manager of a school is critical in developing the potential of school employees. Teaching staff are evaluated to ensure that they not only have expertise in their teaching area, but, that they are able to demonstrate the skill necessary to

actually present the materials to the learner in an interesting and functional manner. The inability for a school administrator to analyze expertise would surely be a contentious issue for a person who was considered the instructional leader in the school environment.

The analysis of coalitions is of great importance to the school manager. Coalitions are the backbone of an administrator's governance of the political infrastructure encountered in today's educational institutions. Natural leaders or key players evolve in any school environment. Building an effective administrative structure involves melding these players and others into effective units or coalitions. Little happens by the efforts of the school administrator alone; much can come to fruition given the manager's ability to analyze and reflect on existing and future coalitions.

The analysis of ambiguity is a subtle skill. The enigma presented by the constantly changing needs of the learner often creates ambiguous situations, interpretations and professional approaches within the school context. The school manager must take a global view in selecting the best choice in these types of situations. If ambiguity goes unchecked, then indecision and confusion will greatly decrease the perceived and real effectiveness of the manager.

The analysis of time is of extreme importance to the school administrator. Schools are managed within a strict time constraint. Schools start and finish at

set time intervals. All subjects are taught within the same time frame. Learners of varying abilities are required to complete tasks within certain uniform times. Although there well might be some latitude, relative to the need to so closely monitor time, school managers are bound to managing within set times.

The analysis of information is a skill critical for a school administrator to show expertise. The age of information is upon us. The quantity of information that comes to the attention of an administrator is nothing short of phenomenal. A small mountain of informative mail arrives with irritating frequency. Textbooks and other resources are in constant flux and upgraded information concerning the availability and quality of these materials must be quickly analyzed. To lack expertise in this skill area is to greatly limit the ability to act cognizantly and effectively in the management of a modern educational facility. Somewhere, either in a formal schooling setting or an "on the job" learning situation, these five areas of analyses must be learned.

Area II - Learning Strategies

Darkenwald and Merriam (1982) suggest that, "The methods that adults employ to learn a subject or skill vary greatly, presenting a sharp contrast to the relatively uniform techniques used in the schooling of children and young

people" (p. 128). Adult learners have considerably different learning needs, and utilize a variety of modes and strategies in satisfying these natural learning urges. "While the traditional class or lecture is the one method most preferred and most used, it would be inaccurate to conclude that adults generally prefer passive and traditional approaches to learning...less formal learning methods are more often preferred and used by adult learners" (p. 129). Vital aspects of the adult learning process that are felt to be essential in any assessment or training program can be best categorized into five areas: metacognition, memory, metamotivation, resource management and critical thinking (Fellenz, 1990).

Metacognition

Overview. Thinking about the process of thinking is what metacognition is all about. People are active information processors. In the mid-1970's the cognitive psychologist Flavell (1976) first introduced the notion that learners actually can "manipulate" their ability to think and subsequently control the learning process. By the 1980's other cognitive researchers, in particular Brown (1982) and Yussen (1985), concurred with Flavell's construct. Brown (1982) developed a model that suggests metacognition involved the learner taking an active role in utilizing these self-regulatory tactics to ensure the success of any learning activity.

The construct of metacognition is not alien to adult educators. Brundage and Mackeracher (1980) suggest "...that the learner be able to conceptualize his own learning process and be able to pay some attention to how he goes about learning..." (cited Smith, 1982, p. 52). A decade previous, Burman (1970) suggested, "We normally do best those things which we know how to do. I do not think learning is any exception" (p. 50).

To give an illustration, here is a practical example of how adults actively think: give a group of adults a sheet of paper and a writing instrument. Inform them that you are going to read a list of 12 words, and you want them to try and recall as many of the dozen words as possible after a short wait of some 20 seconds. The listing of 12 words is read at the rate of one word every three seconds. The listing includes: bed, rest, tired, night, pillow, yawn, cover, dream, sheet, pajamas, slumber and alarm. After waiting for 20 seconds, the group is told to write down as many words as possible and not to be concerned about the order of the words. The group is asked to raise their hand if they had listed the word 'bed'. Several do. "How many got the word 'rested'?" Again several group members raise their hands. "How about 'tired'?" Again, a positive audience response. "How many got 'sleep'?" Several respond that they had listed 'sleep'. The organizer tells them to lower their hands. The word 'sleep' was not on the list. People had processed the word into existence because of

the contextual similarity of 'sleep' and the listing of sleep-related terms (Weinstein, 1990).

In summary, learning how to learn involves a set of processes in which the individual learner acts, at least partially, as his own manager of change, and his focus of change is his own self-concept and learning process (Brundage & Mackeracher). Basically, people do their best work when they do what they know how to do best. This repeating and reconfirmation of existing skills is more than likely carried over to learning activities.

Strategies Associated with Metacognition. Flavell (1976) and Brown (1982) suggested that the learner takes an active and self-motivated interest in the learning process. The adult learner is an individual who seeks to clarify, with new learning, those aspects of their past experiences and learning activities which have been of use in real-life situations.

The following strategies take into account three areas of knowledge. There must be an awareness of self, task, and the strategy that will be used (Flavell, 1979). Researchers at the Center for Adult Learning Research at Montana State University have encapsulated this theme into three major strategies that are associated with metacognition (Fellenz, 1990):

- (i) Planning. The learner analyzes the best method to be used when proceeding with a specific learning task, then adjusts the activity to his/her

- own learning style and determines, after overviewing the task to hand, what resources will be needed to successfully complete the job.
- (ii) **Monitoring.** In utilizing this strategy, the learner assesses how he/she is proceeding throughout the learning project. This keeps the individual on target relative to the learning activity. It is this constant reassessment that permits the individual to make adjustments to the thought processes, and subsequently will provide the latitude necessary to accommodate one's particular learning style.
- (iii) **Adjusting.** It is this strategy that assists and facilitates the learner taking charge of directing and improving his/her own learning process. This includes activities such as revision of the learning which has already taken place and delineating how it is associated with the project at hand. Also, if there are any alterations that are required in the learning process, it is done at this juncture. New knowledge or enhanced insights into the learning task and/or the personal abilities of the learner are examined and adjusted as need be.

Memory

Overview. Memory might best be defined as "the capacity of humans to retain information, to recall it when needed and recognize its familiarity when

they later see it or hear it again" (Wingfield & Byrnes, 1981, p. 4). Norman (1982) goes further and suggests that human memory is composed of three types of "requests". These requests, per se, are those stimuli that are perceived by the individual as prompts, and provide the impetus to "find" any possible past associations stored in one's memory. The three types of requests are: feature, content, and function. Feature deals with the organizational specification, content is predominantly concerned with meaning, and function is any interpretation of the content. It is necessary when discussing the important aspects of memory, in real-life learning situations, to recall that memory consists of three distinct processes: the encoding (or storage), retention (or holding) and the retrieval (or recalling) of knowledge (Zechmeister & Nyberg, 1982).

Seamon (1980) suggests that the acquisition or encoding of information is a process of interpreting a stimulus and storing a representation of the interpretation in memory. Short-term memory items require only a minimal of coding. Long-term memory examples are much more complex and require more extensive encoding (Zechmeister & Nyberg, 1982).

The retention of information is in reality a two step phenomena. This concerns the storage of encoded information and its loss due to forgetting, which is the loss of information that is stored because it is in competition with new information (Wingfield & Byrnes, 1981). Zechmeister & Nyberg (1982)

suggests that forgetting may be due to interference caused by learning just before and after attempting to acquire new information. Environmental factors, both internal and external may also influence the retention of information. Altered conditions can either greatly reduce or eliminate stimuli capable of triggering the to-be-remembered material.

Retrieval of information in the memory process is composed of a number of sub-areas. Probably the two most important areas are: (a) recognition, which might be considered by some to be the most important facet of remembering, and (b) recall. Humans are able to recognize more information than they are able to recall information. An example of this is recognition of words during reading. An individual can recognize and know more words while reading than he/she can recall when speaking or writing (Adams, 1982).

When dealing with memory concepts relative to real-life learning, Long (1983) suggests that, "The process of learning and memory are so closely related and interdependent that it is often difficult to determine whether we are concerned with one phenomenon or two...one who does not learn has nothing to remember, and without memory there is no evidence of learning" (p. 58).

Strategies Associated with Memory. Memory strategies are categorized as either being an internal or external aid. Internal memory strategies are those aids where all efforts to remember are completed by the individual within their

own cognitive thought processes. Sometimes individuals bolster internal memory functions by the use of mnemonics, another internal memory aid. Mnemonic aids might be as simple as a short rhyme to assist in remembering (Zechmeister & Nyberg, 1982).

Adult educators tend to see memory in its more traditional role: a series of skills needed to remember items (Long, 1983). More recent work in the area of memory would suggest the need for further research into the area dealing with the reasons for the loss of memory functions as opposed to there being differences in memory between young and old learners (Ogle, 1986). Four strategies used in aiding memory that adults would use in real-life learning situations are suggested by the researchers at the Center for Adult Learning, Montana State University (Fellenz, 1990):

- (i) Rehearsal. This is an internal memory aid. What is involved here is the repeating of an item over and over. It may be done silently or said aloud. The repeating of the item may be rote or in its original form with no attempt to alter or add anything. This type of rehearsal allows the individual to maintain the item's availability in memory (Zechmeister & Nyberg, 1982).
- (ii) Organization/Elaboration. Organization in memory involves the reordering or restructuring of information from that which was originally

presented (Seamon, 1980). The use of this strategy involves a more in-depth and concerted effort at the structuring or processing of information so that material to be remembered will be better stored, retained and retrieved. Placing the material to be remembered in a framework that naturally guides the learner in the retrieval process appears to be the best way of enhancing one's memory. New material must naturally slot into the older framework of items already in long-term memory storage (Norman, 1982). An example of this: a school administrator who must report orally to the school board on the effectiveness of each faculty member, inserts a new staff member's qualities into his/her already established litany of pros and cons that have been previously established as being important to the supervisor and/or the school board as a whole.

- (iii) External Aids. The use of external aids to reinforce memory has proven a most effective strategy to improving the learner's ability to remember items that are naturally important to him/her. One such strategy which allows for a deeper level of processing, is known as elaborative rehearsal, and it is generally thought to produce long-term retention. The reviewing of materials for the purpose of improved retention is generally thought to be more beneficial if the quality of rehearsal is kept high, rather than the number of times the item is recited (Zechmeister & Nyberg, 1982). Using

simple mnemonic items can be of use, especially with regard to short-term increases in remembering. Chunking, which organizes sets of information, therefore diminishing the number of categories that need to be remembered, is another useful strategy for the improvement of short-term memory functions (Wingfield & Byrnes, 1981).

- (iv) Memory Application. The use of remembrances, mental images, or other memories to facilitate planning or problem solving are effective strategies in real-life learning situations. Visual images are remembered more effectively than those associated with words. An example of this might be the way manual skills, such as learning to ride a bicycle is retained indefinitely, irrespective of the degree of proficiency that the individual shows in the performance of the skill where the skill might decline with disuse. Manipulative learning is retained longer than verbal information under any circumstances (Adam, 1982).

Metamotivation

Overview. As real-life learning is usually under the control of the individual who is participating in the activity, then it stands to reason that the motivational impetus used in facilitating the learning must also be under the control of the learner. Hence, the notion of "metamotivation".

Deci and Ryan (1985) would lead us to consider that to motivate one's self, there must be an action involved. The learner must be interested in doing something that allows a goal to be reached. In other words, there must be an energization and direction to any behavior that is said to be motivated. One's past experiences have an effect on future motivation. Tough (1971) summarized this by suggesting:

"During the episodes of a learning project, the person will perform certain activities such as reading, listening, watching...(and) practicing. As a result of these learning episodes he will retain certain knowledge and skill. This knowledge and skill will be used for performing some responsibility or action at a higher level (or faster)" (p. 48). Learning what one wants and values, in an enjoyable environment, is perhaps an adult's greatest motivation (Wlodkowski, 1985).

Strategies Associated with Metamotivation. Keller (1987) put forward the ARCS model of metamotivation which has four basic strategies:

- (i) Attention. This strategy has the learner focus his/her attention on the material to be learned. A concerted effort is made to examine only one aspect that is to be dealt with at a set time. It is well documented in the literature, that adult learners are better able to focus their attention if the

learning problem is one that is attractive to the learner's own learning goals (Conti & Fellenz, 1988).

- (ii) Reward/Relevance. The pleasure derived from learning, increased self-esteem, and the pleasing of others, in addition to the accomplishment of relevant goals are all important motivational aspects in providing an effective strategy for adults to use in learning projects (Tough, 1971). Anticipating, recognizing and valuing one's ability to learn specific material provides a strong and positive aspect to real-life learning. Both personal and professional situations provide excellent environments to gain valuable learning experiences.
- (iii) Confidence. McCombs (1988) suggests that confidence has "an important functional role of motivation...to contribute to the maintenance of positive self-views and perception of self-efficacy and personal control that underlie the ability to change negative attitudes towards learning" (p. 142). Believing that one can complete the learning task successfully is critical to actually doing the job successfully.
- (iv) Enjoyment. Schooler and Schaie (1987) suggest that, "Large amounts of instruction and high degrees of ability...may count for little if students are unmotivated or instruction is unsuitable" (p. 209). What does motivate is having fun or gaining a high degree of satisfaction with the learning activity.

Resource Management

Overview. Finding relevant resources presents difficulties for many people. Adults need to be able to identify and evaluate those resources which can be used in solving problems associated with real-life learning experiences.

One of the first concerns for adult learners in attempting to utilize resources is the concern for the relative value of the material. The environment (including time concerns), methods of procuring and the learner's ability to critically evaluate the materials that are identified are four important aspects of resource management (Shadden & Raiford, 1984).

Difficulties with resource selection are many and varied. "One problem that learners frequently report is finding more printed or audiovisual materials available on a topic than they know what to do with. Materials may also be overly technical or too detailed" (Smith, 1982, p. 103).

Strategies Associated with Resource Management. Research conducted by Shirk (1990) suggests that adult learners may not be all that adept at identifying and using particularly relevant or reliable sources of information when undertaking a self-initiated real-life learning project. The ease of obtaining resources is an important aspect in using any resource other than one's own past experiences. Using one's own books, magazines, family members, friends and

neighbors were often the limit to satisfying the need for outside assistance through resource utilization. Resource management strategies are divided into three major categories (Conti & Fellenz, 1991):

- (i) **Identification**. Critical for the utilization of any resource material is of course being able to identify, and locate sources of information. Once identified as a source of information, the learner often has difficulty recognizing the limits of usefulness that the resource has. Tough (1971) went even further and acknowledged that major problems can occur when sources of information were human or material in nature. It is questionable whether some resources are even worth the expenditure of time, energy, money or the frustration associated with obtaining the needed assistance.
- (ii) **Critical Use**. Adult learners tend to use resources that are readily available, even at the expense of not using a particularly appropriate source. Smith (1982) suggests that, "One problem that learners frequently report is finding more printed and audiovisual materials available on a topic that they know what to do with" (p. 103). Being able to utilize appropriate rather than available resources, while also recognizing the limitations and biases of any resource is crucial for adult learning to take place in the real-life environment to which most adults belong.

- (iii) Human Resources. The utilization of this strategy can play an important role in the selection and management of a multi-faceted resource: another human being. Less than 25% of adult Americans use the library as a resource for finding information that would assist in learning (Shirk, 1983). Those individuals who turn first to another person for help may be revealing something not only about the strategies they use, but also about their personal learning style. Thus, integrating others who can aid the adult learner into the social and political processes of learning, increases the likelihood of the personal learning experience being successful.

Critical Thinking

Overview. Brookfield (1987) suggests that, "Critical thinking is not seen as a wholly rational, mechanical activity. Emotive aspects--feelings, emotional responses, intuitions, sensing--are central to critical thinking in the adult life" (p. 12). One limiting factor in this definition is that Brookfield clearly deals almost exclusively with the affective dimension of this important learning strategy. To broaden this perspective and bring a definitive view, Fellenz, (1990), suggests that critical thinking is thought to be the process by which individuals analyze information in a contextually specific situation and create new ideas.

Strategies Associated with Critical Thinking. Brookfield (1987) suggests four major strategies that are associated with critical thinking and the adult learner:

- (i) Test Assumptions. In using this strategy, the learner must first be able to recognize critical assumptions when he/she comes across them, and then be able to evaluate the evidence presented by these assumptions relative to the learning situation encountered.
- (ii) Assess Context. In assessing the context of an idea or learning problem, the learner must evaluate the specifics that are given and then consider the generalizability that exists within a given situation.
- (iii) Generate Alternatives. This strategy calls for the learner to generate alternative hypotheses, keeping clearly in mind the basis of the problem. The hypotheses should be limited to the options that are generated by the given situation.
- (iv) Conditional Acceptance. This strategy allows the learner to conditionally accept the statement, but is a more tentative acceptance and permits the learner to be reflective about the problem while there is a tentative maintenance of principles.

Area III - Real-Life Learning

Learning that is relevant to the living tasks of the individual is what real-life or real-world learning is all about. The adult learner can demonstrate considerable knowledge of a practical nature, since life's experiences are cumulative. Realistically, a person learns what they must in order to function in their social and cultural environment. Learning tasks grow out of perceived needs (Fellenz, 1991).

For at least the last three decades, adult educators have shown an increased interest in real-life learning. Early on, Houle (1961) and Tough (1971) presented not only an interest, but some astute insights into why real-life learning might be of greater importance to the adult learner than those studies associated with the more formal "schooling" setting linked with academic learning. Perhaps it is the world-wide concern for the social and cultural environments in which adults live and work that have heightened the need for greater attention on real-life learning. Work by Paulo Freire and the late Myles Horton have certainly been instrumental in raising the consciousness of all individuals to the social needs of various peoples on an expanded global level.

Adult needs are varied and individual. The notion that adult learners tend to lose some of their cognitive abilities as they age is being questioned by cognitive psychologists. Schooler and Schaie (1987) have suggested that as an

adult learner gets older, the desire for learning experiences that involve cognitive processing diminish; that situational learning tasks become more important and relevant; older adult learners are more concerned with solving real-life learning problems. Thus, adults might well spend considerable effort in expanding or "beefing-up" existing learning strategies so that they could more efficiently undertake tasks that are particularly important to them, such as raising one's consciousness level or seeking to become self-actualized or perhaps a desire to take control of the events/circumstances that normally drive one's existence (empowerment).

The identification of real-life problems, encountered by just about all adults, is of critical importance in selecting appropriate strategies (those skills that the individual elects to use in order to complete a learning task) that will successfully resolve the quandary. Once the adult learner has focused his/her attention on identifying the problem, then useful strategies can be employed to learn what will be useful in positively resolving the problem (Sternberg, 1990).

While speaking at a seminar on real-life learning, sponsored by the Kellogg Center for Adult Learning Research, at Big Sky, Montana in 1988, Sternberg discussed what he considered to be "proper" traits exhibited by adults relative to real-life problem solving. These include: (a) Adults must recognize problems for themselves, (b) How the adult defines or sees the problem will

have a considerable bearing on how the problem will be solved, (c) Solving problems often calls for examination of the problem through the arguments put forth by the other side, (d) Adults seldom get clear feedback on real-life problems that are faced, and (e) Solutions to real problems usually are dependent upon group discussion or approval by others.

Real-life experiences encountered in professional and personal situations require the use of strategies to solve the myriad of real problems. School administrators are a group of professionals who face a wide and diverse set of problems on a daily basis. Much of the administrator's training is purely academic in nature. Real problems call for real-life solutions.

If school administrators must learn to recognize problems for themselves then new strategies must evolve to assist in this process. After all, school administrators, for the most part, are highly academically trained and as such have been conditioned, through academic training, to having problems identified by their teachers or mentors.

The school administrator's perception or definition of problems encountered in real-life environments might require the utilization of totally new learning strategies. An example of this might be the difficulty that an administrator faces in trying to schedule classes for the academic year. Traditional views, supported by one's own academic training, might suggest the

need to encapsulate instruction into modules of a set duration. This is a fairly standard approach to solving this problem. However, if the perception is that learners gain knowledge at different rates, then the approach for resolving a school timetable might be to individualize all instruction and do away with rigid time constraints.

Often an administrator is asked to resolve problems in which two opposing points of view are involved. Academic training tends to reinforce what administrators already believe in as being the "right" answer or approach. Real-life problem solving would suggest the need to examine the problem from an opposing point of view. As an example, school administrators sometimes, during salary negotiations, see themselves as "us" and the other negotiating body as "them" with little empathy for the "enemy". Perhaps the problem is that during negotiations no one entity wants to lose. If administrators reviewed the other team's perspective of why they could not afford to lose, per se, then perhaps a win-win environment could be created.

Interpersonal relationships are rarely straightforward nor are they simplistic. The school administrator faces daily real-world problems with staff. Is the feedback from these interactions clear-cut? Administrators' academic training has not necessarily prepared them to view feedback as anything but clear-cut. The politics and interplay of personalities in a school environment

would certainly provide anything but clear and precise feedback relative to interpersonal relations. Learning to deal with imprecise, noncontextual feedback would require varying approaches and different learning strategies.

Individual solutions to real-life adult problems is highly improbable. Adult learners do not usually resolve problems on their own. This might be illustrated by how school administrators cope with individualizing instruction for exceptional students. Child Study Teams (CST's) are formed that consist of classroom teachers, administrators, guidance counselors, parents, specialists, and even the learner under discussion, to try and put together a plan that will fully meet the needs of the student. Individual viewpoints in resolving the problem are considered, but it is the consensus of the group that will actually determine the course of action that should lead to a terminal decision.

The utilization of appropriate learning strategies in the professional setting can be a most formidable and awesome tool in providing the adult learner with a satisfying and profitable experience. With the pressure that is often found in the realm of school administration, clearly a natural progression of learning strategies would be a welcome addition to an often sparse practical response to the task of managing a modern school.

CHAPTER III

METHODS AND PROCEDURES

This causal-comparative study investigated the relationships of real-life learning strategies to professional and personal learning situations encountered by school administrators in Wyoming. Additionally, the demographic factors of age, level of attainment in a formal educational setting, and teaching experience were examined to determine if they could be used to predict the utilization of learning strategies in the two situations.

Population

Wyoming is the least populated state in the continental United States of America. With a population approaching 500,000 people (Rand McNally, 1986), only Alaska has a smaller resident population. The population of the state is homogenous and consists predominantly of white, middle-class workers, ranchers, and farmers. The state is known as the "equality state" because it was the first state to grant women the right to vote. Ethnic groups are extremely

small in size and number and are generally restricted to Native Americans and Mexican-American migrant agricultural workers.

Educationally, Wyoming is broken into 23 counties and 49 school districts. There are 49 superintendents directing 408 schools and approximately 350 central office and building level administrators (State Department of Education, 1990). Thus, school administrators (central office and building level) constitute a small group with under 400 identified individuals. Wyoming's limited population would suggest that most groups of professionals in the state are composed of small memberships. Thus, school administrators consist of a small group that is very homogenous, offering little diversity in background, training, age and ethnic origin. A listing of the school administrators was obtained via the "1990-1991 Wyoming Education Directory".

Procedures for Data Collection

A listing of school administrators within the state was obtained from the Department of Education (1990). A total of 389 individuals were identified through an examination of district personnel listed in the 1990-91 Wyoming Education Directory. This listing was scrutinized on a county by county basis, and those administrators who were listed as either central office administrators (superintendents, assistant superintendents, and directors of programs) or

building level administrators (principals, assistant principals, associate principals, and deans of students) were selected. Since school administrators are extremely busy while school is in session, they were contacted during the week following the end of year dismissal of school because they are relatively free from pressing duties and other professional distractions. A total of 163 school administrators in the state of Wyoming responded to the initial request for study participation. Each participant was mailed a packet of materials. This included a demographic information sheet and answer sheet. Another 8½" x 14" sheet contained the printed scenarios. Three of the six real-life scenarios were geared for discovering learning strategies in personal learning situations. The other three were for uncovering learning strategies used in a professional situation.

Most of the participants returned their study materials after the first mailing. However, some were not returned until after reminder letters and new copies of the study materials were mailed to them. A final total of 163 school administrators returned study materials. In order to evaluate whether there was any difference between those who returned the study materials promptly and those who needed reminders and new materials before responding, *t*-tests were run to examine if these two groups differed in any of the demographic variables (see Table 1). The results were as follows: those who indicated that they worked in the central office ($t=.45$, $df=52$, $p=.65$); respondents who indicated

the number of years that they had worked in their current position ($t=.12$, $df=123$, $p=.90$); those administrators who indicated that they worked in building level positions ($t=1.53$, $df=106$, $p=.13$); those who gave an indication of their undergraduate major ($t=.05$, $df=143$, $p=.96$); level of attainment beyond undergraduate study ($t=.07$, $df=154$, $p=.95$); current age of respondents ($t=1.15$, $df=153$, $p=.25$); administrators who had taught in elementary schools ($t=.96$, $df=90$, $p=.34$); administrators who had taught in secondary schools ($t=.12$, $df=116$, $p=.90$); respondents who indicated the number of years of teaching experience ($t=.22$, $df=152$, $p=.82$). These t -test indicated that there was no significant difference between the two groups relative to demographic information provided.

Table 1. t -test Results Between Respondent Groups: Early Respondents vs. Latter Respondents--Demographic Information.

Demographic Variable	t -score	df	p -value
Central Office	.45	52	.65
Years/Current Position	.12	123	.90
Building Administrator	1.53	106	.13
Undergraduate Major	.05	143	.96
Graduate Attainment	.07	154	.95
Current Age	1.15	153	.25
Elementary Teacher	.96	90	.34
Secondary Teacher	.12	116	.90
Years of Teaching Exp.	.22	152	.82

Further *t*-tests were run to determine if there were any significant differences between the two groups of respondents relative to the five strategy areas in both personal (see Table 2) and professional situations (see Table 3). In both the personal and professional learning situation, no learning strategy area showed significant differences between the group of respondents who turned in their study materials promptly and those who responded after being sent a follow-up letter with additional materials.

Table 2. *t*-test Results Between Respondent Groups: Early Respondents vs. Latter Respondents--Learning Strategy Areas: Personal Situations.

Learning Strategy Areas	<i>t</i> -score	df	p-value
Metacognition	1.16	161	.25
Metamotivation	.81	161	.42
Memory	.26	161	.79
Critical Thinking	1.28	161	.20
Resource Management	.62	161	.53

Table 3. *t*-test Results Between Respondent Groups: Early Respondents vs. Latter Respondents--Learning Strategy Areas: Professional Situations.

Learning Strategy Areas	<i>t</i> -score	df	p-value
Metacognition	.85	161	.40
Metamotivation	.29	161	.77
Memory	.46	161	.65
Critical Thinking	1.73	161	.09
Resource Management	.42	161	.67

Instrument

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) was used as the instrument to identify real-life learning strategies. This is a valid and reliable instrument developed by the staff at the Center for Adult Learning Research at Montana State University (Conti & Fellenz, 1991).

The SKILLS instrument is based upon vital aspects of the adult learning process that are essential in assessment or training programs and can best be categorized into the five areas of metacognition, memory, metamotivation, resource management and critical thinking (Fellenz, 1990). SKILLS consists of a series of 12 scenarios from real-world situations which reflect Shirk's (1990) learning categories. Within each of the scenarios, a series of 18 questions are posed that identify with each of the strategies being examined. Within the area of metacognition, the questions deal with planning, monitoring, and adjusting to the learning process. Within the area of memory, the questions deal with rehearsal, organization/elaboration, external aids, and applications to the learning process. The area of metamotivation contains questions that deal with attention, reward/relevance, confidence, and enjoyment. In the questions that dealt with critical thinking, the areas examined include testing assumptions, assessing context, generating alternatives, and conditional acceptance of the new ideas being examined. Within the final area of resource management, the

questions deal with identification of resources, critical use of resources, and use of human resources in the learning process. The questions assess how likely individuals are to use specific strategies in dealing with learning problems.

For this study, 3 of the 12 scenarios were selected to encompass those situations which represent personal learning. These included scenarios dealing with (a) studying for a test about driving laws so that a person could receive a more favorable auto insurance premium rate, (b) learning how to alter eating habits in an effort to control one's cholesterol level, and (c) learning about toxic waste management so that an informed opinion may be given at a community meeting that will affect the economic well-being of the community.

Three additional scenarios were constructed to represent learning in the professional context of a school administrator. These scenarios dealt with (a) preparing to take a test about modern administrative practices that would enhance current qualifications and benefits, (b) learning how to change the past practices of school employees from one model of school organization to another more progressive approach, and (c) learning about school drop-outs and the relationship that has to employing students in community businesses in an effort to keep students in school.

The two sets of scenarios ask the same basic questions but in a different context. The scenarios for the professional context which were written for this

study were modeled after the established SKILLS scenarios. The three professional scenarios were purposefully written to be similar to the three selected for the overall SKILLS instrument. The 18 responses to each scenario were similar to the SKILLS response pattern but were modified to correctly reflect the context of the professional situation. In order to check the correlation between all possible combinations of the three professional scenarios and each of the five strategy areas an unequal-length Spearman-Brown was computed (see Table 4). When the coefficients are rounded off to the nearest tenth, over 85% of the correlations are within the acceptable region of .7 or greater. A copy of the instrument used in this study is included in Appendix A.

Table 4. Coefficients Resulting From Unequal-Length Spearman-Brown Correlation Between Professional Situation Scenarios and Learning Strategy Areas.

Strategy Area	Professional Scenarios (by combination)		
	Certification/ Middle School	Certification/ Drop-out	Drop-out/ Middle School
Metacognition	.7	.7	.7
Metamotivation	.7	.7	.7
Memory	.7	.6	.7
Critical Thinking	.7	.7	.6
Resource Management	.7	.7	.7

An instrument's validity is primarily concerned with what it actually measures. In educational research three important types of validity are recognized: construct, content, and criterion-related (Kerlinger, 1973). Construct and content validity have been established for SKILLS. Construct validity assesses the underlying theory of the instrument; it is the degree to which the instrument can be shown to measure hypothetical constructs which delineate some particular aspect of human behavior (Borg & Gall, 1983; Van Dalen, 1979). Content validity refers to the representativeness of the instrument in measuring the total universe of content for the construct constituting the instrument; it is determined essentially by judgment (Kerlinger, 1973).

Construct validity for SKILLS was established through literature reviews and obtaining judgment on the constructs from a group of adult education and educational psychology professors. Additionally, an exhaustive review of the literature was undertaken for each of the five constructs and in particular those aspects that were related directly to adult learning. The findings from the literature review were then linked to scenarios of general areas of adult learning indicated by Shirk (1990). Wilbert McKeachie along with a group of learned adult educators reviewed the constructs and associated strategies at a summer institute at the Center for Adult Learning Research in Bozeman, Montana. Robert Sternberg reviewed a printed copy via the mail. The consensus of the

group was that the SKILLS instrument did indeed address the five theoretical constructs of metacognition, memory, metamotivation, resource management and critical thinking and further that the scenarios did represent a variety of real-life situations (Conti & Fellenz, 1991).

The usual process to assess content validity is to ask qualified judges to make a judgment concerning how well the items that make up the instrument represent the constructs being tested (Gay, 1987; Van Dalen, 1979). The items in an instrument can be assessed by a form of content validity known as item validity. This type of validity can be used to see whether the text items measure the overall content (Gay, 1987).

Item validity was established for the SKILLS instrument by field testing in a variety of diverse locations and situations throughout the United States. The diverse locations included ABE programs, undergraduate and graduate university courses, museums, health-care providers, continuing education and elderhostel programs. Responses to sample sets of 6 of the 12 scenarios were collected from 253 respondents. The field-test group ranged in age from 17 to 73 with a mean of just over 37-years of age. Almost two-thirds (62.8%) of the respondents were female. Of the total number of respondents, approximately three-fourths (73%) had graduated from high school. The respondents to the field test represented a variety of residential areas: large cities over

250,000--29.8%; cities of 100,000 to 250,000--5.3%; towns of 20,000 to 100,000--33.5%; small towns of 1,000 to 20,000--21.8%; and rural areas under 1,000--9.6%. The vast majority (91.4%) spoke English as their primary language. A number of occupations were represented by this trial group, and these included educators, students, clerical workers, farmers, blue-collar workers, and homemakers. This diverse group of adults was from the West, Southwest, and Midwest regions of the United States. Responses from the field test confirmed the assessment of the jury of adult educators.

To establish reliability of SKILLS, a coefficient of equivalence was calculated. For the field test version of the instrument, respondents were provided six scenarios. Each of the scenarios contained 18 items. Respondents were asked to rate each item on the following scale: (a) "Yes, I would use this strategy"; (b) "I might possibly use it"; or (c) "No, I would not use it." For the reliability check, the responses from 130 of the trial participants were grouped into two categories. The first category consisted of the scenarios dealing with local history, repairing a bicycle, and cholesterol level. The other category contained the scenarios for writing a letter to the editor, job regulations, and care of a relative. Thus, each category contained similar kinds of scenarios. The correlation established between the forms was .71. This correlation was for an instrument with 54 items (three scenarios with each having 18 items).

However, the instrument actually consisted of 108 items, and the Spearman-Brown of .83 and the Guttman split-half of .83 are more accurate as measures of the reliability of SKILLS. This instrument is reliable for assessing the learning strategies of adults in real-life situations (Conti & Fellenz, 1991).

Response Sheet

Demographic information was gathered with a personal information form. Information concerning age, current position and duration, academic preparation and teaching experience was solicited. This sheet was included on the front side of the response form (answer sheet) for SKILLS data. Raw data collected was entered manually into dBase III data base for storage, sorting, and ultimately transfer into the Statistical Package for the Social Sciences (SPSS) programs where the analysis of data was conducted.

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) answer sheet was a modification of the answer sheet initially constructed by the staff at the Center for Adult Learning Research at Montana State University for use with the SKILLS instrument. The purpose of this answer sheet was to provide a logical and comprehensive method for the recording of raw data by the participants. The instructions for completing the study were printed at the top of the response sheet. The respondents were informed that there were six scenarios to be examined and that each scenario had a total of 18 questions.

The respondent was asked to select the six items that they would definitely use, the six items that they might possibly use, and the six items that they would not likely use in completing the learning task posed in each of the scenarios.

Responses were placed individually on an appropriately marked response sheet.

A copy of the response sheet is included in Appendix A.

Statistical Overview

The raw data collected was entered into Dbase III for data organization and manipulation and was then analyzed with the SPSS package for personal computers. Hypothesis 1 was tested with a t-test for analysis of significant differences in the learning strategies used in both professional and personal learning contexts. Hypothesis 2 was tested through a series of multiple regression analyses using a stepwise method of variable entry and removal and the pairwise deletion of cases with missing variables.

CHAPTER IV

DATA ANALYSIS

Procedures for Data Collection

A survey of school administrators within the state's 49 school districts was used for determining how learning strategies are used by professional school administrators in the state of Wyoming. A listing of the administrators was obtained via the "1990-1991 Wyoming Education Directory". These school administrators worked at both central office and building level jobs. The administrators' names, positions, and addresses were garnered by district from the previously mentioned directory. Letters (see Appendix B) asking for volunteers and study materials were mailed to 389 targeted individuals. Within a reasonable period after the initial mailing, a follow-up letter (see Appendix B) and fresh survey materials were mailed to every third individual who did not respond to the first call for volunteers. This sending of materials to all of the designated school administrators was done because of the small number of school administrators in Wyoming. The total number of surveys voluntarily returned was 163. Because school administrators have such heavy work

schedules, survey materials were mailed in late May and early June. This is immediately after the break-up of the academic year, just after the excesses of winding down after the end of school and prior to going on summer holidays. Many administrators in Wyoming take their vacation, usually about one month, during the month of July.

In addition to the letter of invitation to participate, the survey materials included: (a) a demographic information sheet; (b) a directions and response sheet; and (c) the SKILLS instrument. The survey packet also contained a self-addressed, stamped envelope for the return of the response sheet and demographic information sheet. Each return envelope sent with the original packet was encoded with an identification number to assist in the compilation of data and to aid in sending follow-up letters to those individuals who did not respond to the first request for volunteers.

The demographic information sheet (see Appendix C) required the participants to identify certain pertinent individual characteristics. The information sought was grouped into four major headings of (a) current administrative position, (b) academic preparation, (c) current age, and (d) teaching experience.

Respondents were asked to indicate their current administrative position within the categories of: (a) central office positions, and (b) building level

positions. Subcategories for the central office positions included Superintendent, Assistant Superintendent, and a non-specific category of "other" to be filled in by the respondent, if appropriate. Building level position subcategories included principal and appropriate assistant positions at the elementary, middle school, junior high and senior high school levels. Additionally, participants were asked to specify the number of years that they had served in their current position.

The major heading of Academic Preparation was further subdivided into two subgroups based upon undergraduate major and graduate degree. The undergraduate majors were Education, Humanities, Math/Science, Engineering, and "Other". In the second area of graduate school degrees, three degrees were specified: masters, specialist and doctorate. Participants were asked to identify their highest level of attainment.

The Teaching Experience category was further sub-divided into two areas of Elementary and Secondary. Within the Elementary section, participants were asked to specify which year-levels they had taught, and these levels were grouped into (a) K-3, representing lower elementary, and (b) grades 4-6, representing upper elementary. Those respondents who taught within the secondary teaching environment were asked to indicate their major teaching area, which was categorized as (a) English, (b) Social Studies, (c) Science,

(d) Mathematics, (e) Vocational Subjects, (f) Foreign Languages, (g) Physical Education/Health, and (h) "Other". Within each of the two major categories, concerned with teaching experience, the participants were asked to specify the number of years of experience.

Participants

The individuals who voluntarily returned the study materials were a varied group of Wyoming school administrators of this rather homogeneous professional body. Fifty-four (33%) of the respondents indicated that their current administrative position was in the central office. Central office positions often are thought of as ancillary or "management" positions, as opposed to administrative positions at the building level, which are predominantly considered as "instructional leadership" positions. Those signifying positions as Superintendent of Schools accounted for 22 (40.7%); Assistant Superintendents 11 (20.4%); followed by those who indicated that they had "other" positions within the central office administration with 21 (38.9%). This latter grouping contained individuals who identified their positions as involvement in Special Education, Federal Grants Administration, and Student Services.

School "leadership" positions are often referred to as building level administrative positions. This group of school administrators are the "front-line"

troops who provide the educational direction the school will take. As opposed to central office administrators, this grouping of educators deal directly with the teachers and the students. The subgroup of participants who identified themselves as currently employed in a building level position represent 108 (66.3%) of the entire sample. Elementary Principals were the most frequent respondents with 56 (51.9%), followed, in descending order of frequency, by Senior High School Principals (15.7%, $n=17$), Middle School Principals (12%, $n=13$), K-12 Principals (8.3%, $n=9$), Junior High School Principals (5.6%, $n=6$), Senior High School Assistant Principals (3.7%, $n=4$), Junior High School Assistant Principals (1.9%, $n=2$), and Elementary Assistant Principals (.9%, $n=1$).

When asked to specify the number of years in their current position, 125 (76.7%) of those returning study materials responded. The response indicates that school administrators, on average, have relatively little experience in their current jobs (see Table 5). The years employed in the current administrative positions ranged from 1 year (20) to 25 years (1). The mean for the number of years in current administrative position was 6.6 years, with a standard deviation of 5.8 years. Those administrators with 5 or less years of service in their current position constituted 71 (57%) of the respondents; those with between 6 and 10 years of service in their current position represented 24 (19%);

administrators with more than ten years in their current position accounted 30 (24%) of the group.

Table 5. Years in Current Position.

Years in Current Job	Frequency	Percent
5 or less	71	57
6 to 10	24	19
10 or more	<u>30</u>	<u>24</u>
Total	125	100

School administrators are a professional subgroup of educators. For the most part, the school administrators who responded to the survey were trained as undergraduates to become teachers (see Table 6). In the subcategory of undergraduate major within the area of academic preparation, areas of specialization were distributed as follows: 93 (64.1%) in Education, 21 (14.5%) in Humanities, 13 (9.0%) in Math/Science, and 1 (.7%) in Engineering; 17 (11.7%) indicated the "Other" category. Eighteen respondents did not complete this area of the survey.

Table 6. Undergraduate Training Areas by Descending Frequency.

Area	Frequency	Percent
Education	93	64.1
Humanities	21	14.5
"Other"	17	11.7
Math/Science	13	9.0
Engineering	1	.7
Total	145	100.0

School administrators in Wyoming are required by law to meet certain minimum standards of preparation and experience before they are granted an Education Specialist's Certificate with the appropriate endorsements. Minimum qualifications to hold an administrative position in Wyoming include (a) valid Wyoming teaching certification, (b) master's degree in school administration from a state recognized institution, and (c) 2 years full-time teaching experience. Administrative endorsements are issued only in those areas where the individual holds Wyoming certification to teach. Special education teachers would hold endorsement as an administrator of special education programs. Those respondents who indicated that they held only a master's degree constituted 89 (57.1%) of the group. This left 67 (42.9%) of the respondents with greater than minimum academic attainment needed to hold an administrative posting.

Twenty-five (16%) of all respondents indicated that they held doctorate degrees, and 42 (26.9%) said they had attained specialist degrees.

The school administrators who responded to the survey were on average middle-aged; and this would suggest a wide variety of learning needs. With the average age being 47 years, the possibilities regarding such a wide cross-section could include some individuals that have children; others trying to cope with the "empty nest" syndrome, and some just starting out by having a late child. The range of ages of respondents was from a low of 33 (2) to a high of 64 (1). This indicates a diverse group of individuals (see Table 7). Professionally, some are just entering the field of school administration while others may be contemplating early retirement. Again, the data would support the notion of a diverse group of people with a vast variety of learning needs. The most common age among respondents was age 41, which represented 13 (8%) of the sample who responded to this question. Eight individuals did not indicate their age. The

Table 7. Ages of Respondents.

Age	Frequency	Percent
40 or less	28	18
41 to 50	74	48
Over 50	<u>53</u>	<u>34</u>
Total	155	100

data indicate that 28 (18%) of participants were 40 years of age or less, 74 (40%) were between the ages of 41 and 50, and 53 (34%) were over the age of 50.

Over half (56.4%) of the respondents had some background in the teaching of elementary students (see Table 8). Within this group of 92 respondents, 28 (30.4%) had taught students in both grade groupings of K-3 and grades 4-6; 13 (14.1%) had taught in grades K-3 only; 51 (55.4%) had taught grades 4-6 only. There was an overlap of 18 individuals who indicated that they had taught in both the elementary and secondary school environments.

Table 8. Teaching Areas: Elementary by Descending Frequency.

Grades Taught	Frequency	Percent
4-6	51	55.4
K-3, 4-6 (both)	28	30.4
K-3	13	14.1
Total	92	100.0

Almost three-fourths of the respondents (72.4%) indicated that they had experience in secondary schools. The variety of subject areas taught was fairly broad (see Table 9). Of these 118 respondents, 29 (24.6%) listed Social Studies as their major subject taught; 13 (11.0%) indicated English as a major teaching

area; 14 (11.9%) responded Physical Education/Health, followed by Science and Mathematics with 10 (8.5%) each; Vocational Subjects with 6 (5.1%), and Foreign Languages with 1 (.8%). Thirty-five (30%) of the secondary respondents indicated "Other" when selecting a major subject taught.

Table 9. Teaching Areas: Secondary by Descending Frequency.

Subject Taught	Frequency	Percent
"Other"	35	29.7
Social Studies	29	24.6
Physical Education	14	11.9
English	13	11.0
Science	10	8.5
Mathematics	10	8.5
Vocational Subjects	6	5.1
Foreign Languages	<u>1</u>	<u>.8</u>
Total	118	100.0

The group was composed of experienced teachers who averaged 12.7 years of teaching experience. While one respondent only had 2 years of teaching experience, and another person had 43 years of experience, the most frequent number of years of teaching experience was equally divided between those individuals with 6 and 7 years; each of these levels had 13 respondents. The

years of experience were distributed as follows: 77 (50%) had 10 years or less, 52 (34%) had between 11 and 20 years, and 25 (16%) with 21 years or more.

Scores on SKILLS

The Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) was administered in two parts. The first section contained scenarios that facilitated the use of the five learning strategies of metacognition, memory, metamotivation, resource management, and critical thinking, in a contextually "personal" situation; these presented real-life situations that one might encounter in solving learning problems as they relate to one's everyday experiences. Three of the original 12 SKILLS scenarios were selected to encompass those situations which represent personal learning. Three additional scenarios were constructed to represent learning in the professional context of a school administrator.

These "professionally" contextual scenarios suggested situations that were considered to be "realistic" and contemporary. The first of these scenarios dealt with taking a test to achieve a new certification level. The second scenario asked for the formulation of a plan to convert from a junior high configuration to that of a middle school. The final professional situation involved analyzing and improving upon a "drop-out" plan that was community based. Each of the scenarios was constructed using similar statements from three matched scenarios

chosen from the original SKILLS scenarios. The format was to provide a reliable set of scenarios, using generic statements that can be cross-referenced, while changing the contextual situation. The "professional" situation statements were altered only to accommodate the situation. Thus, the two sets of scenarios asked the same questions, but in a different context.

In completing each scenario, the participants had to categorize each item as "definitely use", "possibly use", or "not likely use". They were limited to six responses for each category. Scores were calculated by assigning three points for "definitely use", two points for "possibly use", and one point for "not likely use". The responses were organized into two groups; the three personal learning situations constituted one group, and the professional learning situations made up the other group. Separate scores were then calculated for each of the learning strategy areas of metacognition, memory, metamotivation, resource management, and critical thinking for each grouping. Scores could range from a low of 9 to a high of 27. The actual resultant scores ranged from a low of 9 to a high of 26.

Personal Situation

Those strategies associated with this contextual situation had an overall score range of 10 to 25. Four of the five strategy areas had very similar mean scores (see Table 10). These areas included: metacognition, metamotivation, critical thinking, and resource management. The mean score for these four strategy areas all fell within the range of 18.4 to 18.9. One strategy area, memory, was significantly different with a mean score of 16.9.

Table 10. Mean Scores, Rank, and Standard Deviations for SKILLS: Personal Situations.

Strategy Area	Rank	Mean Score	Standard Deviation
Metacognition	4	18.4	2.2
Metamotivation	2	18.5	2.2
Memory	5	16.9	2.3
Critical Thinking	1	18.9	1.9
Resource Management	3	18.5	2.3

Thinking about the process of thinking is what metacognition is all about. The strategy of metacognition had cumulative personal learning scores that ranged from 13 to 26, with an average personal metacognition score of 18.4 with a standard deviation of 2.2. The most frequent score was 18, which represented

35 (21%) of respondents. Fifty-one (31%) of the respondents were below the average score, while 77 (47%) received scores in excess of the mean.

The motivational impetus used in facilitating learning is under the control of the learner. This is known as metamotivation. This strategy area had cumulative personal learning scores that ranged from 14 to 25, with an average personal learning score of 18.5 and had a standard deviation of 2.2. The most frequent score was 18, which represented 34 (20.9%) of the respondents. Results indicated 53 (32.5%) of the respondents were below the average score, while 76 (46.6%) received scores in excess of the mean. The mean score for this strategy was similar to that of the preceding personal learning strategy of metacognition.

Critical thinking is the process by which individuals analyze information in a contextually specific situation and create new ideas. The personal learning strategy of critical thinking had cumulative scores that ranged from 14 to 24, with an average score of 18.9 and a standard deviation of 1.9. The most frequent score was 18, which was representative of 36 (22%) of the respondents. The data indicated that 33 (20%) of the respondents were below the average score, while 94 (58%) received scores in excess of the mean.

Finding relevant resources can present difficulties for many adults. Being able to identify and evaluate those resources which can be used in solving

problems associated with real-life learning experiences is important. The relative value of the material, the environment (including time concerns), methods of procuring and the learner's ability to critically evaluate the materials that are identified are four important aspects of resource management. The personal learning strategy of resource management had cumulative scores that ranged from 12 to 25, with an average score of 18.5 and a standard deviation of 2.3. The most frequent score was 18, which represented 32 (20%) of the respondents. Fifty-two (32%) of the respondents were below the average score, while 79 (48%) received scores in excess of the mean. Again, as with the other three strategy areas listed above, resource management strategies have a similar mean score.

The one personal learning strategy area in which the mean score varied significantly from the other strategy area mean scores was in the area of memory. It was in this area that the mean score was 16.9. Memory can be defined as the capacity humans have to retain information, to recall it when needed and recognize its familiarity when they later see it or hear it again. The personal learning strategy of memory had cumulative scores that ranged from 10 to 23, with a standard deviation of 2.3. The most frequent score was 17, which represented 36 (22%) of the respondents. Sixty-six (40%) of the respondents

were below the average score, while 61 (37%) received scores in excess of the mean.

Professional Situation

Those strategies associated with contextual situation of professional learning had an overall score range of 9 to 26. The highest average score was in the professional learning strategy area of resource management, and the lowest was in the professional learning strategy area of metamotivation. Two of the five strategy areas, metacognition and critical thinking had identical mean scores (see Table 11), and two other areas, metamotivation and memory had similar scores. One strategy area, resource management, had a standout mean score that was considerably above all others.

**Table 11. Mean Scores, Rank, and Standard Deviations for SKILLS:
Professional Situations.**

Strategy Area	Rank	Mean Score	Standard Deviation
Metacognition	3	18.5	2.2
Metamotivation	5	16.7	2.4
Memory	4	17.5	2.0
Critical Thinking	2	18.5	2.2
Resource Management	1	20.4	2.5

Looking at the data in a rank-ordered fashion, which will place in perspective the relative associations, the following can be reported:

Locating relevant resources can present difficulties for many adults. Being able to identify and evaluate those resources which can be used in solving problems associated with real-life learning experiences is important. The relative value of the material, the environment (including time concerns), methods of procuring and the learner's ability to critically evaluate the materials that are identified are four important aspects of resource management. The professional learning strategy of resource management had cumulative scores that ranged from 12 to 26, with an average score of 20.4 and a standard deviation of 2.5. The most frequent score was 19, which represented 25 (15%) of the respondents. Thirty-seven (23%) of the respondents were below the average score, while 101 (62%) received scores in excess of the mean. It was significant that this area was the only professional learning strategy area to achieve a mean score of greater than 20.

Critical thinking is the process by which individuals analyze information in a contextually specific situation and create new ideas. The strategy of critical thinking had cumulative scores that ranged from 13 to 23, with an average score of 18.5 and a standard deviation of 2.2. The most frequent score was 18, which represented 32 (20%) of the respondents. The data indicated that 56 (34%) of

the respondents were below the average score, while 75 (46%) received scores in excess of the mean. The mean score for this professional learning strategy area was identical to that of the professional learning strategy area of metacognition.

Thinking about the process of thinking is what metacognition is all about. The strategy of metacognition had cumulative scores that ranged from 12 to 24, with an average score of 18.5 with a standard deviation of 2.2. The most frequent score was 18, which represented 45 (28%) of respondents. Forty-six (28%) of the respondents were below the average score, while 72 (44%) received scores in excess of the mean. The expected breakdown was for half of the scores to fall below the mean and half of the scores to be above the average.

Memory can be defined as the capacity that humans have to retain information, to recall it when needed and recognize its familiarity when they later see it or hear it again. The strategy of memory had cumulative scores that ranged from 11 to 22, with a standard deviation of 2.0. The mean score was 17.5. The most frequent score was 17, which represented 50 (31%) of the respondents. Thirty-nine (24%) of the respondents were below the average score, while 74 (45%) received scores in excess of the mean.

The motivational impetus used in facilitating learning is under the control of the learner. This is known as metamotivation. This professional learning strategy area had cumulative scores that ranged from 9 to 23, with an average score of 16.7 and a standard deviation of 2.4. The most frequent score was 17, which represented 30 (18%) of the respondents. Results indicate 71(44%) of the respondents were below the average score, while 62 (38%) received scores in excess of the mean. The mean score for this professional learning strategy was similar to that of the professional learning strategy area of memory.

Comparing Personal and Professional Learning

The major purpose of this study was to test for differences between the learning strategies school administrators use in personal learning and in professional learning situations. A pair of scores was generated for each administrator in each learning strategy area. One score dealt with the personal setting, while the other assessed the professional setting. The appropriate statistical technique for comparing the difference of the two means is the t-test. There is an assumption when using t-tests that the populations from which the samples are drawn have the same variance.

The first hypothesis being tested was: that there is no significant relationship between the type of learning situation and learning strategy score as

measured by SKILLS. The learning situations were categorized as personal learning situations and professional learning situations. Separate analyses were conducted in each of the five learning strategy areas of metacognition, memory, metamotivation, resource management, and critical thinking. In addition, separate analyses were conducted for each of the specific three learning strategies constituting each of the five learning strategy areas. Since this involved multiple analyses, the overall pattern of the results was used to evaluate the hypothesis.

t-tests with Significant Differences

The administrators differed in four strategy areas, relative to their use of learning strategies in personal and professional situations (see Table 12). In two areas, scores were higher for the personal situation. In two other areas, the scores were higher for the professional situation. The administrators applied critical thinking strategies ($t=2.03$, $df=162$, $p=.04$) and metamotivation ($t=9.22$, $df=162$, $p=.001$) more in their personal learning than in job-related situations. However, they applied resource management ($t=10.49$, $df=162$, $p=.001$) and memory ($t=3.62$, $df=162$, $p=.001$) strategies more in their professional learning situations than in personal situations. Thus, the distinct differences in learning strategy areas in these different situations supports the rejection of the null hypothesis.

Table 12. Mean Scores of Learning Strategy Areas in Personal and Professional Settings.

Strategy Area	Personal	Professional
Metacognition	18.4	18.5
Metamotivation	18.5	16.7
Resource Management	18.5	20.4
Critical Thinking	18.9	18.5
Memory	16.9	17.5

However, in the area of metacognition no significant difference was found between personal and professional learning situations ($t=.2$, $df=162$, $p=.84$). The mean of 18.4 for personal learning situations and of 18.5 for professional learning situations are virtually the same. Thus, metacognitive strategies are used to a high degree by administrators in both types of learning situations.

In addition to examining the differences in the learning strategy areas, individual analyses were conducted for each of the specific learning strategies (see Tables 13 and 14). There were no significant differences in either the personal or the professional learning situations in the three specific learning strategies that composed the area of metacognition: planning ($t=.82$, $df=162$, $p=.41$), monitoring ($t=.45$, $df=162$, $p=.650$), and adjusting ($t=.01$, $df=162$, $p=1.00$). However, two of the three specific learning strategies in the area of metamotivation showed a significant difference: attention ($t=3.84$, $df=162$,

Table 13. Frequency Distribution of SKILLS Scores by Specific Strategy:
Personal Situation.

Strategy	Scores						
	3.00	4.00	5.00	6.00	7.00	8.00	9.00
<u>Metacognition</u>							
Planning	0	4	11	33	57	36	22
Monitoring	1	11	31	53	36	27	4
Adjusting	<u>20</u>	<u>38</u>	<u>45</u>	<u>40</u>	<u>15</u>	2	<u>3</u>
Total	21	53	87	126	108	65	29
<u>Metamotivation</u>							
Attention	0	2	6	27	43	45	40
Reward	8	29	37	40	36	12	1
Confidence	4	<u>32</u>	<u>62</u>	<u>40</u>	<u>18</u>	<u>4</u>	<u>3</u>
Total	12	63	105	107	97	61	44
<u>Memory</u>							
Organization	19	31	42	38	22	7	4
External	1	9	25	44	34	38	12
Application	<u>28</u>	<u>33</u>	<u>44</u>	<u>37</u>	<u>16</u>	5	<u>0</u>
Total	48	73	111	119	72	50	16
<u>Critical Thinking</u>							
Assumptions	8	14	28	41	34	25	13
Alternatives	4	15	46	61	32	4	1
Cond. Acceptance	1	<u>2</u>	<u>16</u>	<u>44</u>	<u>45</u>	<u>35</u>	<u>20</u>
Total	13	31	90	146	111	64	34
<u>Resource Management</u>							
Identify	1	7	10	36	48	43	18
Critical Use	13	24	58	36	21	10	1
Human Resources	<u>1</u>	<u>18</u>	<u>34</u>	<u>50</u>	<u>36</u>	<u>15</u>	<u>9</u>
Total	15	49	102	122	105	68	28

**Table 14. Frequency Distribution of SKILLS Scores by Specific Strategy:
Professional Situation.**

Strategy	Scores						
	3.00	4.00	5.00	6.00	7.00	8.00	9.00
<u>Metacognition</u>							
Planning	1	1	11	32	47	54	17
Monitoring	6	12	29	41	48	20	7
Adjusting	<u>19</u>	<u>40</u>	<u>47</u>	<u>34</u>	<u>15</u>	<u>8</u>	<u>0</u>
Total	26	53	87	107	110	82	24
<u>Metamotivation</u>							
Attention	1	8	13	35	44	34	28
Reward	52	47	35	21	7	1	0
Confidence	<u>10</u>	<u>34</u>	<u>47</u>	<u>39</u>	<u>25</u>	<u>4</u>	<u>4</u>
Total	63	89	95	95	76	39	32
<u>Memory</u>							
Organization	10	26	45	45	24	7	6
External	2	10	12	33	51	40	15
Application	<u>17</u>	<u>43</u>	<u>44</u>	<u>34</u>	<u>19</u>	<u>3</u>	<u>3</u>
Total	29	79	101	112	94	50	24
<u>Critical Thinking</u>							
Assumptions	2	35	54	45	20	6	1
Alternatives	3	10	27	47	50	17	9
Cond. Acceptance	<u>0</u>	<u>10</u>	<u>24</u>	<u>31</u>	<u>45</u>	<u>39</u>	<u>13</u>
Total	5	55	105	123	115	62	23
<u>Resource Management</u>							
Identify	0	4	21	42	40	33	23
Critical Use	3	7	15	35	64	28	11
Human Resources	<u>1</u>	<u>8</u>	<u>14</u>	<u>51</u>	<u>40</u>	<u>30</u>	<u>19</u>
Total	4	19	50	128	144	91	53

$p = .001$) and reward ($t = 12.64$, $df = 162$, $p = .001$). The third strategy, confidence ($t = .17$, $df = 162$, $p = .866$) did not show a significant difference. Within the learning strategy area of memory, two of the three learning strategies that composed this area showed significant differences: organization ($t = 2.4$, $df = 162$, $p = .018$), and external aids ($t = 2.19$, $df = 162$, $p = .030$). The third specific strategy of application ($t = 1.22$, $df = 162$, $p = .224$) did not show a significant difference. In the area of critical thinking, two of the three specific learning strategies showed significant differences: assumptions ($t = 7.38$, $df = 162$, $p = .001$) and alternatives ($t = 4.96$, $df = 162$, $p = .001$). The third learning strategy within this area, conditional acceptance ($t = 1.36$, $df = 162$, $p = .177$) did not show a significant difference. The final strategy area examined was resource management, and again two of the three specific learning strategies in this strategy area showed significant differences: critical use ($t = 11.97$, $df = 162$, $p = .001$) and human resource ($t = 6.13$, $df = 162$, $p = .001$). The specific strategy of identifying resources ($t = .84$, $df = 162$, $p = .401$) did not show a significant difference.

t-tests with No Significant Differences

The t-tests used in examining significant differences between the means of the scores received in metacognitive strategies did not provide any differences of significance. The mean for the scores received in the utilization of

metacognitive strategies in personal situations was 18.4 and the mean for metacognitive strategies in professional situations was 18.4. The t-value was -0.20 with 162 degrees of freedom using two-tailed probability with a value of .840.

Predicting Learning Strategy Use

The t-tests reported above tested for differences in the situations but did not reveal if any other variable contributed to the way certain learning strategies were used. Demographic information was available on the administrators who responded and was used to predict the administrators' learning strategies.

The use of multiple regression analysis allows for the estimation of the degree of relationship between two or more independent variables and the related dependent variables being examined at the same time. How well a linear equation will explain the relationship between the variables is what was sought.

The second hypothesis tested in this study investigated the relationship between selected demographic variables and learning strategies. A series of independent analyses were used to test this hypothesis. In each analysis, all of the demographic variables gathered were entered into analysis to determine

their influence in predicting learning strategies used in professional situations and in personal situations.

The stepwise selection method was used for selecting independent variables for inclusion in the regression equation. In this method, independent variables are considered for entry into the equation according to the strength of their relationship with the dependent variable, and variables included in the equation are checked at each step to ensure that they account for enough variance to remain in the equation. Cases with incomplete data were deleted on a pairwise basis. The results of these regression indicate that there is no significant demographic variable influence on learning strategies used in either the personal or professional situation.

The low correlation between real-life learning strategies and demographic detail was of interest. It indicated that the age of a school administrator has little bearing on his/her ability to use real-life learning strategies in either the personal or professional situation.

The same was true when examining an administrator's current position, irrespective of whether the person was involved in central office work or building level duties. Whether an administrator has attained a terminal degree such as a doctorate or specialist makes little difference as to which strategies were chosen, nor the frequency of utilization.

The school administrator's teaching background played no significant role in the selection of real-life learning strategies. One's experience at teaching either elementary or secondary students had no significant bearing on the use of real-life learning strategies. Divergent training at the secondary level showed no significant advantage either to the administrator who was trained in and taught in an area such as English or to the individual who received their background and experience in vocational areas.

The significance that one's years of experience plays in the utilization of learning strategies in either the personal or professional situation is mute. School administrators showed no significant proclivity for using particular learning strategies irrespective of whether they had taught for two years or 43 years.

Personal Situations

Were any of the independent variables stated in the Demographic Information section of the study able to predict the use of SKILLS strategies in a personal context? A stepwise multiple regression was run. The frequency of r values for each of the SKILLS strategy areas dealing with personal learning situations were tabulated (see Table 15). In addition to running correlations on the main strategy areas, values were calculate for each of the 3 specific learning

strategies within the personal learning strategy areas. There were no significant r -values, with either negative or positive values, to report.

Table 15. Frequency of r -values Comparing Demographic Variables and Personal Learning Strategy Areas.

r -value	Strategy Areas				
	Metacognition	Metamotivation	Memory	Critical Thinking	Resource Management
.0 to .1	18	16	12	17	16
.1 to .2	8	7	6	9	8
.2 to .3	8	8	8	7	8
.3 to .4	2	2	2	2	2
.4 to .5	0	0	0	0	0
.5 to .6	0	0	0	0	0
.6 to .7	0	0	0	0	0
.7 to .8	0	0	0	0	0
.8 to .9	0	0	0	0	0
.9 to 1.0	0	0	0	0	0

Professional Situations

Were any of the independent variables stated in the Demographic Information section of the study able to predict the use of SKILLS strategies in a professional context? The frequency of r values for each of the SKILLS strategy areas dealing with professional learning situations were tabulated (see Table 16). In addition to running correlations on the main strategy areas, values were calculate for each of the 3 specific learning strategies within the

professional learning strategy areas. There were no significant t -values, with either negative or positive values, to report.

Table 16. Frequency of t -values Comparing Demographic Variables and Professional Learning Strategy Areas.

t -value	Strategy Areas				
	Metacognition	Metamotivation	Memory	Critical Thinking	Resource Management
.0 to .1	12	15	13	14	19
.1 to .2	7	6	6	6	7
.2 to .3	8	8	8	8	9
.3 to .4	2	2	2	2	2
.4 to .5	0	0	0	0	0
.5 to .6	0	0	0	0	0
.6 to .7	0	0	0	0	0
.7 to .8	0	0	0	0	0
.8 to .9	0	0	0	0	0
.9 to 1.0	0	0	0	0	0

Summary

The results of the t -tests confirm that administrators use learning strategies differently in personal and professional situations. The t -tests indicated two things: (a) there were significant differences between certain real-life learning strategies (memory, metamotivation, critical thinking and resource management) when used in two different contexts. This was confirmed by the t -tests on the specific learning strategies within each of the four major

strategy areas (memory: organization, external stimulators, and application; metamotivation: attention, reward/enjoyment, and confidence; critical thinking: assumptions, alternatives, and conditional acceptance; resource management: identifying, critical use, and human resources). Of the 12 specific strategies, 8 showed significant differences (memory: organization and external stimulators; metamotivation: attention and reward/enjoyment; critical thinking: assumptions and alternatives; resource management: critical use and human resources). Thus, two-thirds of the specific strategies, in addition to the 4 out of 5 major strategy areas, indicated that school administrators do use different learning strategies in personal and professional learning contexts. There were no significant differences, however, when using metacognitive strategies in either the personal or professional situation, and (b) there were no meaningful correlations between the various demographic factors studied (age, current position, academic attainment, teaching background) and those real-life learning strategies used in either personal or professional situations. Correlations were calculated for the five SKILLS strategy areas in addition to each of the specific strategies within each area (see Table 17). There were no r -values above the .4 level. Thus, none of the demographic variables can be used to predict either personal or professional real-life learning strategies.

Table 17. Frequency of r -values Comparing Demographic Variables and Strategy Areas.

r -value	Strategy Areas				
	Metacognition	Metamotivation	Memory	Critical Thinking	Resource Management
.0 to .1	30	31	25	31	25
.1 to .2	15	13	12	15	15
.2 to .3	16	16	16	16	17
.3 to .4	4	4	4	4	4
.4 to .5	0	0	0	0	0
.5 to .6	0	0	0	0	0
.6 to .7	0	0	0	0	0
.7 to .8	0	0	0	0	0
.8 to .9	0	0	0	0	0
.9 to 1.0	0	0	0	0	0

Conclusion

Thus, the first hypothesis, that there is no significant relationship between the type of learning situation and learning strategy score measured by SKILLS is rejected. The results of this survey would suggest that there are significant differences in the types of learning strategies that are employed by adult learners in different contextual real-life situations.

The second hypothesis, that there is no significant relationship between the demographic factors of age, type of academic training, years of experience, and scope of administrative duties and learning which are measured by SKILLS and which are strategies used in professional and in personal learning situations,

is retained. Significant lack of correlation would support this hypothesis. These demographic factors cannot be used to predict learning strategy use in various contextual situations.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The Purpose of This Study

As a result of the study several important findings were drawn concerning the utilization of real-life learning strategies in both personal and professional situations. This was the first study conducted that examined the use of learning strategies in a contextual situation using professionals in the field of education. The study was conducted using a sample of school administrators from the state of Wyoming. Of the 389 identified administrators in the state, 163 were included in the study responded and returned survey materials.

Differences Between Personal and Professional Real-life Learning

Through the use of t-tests it was found that school administrators did differ at a statistically significant level in their use of learning strategies in personal learning situations from their use of learning strategies in work-related, professional settings. Adult learning for the most part involves real-life situations. In this study two real-life situations were examined to find out if

there were any differences between the learning strategies used in personal learning settings as opposed to professional learning situations. The learning strategies were evaluated using the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS) instrument.

Each of the five learning strategy areas of metacognition, metamotivation, memory, critical thinking, and resource management were analyzed. Additionally, within each strategy area the specific learning strategies were compared. The strategy area of metacognition was the only area in which administrators did not show significant differences in their use of strategies between the two learning situations under investigation. Thus, eighty percent of the strategy areas examined did show significant differences based upon t-tests. Further, within the strategy areas which showed significant differences, two-thirds of all the specific strategies supported the same conclusion that school administrators use different learning strategies in the personal situation than in the professional context. Demographic factors investigated did not have any significant bearing on the use of learning strategies in either the personal or professional context.

Conclusions

This study found that learning strategies used by school administrators in Wyoming are contextual. In real-life learning situations administrators use different strategies depending on the particular learning situation they encounter.

School administrators, like other adult learners, are making choices as to how they will approach each learning situation. These learning needs are met in different ways. If an administrator's learning style was examined, it might be said that the style was "generic" in composition. That is to say, one's style is unchanging; it is part of our internal makeup (Conti, 1985). However, this does not appear to be true of learning strategies. When faced with a learning situation, the learning strategies used must be selected specifically, and these change depending upon the learner's perception of what has to be learned. Administrators are active learners; much of their time is spent in finding creative solutions when confronted by difficult, external problems. Specific learning strategies are used to meet particular learning needs. The learning strategies used by a school administrator when making budget and personnel decisions differ from the specific strategies used in personal learning contexts such as how to decrease one's cholesterol level. In this study the strategy areas of memory and resource management were used more frequently than the other

SKILLS identified areas. Within these areas, the specific strategies involving organization, external aids, critical use, and human resources were particularly used by the administrators in professional learning situations. Using an array of available resources that are linked to one's past experiences plays an important part in learning within the professional context.

This study also showed that the strategy areas of metamotivation and critical thinking had greater application in conjunction with contextual situations of a personal nature. Personal learning situations might provide greater variability in assessing what needs to be learned. When learning about something that has immediate application to one's self or the home environment, the metamotivational strategies (attention and reward/enjoyment) used to accomplish such tasks suggest greater self-satisfaction with success. Learning strategies associated with critical thinking (assumptions and alternatives) suggest that the personal situation allows for greater usage of more creative alternatives to learning tasks.

SKILLS appears to be a generic instrument that can be used in different contextual situations. By altering scenarios contextually, it is possible to modify the learning situation but keep the method of measuring strategies the same.

The range of scores achieved in each of the specific strategies provides dramatic evidence of how the **SKILLS** instrument was able to discriminate the

use of learning strategies (refer to Chapter IV, Tables 13 and 14). The frequency distributions for the scores in each of the five strategy areas form a bell-shaped configuration which provides further evidence that the SKILLS instrument was able to separate and discriminate among learning strategies used by individuals in this particular context. Thus, the strategies used by the individual learner in a specific context are able to be identified as distinct from those strategies by a different individual in the same contextual situation.

The professional situation scores also clearly support the finding that the SKILLS instrument was able to discriminate between individual learning strategies. The range of scores for administrative scenarios was from 9 to 26. The average score achieved by respondents on all three professional situation scenarios was 18.30. Thus, in future work with school administrators and learning strategies, this score could be used as a benchmark or standard by which to gauge administrator achievement relative to learning strategies. The range of scores achieved in each of the specific strategies provides dramatic evidence of how the SKILLS instrument was able to discriminate between individual scores (refer to Chapter IV, Tables 13 and 14). Note the totals for each of the five strategy areas within the professional situation scores. These totals are bell shaped. Again, this configuration provides further evidence that

this instrument was able to separate and discriminate between learning strategies used by individuals in this particular context.

Demographic Influences

The results of the multiple regression calculations indicate that there is no significant influence attributable to the respondent's demographic information and the specific learning strategies used in both personal and professional learning contexts. The r -values reported (refer to Chapter IV, Table 17) all fell well below an acceptable and significant level of .7. There were no negative r -values of any significance.

Adult Learning Strategies

The results of this study indicate that adults (a) use learning strategies that meet their learning needs; learning is situational, and (b) as situations alter, the adult learner is able to adjust to the changing situation. When dealing with an individual's learning style, the individual learner is "locked" into highly "individualized preferences and tendencies that influence his or her learning" (Smith, 1982, p.17). However, when dealing with learning strategies, the adult learner is an active learner who is able to decide and select, via analyses of external factors, the learning strategies that will provide a viable solution to the

learning task at hand. In essence, adults are able to select "tools" to assist them in completing learning tasks.

Recommendations

A practical application of the SKILLS instrument and learning strategies that should be considered is the utilization of the SKILLS instrument as a diagnostic tool in assisting and counseling people to better understand how they actually approach a particular learning task. McKeachie (1988) argues that individuals are able to build up a kind of schema concerning certain learning skills, and that if they were able to identify or practice things such as learning strategies, they would, in essence be receiving feedback as to what would or would not work. This counseling or identification of an individual's own "toolbox" of learning strategies could provide invaluable feedback prior to undertaking a learning task in virtually any context or situation.

The findings of this study would support the idea that there are diverse learning strategies used by various groups of people. It would be feasible and beneficial to organize and conduct workshops for a variety of people, such as school administrators, the elderly, the business community, Native American groups, or others that allowed for the identification of individual learning

strategies and subsequent training in those learning strategy areas that might be individually deficient in the work situation.

The results of this study present some insightful conclusions regarding the use of learning strategies by school administrators in both personal and professional learning situations. In addition, findings concerning the contributions that demographic factors such as age, level of academic attainment, and teaching area play in the utilization of specific learning strategies in both the personal and professional learning context had no bearing on strategy utilization. The relationships described in this study could be further analyzed and used as a basis for future research studies investigating learning strategies. With this in mind, the following have been identified as areas where further research and training could be conducted concerning the theory and practice of learning strategies as related to school administrators:

1. The t -tests conducted on the two parallel sets of SKILLS questions provide data that suggest the SKILLS instrument, with additional group specific scenarios added, could be used to identify learning strategies in various contextual situations. This would enable training programs to be developed to permit greater awareness and utilization of specific learning strategy areas. Individuals participating in these training programs could be provided with opportunities to identify strategy areas that are used frequently and those areas

which need development. The training program could be developed with specific contextual areas being pinpointed for concentrated training applications as well as using the instrument to gauge the effectiveness of the training.

2. Self-assessment workshops should be developed. These workshops could center attention on providing individuals with an awareness of what learning strategies are, and identify with the use of the SKILLS instrument which ones they use in personal learning situations. The tests run on the SKILLS instrument indicated that a wide range of strategies usage can be discriminated in the strategy areas associated with personal learning situations.

3. Research should be conducted with SKILLS to test different groups to see if they are using the same strategies. Different populations or perhaps professions could be examined to evaluate any parallel usage of learning strategy areas. Are the norms which were developed in this study of school administrators generic so that they would be valid with other groups? Further study could be undertaken with groups involved in training activities, such as teachers, the military, and labor unions to ascertain whether adult learning strategies are specific to contextual situations.

4. Graduate-level training for administrators should incorporate an awareness of learning strategies and appropriate usage. This could be integrated into course work required for state administrative certification. The

norms set in this study would serve as a benchmark to evaluate the individual's own level of usage.

5. Administrators frequently interact with students, teachers, parents and community members. Finding out the interrelationships between the administrator's learning strategies and the strategies used by each group could provide useful and insightful data that might improve the effectiveness of such interactions.

6. This study found that learning strategies were used differently depending on the context encountered. A further study could be conducted to investigate the reasons why people use different levels of a particular learning strategy. The usage of metamotivational and memory strategies in the professional setting were found to be at a lower level than in the personal learning situation. The reasons for this difference should be studied. A thorough naturalistic study would perhaps be appropriate to investigate this very interesting question.

7. Studies should be conducted to determine if the significance of high and low scores in the five different strategy areas are good or bad. The average score in the strategy area of metamotivation in professional settings was 16.7. When compared to the average metamotivation score in the personal learning situation of 18.5, the score of 16.7 appears low. Is this good or bad? What

does it mean? A further investigation might provide some interesting and rewarding conclusions.

Study concerned with adult learning strategies is a new and exciting area that is continuing to grow. What started and flowed out of the research on learning how to learn has developed into a dynamic field of study which is currently being actively researched. This study further confirms the validity and reliability of the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS). As educators and training professionals become more aware of the important role that learning strategies play in real-life learning situations, it is hoped that studies such as this will offer these professionals an even greater canvas, to broadly sketch and ultimately paint a rich patina of understanding in real-life learning.

The first part of the paper discusses the importance of the study and the objectives of the research. It highlights the need for a comprehensive understanding of the subject matter and the role of the researcher in this process. The second part of the paper describes the methodology used in the study, including the data collection methods and the analysis techniques. The third part of the paper presents the results of the study and discusses the implications of the findings. The final part of the paper concludes the study and provides recommendations for future research.

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APPENDICES

APPENDIX A
INSTRUMENT

DIRECTIONS: There are six (6) real-life scenarios to be examined. Three of these deal with personal situations and three with professional situations that might be encountered by a school administrator. For each scenario, select the six (6) learning strategies that you would **Definitely Use**, six (6) that you might **Possibly Use**, and six (6) that you would **Not Likely Use**. Enter the number for each of these items in the proper box on the response sheet provided.

SCENARIO A - AUTO INSURANCE

Your insurance company has better rates on auto insurance and better customer service than any company you have ever found. However, they believe that informed drivers are good drivers and have just started giving tests about driving laws and practices to everyone who wants to renew their insurance policy with the company. How likely are you to use the following learning strategies in preparing for the test?

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Starting the learning by looking at materials to determine what is most important to study 2. Making up your mind to study the testing information because you want to renew your policy 3. Asking your local insurance agent whether the company has prepared material to help people study for the test 4. Marking those areas you think are important on a copy of the material you are studying 5. Thinking about the advantages and disadvantages of continuing with the insurance company 6. Reminding yourself periodically that you do not want to have to change your insurance company 7. Checking out the correct practice with an expert if you disagree with answers suggested in study material 8. Comparing the recommendations offered in the study material with your driving practices 9. Stopping to ask yourself questions while studying to see if you are remembering specific information | <ol style="list-style-type: none"> 10. Making a concerted effort to study for the test because you are confident you will pass if you do study 11. Developing visual images in your mind, such as picturing a page in the manual, to help you remember 12. Finding another person taking the test who can quiz you over the material 13. Making a list of the things you have trouble remembering in order to review them often before the test 14. Imagining what might happen if you did or did not observe these regulations 15. Thinking of the personal pride you will have in passing the test and being able to tell others about it 16. Thinking about past experiences you have had taking exams so you can avoid difficulties on this test 17. Deciding to stop studying when you feel you are prepared for the exam 18. Thinking through the difference between things you learn that may help you pass the test and those that may actually improve your driving |
|---|---|

SCENARIO B - CHOLESTEROL LEVEL

You have recently visited the doctor and discovered that your cholesterol level is well above a healthy level. You have been advised to regulate this condition through diet. You are now left with the task of learning about proper nutrition and of changing your eating habits. Your next checkup is in six weeks. How likely are you to use the following strategies in learning what you need to do in order to change your eating habits?

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Making a plan that will help you learn enough about cholesterol in order to change unhealthy eating habits 2. Focussing on learning about good diet practices instead of worrying about the health hazards from excess cholesterol 3. Getting a book that has recipes for a low cholesterol diet and information on cholesterol from your local book store 4. Repeating to yourself the various types of ingredients to avoid so you will recognize them when reading labels 5. Checking for other ways of lowering your cholesterol besides changing your diet 6. Challenging yourself to learn enough about diets to reduce your cholesterol significantly by your next visit to the doctor 7. Setting up an appointment with a dietitian to help you make sense of all the information you have been receiving and hearing about 8. Thinking about what foods you are willing to give up in order to improve your health 9. Checking to see if what you are learning is actually helping you solve your cholesterol problems | <ol style="list-style-type: none"> 10. Reminding yourself you have been able to learn new health practices before 11. Organizing high cholesterol foods into certain categories to help remember what foods to avoid 12. Calling several friends who have had high cholesterol to discuss what lifestyle changes worked best for them 13. Placing a cholesterol information sheet on your refrigerator as a reminder to change your eating habits 14. Studying various eating habits so you can set priorities on which changes will have the most impact on lowering your cholesterol 15. Thinking of how good it will feel to know that you can control your cholesterol level 16. Reflecting on previous experiences you have had with diets to know what techniques and attitudes work for you 17. Revising your learning method if you find you are becoming confused 18. Deciding to implement a specific low-cholesterol diet with the understanding that you will periodically check its effectiveness. |
|--|--|

SCENARIO C - TOXIC WASTE

Your community is economically dependent upon the university located in the area. Recently several research components of the institution have developed national reputations and earned several large grants. The bad news is that two of the research programs are also developing significant amounts of toxic waste that they need to dispose of locally. You have been selected to serve on a committee to decide on how to dispose of the toxic waste or cut back on the research programs. Which of the following learning strategies are you likely to use in order to learn what you need to know in order to make a decision regarding this problem?

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Asking yourself what approaches have worked best for you in the past when having to make difficult decisions 2. Focusing on learning about the issues rather than wondering about what other people on the committee are doing 3. Using the university library to identify a number of resources relating to research and toxic waste 4. Skimming through information to make information you want to remember when meeting with the committee 5. Checking the bases for assumptions that maintain that toxic waste cannot be safely disposed of within your community area 6. Reminding yourself of the benefits to you and the community that will result from solving this problem 7. Analyzing carefully all the information given you to see if the producers of the material might be biased 8. Concentrating your learning on what other universities have done to solve toxic waste problems 9. Checking occasionally to make sure you are learning about all aspects of the situation | <ol style="list-style-type: none"> 10. Reassuring yourself that you and your committee will come up with some recommendations that will help resolve the issue 11. Using mental images to help organize the most important ideas you wish to remember for committee meetings 12. Listening closely to those who suggest differing opinions to understand the reasons for their positions 13. Keeping a list of the points you want more information about before a decision is made 14. Keeping track of all possible solutions including those that sound strange when first heard 15. Deciding to resign from the committee if you cannot come up with a solution about which you feel good 16. Thinking of previous experiences you have had with committees in order to organize your ideas and suggestions 17. Reflecting on your learning process to check if there are aspects of the issue you have avoided 18. Thinking through the long range effects of any conclusions you think might work |
|---|--|

Please Turn Over

DIRECTIONS: There are six (6) real-life scenarios to be examined. Three of these deal with personal situations and three with professional situations that might be encountered by a school administrator. For each scenario, select the six (6) learning strategies that you would **Definitely Use**, six (6) that you might **Possibly Use**, and six (6) that you would **Not Likely Use**. Enter the number for each of these items in the proper box on the response sheet provided.

SCENARIO D - ADMINISTRATIVE CERTIFICATION

Your state legislators have approved "The Twenty-First Century School Leader", a new classification level for school administrators. You decide it would be nice to have because of salary and advancement benefits. To qualify for the certification you must pass a test developed by the Secondary School Principals Association (SSPA), which was designed to measure knowledge of recommended modern educational practices. How likely are you to use the following learning strategies in preparing for the test?

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Starting the learning by looking at materials to determine what is most important to study 2. Making up your mind to study the testing information because you want the benefits of the new classification 3. Asking the professional association (SSPA) whether they have prepared material to help people study for the test 4. Marking those areas you think are important on a copy of the material you are studying 5. Thinking about the advantages and disadvantages of trying for the new classification level 6. Reminding yourself periodically that you do not want to miss the chance for professional advancement 7. Checking out the correct practice with an expert if you disagree with answers suggested in the study material 8. Comparing recommendations offered in the study material with your current administrative practices 9. Stopping to ask yourself questions while studying to see if you are remembering specific information | <ol style="list-style-type: none"> 10. Making a concerted effort to study for the test because you are confident you will pass if you do study 11. Developing visual images in your mind, such as picturing a page in the manual, to help you remember 12. Finding another person taking the test who can quiz you over the material 13. Making a list of the things you have trouble remembering in order to review them often before the test 14. Imagining what might happen in your administrative practice if you did or did not observe these regulations 15. Thinking of the personal pride you will have in passing the test and being able to tell others about it 16. Thinking about past experiences you have had taking exams so you can avoid difficulties on this test 17. Deciding to stop studying when you feel you are prepared for the exam 18. Thinking through the differences between things you learn that may help you pass the test and those that may actually improve your administrative practice |
|--|--|

SCENARIO E - MIDDLE SCHOOL MODEL

For the past three years you have been principal of a Junior High school of approximately 450 students. The district superintendent has asked you to formulate a plan of action to change from the 7-9 Junior high configuration to a "transcience" model of a 6-8 middle school of approximately the same enrollment size. How likely are you to use the following learning strategies in learning about middle schools and developing a plan of action?

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Making a plan that will help you learn enough about middle schools in order to change the school configuration 2. Focusing on learning about changing to a middle school instead of worrying about the reactions of some people to change 3. Getting reading material from your professional organization or the university about changing school models 4. Repeating to yourself the important steps involved in such a change so you will remember to find information on each step 5. Checking for a way of improving the school system without switching to a middle school model 6. Challenging yourself to learn enough about changing school models in order to impress the superintendent 7. Setting up an appointment with an expert on middle schools to help you make sense of all the information you have been gathering 8. Thinking about what Junior High elements or activities you are willing to give up in order to make the change 9. Checking to see if what you are learning is actually helping you develop a plan for the change | <ol style="list-style-type: none"> 10. Reminding yourself that you have been able to develop plans for educational change before 11. Organizing the problems involved in such change into certain categories to help remember the issues with which you must deal 12. Calling several friends that have been involved in school changes to discuss what worked best for them 13. Keeping a list of questions on your desk as a reminder of the type of information still needed 14. Studying various alternatives in a change plan so you can set priorities on what steps are the most likely to work 15. Thinking of how good it will feel to present a well thought out plan to the superintendent 16. Reflecting on previous experiences you have had with school change to know what techniques and attitudes work for you 17. Revising your learning method if you find you are becoming confused 18. Deciding to suggest a specific middle school model with the understanding that it will be periodically checked for effectiveness |
|---|---|

SCENARIO F - "DROP-OUT" REDUCTION PLAN

Several years ago the school district where you are currently employed was fortunate to obtain a sizable federal grant which enabled the district high school to undertake a partnership with a number of local community businesses. The grant enabled the district to create a "work study" program in an effort to reduce the number of high school drop-outs. The grant provided substantial funds to subsidize local businesses who employed students on a part-time basis. However, rather than decrease the student drop-out rate, the latest district drop-out figures suggest that the rate has actually increased. This is a serious problem and if allowed to continue might jeopardize the future of the grant and, of course, the supplemental income that various local businesses have been receiving. You have been selected to serve on a committee of school and community leaders with the objective of coming up with a plan to reverse this alarming trend. Which of the following learning strategies are you likely to use to learn what you need to know in order to make a decision regarding this problem.

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Asking yourself what approaches have worked best for you in the past when having to make difficult decisions 2. Focusing on learning about the issues rather than wondering about what other people on the committee are doing 3. Using the university library to identify a number of resources relating to grants and community-school partnerships 4. Skimming through information to mark information you want to remember when meeting with the committee 5. Checking the bases for assumptions that maintain that drop-out rates and work-study programs have a positive influence on each other 6. Reminding yourself of the benefits to you and your community that will result from solving this problem 7. Analyzing carefully all the information given you to see if the drop-out rate report is in fact correct and accurate 8. Concentrating your learning on what other schools-communities have done to solve drop-out problems in high schools | <ol style="list-style-type: none"> 9. Checking occasionally to make sure you are learning about all aspects of the situation 10. Reassuring yourself that you and your committee will come up with some recommendations that will help resolve the issue 11. Using mental images to help organize the most important ideas you wish to remember for committee meetings 12. Listening closely to those who suggest differing opinions to understand the reasons for their positions 13. Keeping a list of the points you want more information about before a decision is made 14. Keeping track of all possible solutions including those that sound strange when first heard 15. Deciding to resign from the committee if you cannot come up with a solution about which you feel good 16. Thinking of previous experiences you have had with committees in order to organize your ideas and suggestions 17. Reflecting on your learning process to check if there are aspects of the issue you have avoided 18. Thinking through the long range effects of any conclusions you think might work |
|---|---|

APPENDIX B
SURVEY LETTERS



CODY HIGH SCHOOL

R. J. McKenna
Principal

J. Pomajzl
Dean of Students

May 21, 1991

Dr. Monica Beglau
Principal
Davis Elementary
6309 Yellowstone Road
Cheyenne, WY 82001

PERSONAL AND CONFIDENTIAL

Dear Monica,

Being a fellow school administrator I realize that your time is extremely valuable and certainly in demand. You are being asked to participate in a research-based project to examine some of the aspects that contribute to **effective school leadership**. The theme to be studied is the identification of the learning strategies that you use in real-life learning situations (both professionally and personally). Upon completion of the data analysis I shall endeavor to provide you with a summary of the **learning strategies** that you employ in real-life learning situations. The information requested will be used in the strictest of confidence and will in no way identify individuals or particular sites. The instrument(s) that will be used to gather the data necessary for analysis are enclosed and should take approximately 20 minutes of your time to complete.

The self-addressed stamped return envelope is encoded with an I.D. number. This is merely a way of tracking the return of materials and it will not be used to identify resultant data. However, as a way of **thanking you** for the effort and time taken to participate in this study **upon returning your response sheet**, your encoded envelope will be tossed in a hat containing all other returned envelopes and one selected. This person will win a one night stay in Cody (double room at the Cody Holiday Inn) and two complimentary entries to the Buffalo Bill Historic Center to visit the new Firearms Collection and other exhibits. The "winner" will be notified shortly after all returns are collected.

With administrative vacations beginning shortly, I would ask you to return, in the enclosed self addressed stamped envelope, the completed response sheet (only) by **June 6, 1991**. Thanking you in advance for assisting with this important work.

Sincerely,

R. J. McKenna

Robert J. McKenna

2007 Pioneer Ave., Apt. #14, Cody, Wyoming 82414

July, 1991

Mr. Roger Bengtson
Deming Elementary
715 West 5th Avenue
Cheyenne, WY 82001

Personal

Dear Roger,

I certainly trust that the end of the school year went well for you. It certainly is a relief to be finished and able to sit back and reflect on ones past accomplishments and future needs.

Several weeks ago I wrote and asked if you would participate in an important research project dealing with **effective school leadership**. As of yet I have not received back your response sheet and wanted to again ask for your assistance in conducting this important work. Would you please help a fellow Wyoming administrator out? If by chance you misplaced your survey packet I have enclosed additional materials with this letter. Your assistance is really needed. The lucky winner for the accommodation and museum tour to Cody will be drawn shortly and I would like to include your return envelope in the draw. Thanking you in advance for your consideration and time.

Sincerely,

Bob McKenna

APPENDIX C

DEMOGRAPHIC INFORMATION SHEET

ADMINISTRATIVE REAL-LIFE LEARNING STRATEGIES SURVEY
DEMOGRAPHIC INFORMATION

Current Administrative Position: (Please Check As Appropriate)

Central Office Positions

- Superintendent
 Assistant Superintendent
 Other (please specify) _____

Years in Current Position:

_____ (Please Specify)

Building Level Positions

- Elementary Principal
 Elementary Assistant Principal
 Middle School Principal
 Middle School Assistant Principal
 Junior High School Principal
 Junior High School Assistant Principal
 Senior High School Principal
 Senior High School Assistant Principal

Academic Preparation: (Please Check As Appropriate)

Undergraduate Major (Select 1)

- Education
 Humanities
 Math/Science
 Engineering
 Other (specify) _____

Graduate School (Highest Degree Earned)

- Masters
 Specialist
 Doctorate

Current Age: (Please Specify): _____

Teaching Experience: (Please Check As Appropriate)

Elementary (Select 1)

- Grades K-3
 Grades 4-6

Secondary (Main Subject Taught; Select 1)

- English
 Social Studies
 Science
 Mathematics
 Vocational Subjects
 Foreign Languages
 Physical Education/Health
 Other (Specify) _____

Years of Experience:

_____ (Please Specify)

Please Turn Over

**Directions and Response Sheet for
Administrative Real-life Learning Strategies Survey**

There are six (6) real-life scenarios to be examined. Three of these deal with personal situations and three with professional situations that might be encountered by a school administrator. For each scenario, select the six (6) learning strategies that you would **Definitely Use**, six (6) that you might **Possibly Use**, and six (6) that you would **Not Likely Use**. Enter the number for each of these items in the proper box below.

Scenario A - Auto Insurance

Definitely Use						Possibly Use						Not Likely Use					

Scenario B - Cholesterol Level

Definitely Use						Possibly Use						Not Likely Use					

Scenario C - Toxic Waste

Definitely Use						Possibly Use						Not Likely Use					

Scenario D - Administrative Certification

Definitely Use						Possibly Use						Not Likely Use					

Scenario E - Middle School

Definitely Use						Possibly Use						Not Likely Use					

Scenario F - Drop-Out

Definitely Use						Possibly Use						Not Likely Use					

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