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A comparison of Louisiana secondary career and technical teachers and academic teachers on learning type and perception of school climate

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A COMPARISON OF LOUISIANA SECONDARY CAREER AND TECHNICAL
TEACHERS AND ACADEMIC TEACHERS ON LEARNING TYPE
AND PERCEPTION OF SCHOOL CLIMATE

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The School of Human Resource, Education and Workforce Development

by

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M.S., Louisiana State University, 1987
December 2002
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This day has been long in coming, but is finally here. There are many people to whom I owe my sincerest gratitude. Foremost I would like to thank God for giving me the intelligence and perseverance to accomplish this feat. Without God, nothing would be possible.

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ABSTRACT

The purpose of this study was to investigate the relationship between Louisiana public secondary school teachers’ primary learning type and teaching area; and the influence of learning type and teaching area on the teacher’s perception of school climate. A total of 293 Louisiana public secondary school teachers participated in the study. An instrument with three parts was used to collect data for this study: demographics, Learning Type Measure and Organizational Health Inventory. Over two-thirds of the respondents were female. Mean age was 43 years and mean teaching experience was 16.41 years. Over three-fourths of respondents were white while over 50% had only a bachelor's degree. Almost half (49%) of respondents were type 3 (common sense) learners. Almost 60% of career and technical teachers had a dominant type 3 (common sense) learning type while about one-third of academic teachers were dominant type 3 (common sense) learners.

The mean school health score was 535.04 (SD = 139.34). The mean school climate score was above average. School health index scores ranged from 116.16 to 848.84. No statistically significant differences were found in mean school climate scores among the four learning types. No statistically significant differences were found in mean school climate scores by teaching area. No statistically significant correlations were found between school climate scores and various demographic characteristics (gender, age, ethnicity, and years teaching experience).

Differences in school climate scores were analyzed by various school factors including school size, type of schedule, and years on current schedule. Statistically significant differences exist in teachers' school climate scores by type of schedule and number of years on current schedule. Teachers on a traditional six period schedule have
higher perceptions of school climate than those on traditional seven period schedules, seven period A-B/flex, or four-by-four block schedules. In addition, teachers on the current schedule type for less than one year were found to have a higher perception of school climate. The findings are in contrast to previous studies on type of schedule and number of years on schedule. Further research is recommended to determine why this occurred.
CHAPTER ONE: INTRODUCTION

The American educational system was developed to provide a systematic way of promoting this country’s democratic principles. The system is considered to be one of America’s unique and distinguishing characteristics (Reabore, 1998). In the beginning, education was considered a luxury, but technological advances of today make it a necessity.

In a world of unpredictable change and speed, our schools must become centers, not of information, but of knowledge and understanding. Our students come to us needing to be understood before they can understand, and needing to make sense of the deluge of information coming at them from countless sources . . . . They need to practice in a school where teachers value them as people and as learners (Blegen & Kennedy, 2000, p. 2).

The nation is currently in the “third wave” of educational reform. (Hirsh, Koppich, & Knapp, 1998, p. 1). The first wave centered on the establishment of higher and more rigorous academic standards for students, new curricula, and assessments. The second focused on the structural aspects including teacher salaries and authority. Neither of these efforts saw widespread improvement in student achievement. This third wave focuses on “improving the quality of teaching” (Hirsh, et al., 1998, p. 2). "The new wave of school reform aims to develop better answers to school problems by involving teachers along with parents, students, and school administrators in school decision making and management based on an understanding that simple top-down answers to complex problems essentially don't work" (Darling-Hammond, Griffin, & Wise, 1992, p. 11). "The new standards movement has emerged in response to a commonly perceived need to raise even further the expectations, quality of teaching and levels considered as satisfactory achievement for all students in the United States" (Doolan & Honigsfeld, 2000, p. 274). Goals 2000: Educate America Act set national goals for education including that ". . . every school in America
will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment. . ." (The National Education Goals, 1996, p. 1). School accountability and the "No Child Left Behind Act of 2001" (Public Law # 107-110) require schools to focus on improvement. "School improvement efforts and/or educational reform will most likely not happen until effective teachers are regarded as the most important entity" (Gordon & Yocke, 1999, p. 47). School improvement can only be accomplished by improving school effectiveness as it relates to improved student achievement.

According to Hirsh, Koppich, and Knapp (1999), the teacher plays a critical role in reform efforts linked to higher student achievement. True reform occurs when teacher collaboration reaches a level that insures higher achievement levels are attained by all students (Scheidler, 1994). Darling-Hammond, et al. (1992) indicate that "because students learn at different rates and in different ways, there will never be 'one best system' of education, or a singular set of teaching prescriptions that can meet all of their diverse needs" (p. 13). Making progress in school reform movements requires teachers to make changes in their thinking on education (Scheidler, 1994). School effectiveness research has focused on differences in teaching practices and classroom climate (Fuller & Clarke, 1994). Teachers play a vital part in impacting changes in schools and ultimately student achievement. According to Callihan (1999), teachers need a method of organizing what they know about education along with ways to integrate new possibilities. Thinking and practice of teachers must be targeted to substantially improve public education (Scheidler, 1994).
Cawelti (1994) expressed a need to provide learning experiences that allow students to derive their own meaning from learning through higher-order thinking and problem solving. Students need to develop a “natural cycle of learning” (McCarthy, 1997, p. 46) by developing a pattern of learning through incorporating activities from all learning quadrants. Teachers need to help students “work for balance and wholeness” (McCarthy, 1997, p. 50) by using instructional methods that are meaningful to each student throughout the learning cycle. It is the responsibility of the school to help students who cannot learn in the usual way to learn in another way (Sizer, 1996).

The National Commission on Teaching and America’s Future stated in a 1996 report that “. . .what teachers know and can do makes the crucial difference in what children learn” (as cited in Hirsch, Koppich, & Knapp, 1998, p. 2). Research has shown that a demonstrative relationship exists between specific teacher behaviors and successful student performance (McCarthy & St. Germain, 1999). Several types of teacher characteristics appear to be related to teacher effectiveness. Among these are the verbal ability of teachers, subject matter knowledge, knowledge of teaching and learning, and the ability to use a wide range of strategies adapted to student needs. “The use of effective practices appears to be influenced by teacher education and professional development, particularly training that focuses on analysis of learning and methods for teaching specific content to different kinds of learners” (Darling-Hammond, 1999, p. 1). To be maximally effective, teachers need to understand how students' learning types differ (Gephart, Strother, & Duckett, 1980). "All students will reach the destination, but not in the same ways or at the same rates" (Sizer, 1992, p. 44).
Differences in teaching practices and classroom climate have been considered in school effectiveness research (Fuller & Clarke, 1994). School climate has been defined as “. . .everything we do in the name of schooling” (Northwest Regional Educational Lab, 1985, p. 2). Climate “. . .embraces the notion that a wholesome learning environment affects the degree and quality of achievement and total personal growth of our students” (Northwest Regional Educational Lab, 1985, p. 2). Climate is influenced by the personalities of all who interact within the school environment and is frequently characterized based on the perceptions of employees (Hoy & Miskel, 1996). “The climate of a social environment is formed by the norms, beliefs and attitudes reflected in the conditions, events and practices of a particular environment . . . Climate conditions, as perceived by persons who work within or know a particular environment, serve as the basis for establishing expectations and interpreting events or activities which occur within that environment” (Kelley, 1980, p. 2).

School reform movements have been ineffective because academia has ignored cries for changes in the way students are educated (Shepro, 1995). Edwards (1997) questions whether today’s public education is good enough to prepare children for the 21st century, or is a “. . .ball and chain in the high tech information society in which we now live?” (Edwards, 1997, p. 7).

Statement of the Problem

Improvement of education is a national concern. Many variables affect school effectiveness. The role of the teacher is paramount in finding a permanent solution to the problems that face education. By helping teachers understand their own learning type and
how it affects their teaching and perception of the learning environment, a lasting
impression can be made on the educational system in America.

Many studies on learning types and climate have been conducted. The majority of
these focus on student learning types and various other variables. Some studies focused on
teacher learning type through in-service activities. During the last decade, several studies
have looked at the learning type of teachers as it relates to teaching methods used (Gruber
& Carriuolo, 1991; Raven, Cano, Garton, & Shelhamer, 1993; Stitt-Gohdes, Crews, &
McCannon, 1999). No study was found in the literature that describes differences in
teacher learning types among teacher in various academic or non-academic teaching areas.
School climate studies (Wang, Haertel, & Walberg, 1994; Rowan, Raudenbush, & Kang,
1991; Reihl & Sipple, 1996; Creamean & Norvath, 2000; Shore, 1997; McCoy, 1999) have
focused on school improvement, faculty collegiality, effect on student achievement, and
various factors affecting climate. A study by Rowan, et al., (1991) found significant
differences in climate scores according to teaching area. No studies were found that
describe school climate in terms of teacher learning types.

Purpose of the Study

The purpose of this study was to investigate the relationship between Louisiana
public secondary school teachers’ primary learning type and teaching area, and the
influence of learning type and teaching area on the teacher’s perception of school climate.

Objectives of the Study

The specific objectives of the study were to:
1. Describe Louisiana public secondary school teachers on selected demographic variables. These characteristics include: years of teaching experience, teaching area, age, gender, ethnic group, and highest degree earned.

2. Determine the dominant learning type of Louisiana public secondary school teachers as measured by the Learning Type Measure (LTM).

3. Determine perceived school climate of Louisiana public secondary school teachers as measured by the Organizational Health Inventory (OHI).

4. Determine if differences exist in perceived school climate by teacher dominant learning type of public secondary school teachers in Louisiana.

5. Determine if teacher dominant learning type and teaching area are independently distributed among public secondary school teachers in Louisiana.

6. Determine if differences exist in perceived school climate by teaching area of public secondary school teachers in Louisiana.

7. Determine if a relationship exists between Louisiana public secondary school teachers' perception of school climate and certain characteristics including teacher age, teacher gender, principal gender, teacher ethnicity, and years teaching experience.

8. Determine if differences exist in perceived school climate of public secondary school teachers in Louisiana by school size.

9. Determine if differences exist in perceived school climate of public secondary school teachers in Louisiana by type of schedule and number of years on current schedule.

Significance of the Study

Schools must be made effective if students are to compete in the 21st century. This study will give baseline data on differences in learning types and perception of school climate.
climate between academic and career and technical (C&T) teachers. To improve education, teachers do not need another program, “they need a framework within which they can organize what they already know about good teaching and integrate new possibilities with the known” (Callahan, 1999, p. 23). “Unless we target the thinking and practice of teachers, and offer them sustained assistance, all the new state testing, school-based management policies, reorganizations, and parent centers will prove ineffectual in substantially improving public education” (Scheidler, 1994, p. 45). This study will provide data that could be used in preparing in-service activities as well as teacher education programs that promote an understanding of learning types and school climate and the effect these variables have on the educational system.

Definition of Terms

For purposes of this study, the following terms were defined.

School Climate - Howard, Howell, & Brainard (1987) define a school’s climate as “. . .its atmosphere for learning. It includes the feelings people have about school and whether it is a place where learning can occur” (p. 5). According to Hoy & Miskel (1996) and Tagiuri (1968), “school climate is the relatively stable property of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools” (Hoy & Hannum, 1996, p. 291). "Organizational climate is the collective personality of a school or school system" (Webb & Norton, 1999, p. 105).

Learning Types - Cognitive learning types have been defined by Messick (1970) as “. . .information processing habits representing the learner’s typical mode of perceiving, thinking, problem solving and remembering” (p. 188). "Learning style consists of
distinctive behaviors which serve as indicators of how a person learns from and adapts to his environment. It also gives clues as to how a person's mind works" (Gregorc, 1979, p. 234). According to Kolb, learning type is a student’s fairly consistent response to the use of stimuli in the context of learning (Hayden & Brown, 1985). McCarthy (1996) states that learning types are how we perceive and process information. Learning types are defined as “. . .the dominant methods of learning favored or characteristically more effective for each learner” (American Association of School Administrators, 1991, p. 12). Also, learning types are defined as “. . .the conditions under which you as an individual learn best. . . .,” and “. . .the way we perceive the world, how we think, make decisions and form values” (American Association of School Administrators, 1991, p. 12). For the basis of this study, I used McCarthy's (1996) learning types which describe how we perceive and process information.

Academic Subjects - For this study, academic subjects are English, mathematics, science, social studies, foreign language and fine arts courses. These courses were included in the academic category since they are part of the requirements for Louisiana's Tuition Opportunity Program for Students (TOPS).

Academic Teacher - An academic teacher spends a minimum of 50 percent of the school day teaching academic courses.

Career and Technical (C&T) Subjects - C&T subjects include Agriscience, Business Education, Family and Consumer Science, Health Occupations, Marketing, Trade and Industrial, and Technology Education.

Career and Technical (C&T) Teacher - A C&T teacher spends a minimum of 50 percent of the school day teaching C&T courses.
Traditional Six/Seven Period Schedule - Students are enrolled in six or seven classes each day. Class periods range from 40 to 60 minutes each (Canady & Rettig, 1995).

A-B/Flex Schedule - Students are enrolled in seven classes, six that meet every other day and one daily class. Alternate day class periods are usually 90 minutes long and may be fixed (A-B) or on a rotating basis (flex) (Canady & Rettig, 1995).

Four-by-Four Schedule - Students are enrolled in four classes each semester of the school year. A course is completed in one semester rather than one year. Daily classes are twice as long as year long courses (Canady & Rettig, 1995)
CHAPTER TWO: REVIEW OF RELATED LITERATURE

Introduction

This study was designed to determine the relationship between learning type and perception of school climate. An overwhelming amount of material was available in the literature on learning type and school climate, especially in regard to school improvement and effectiveness.

According to Renihan and Renihan (1995), eight correlates have consistently emerged from early school effectiveness literature. These include: “assertive leadership; conscious attention to climate; academic focus; high expectations for student achievement; collaborative decision-making; sense of mission; positive motivational strategies; and, frequent and direct feedback on academic performance” (p. 4). These concepts have been the focus of much research during current and past educational reform movements. One focus on academics has dealt with learning types and the effects of various teaching strategies on student achievement. Differences in teaching practices and classroom climate have been considered in school effectiveness research. (Fuller & Clarke, 1994). This review of related literature will focus on two aspects of school effectiveness reform: school climate and learning types.

School Climate

Much focus of school reform has been on ways to improve school climate. Studies have focused on the relationship between school climate and school effectiveness, student achievement, and teacher efficacy. Factors that impact school climate need to be identified since schools with healthy climates tend to impact student achievement in a positive manner. "Healthy school climates are characterized by many of the same attributes stressed
in the effective schools literature: an orderly and serious environment, visible rewards for academic achievement, influential principals who blend their behavior to fit the situation, openness in behavior, and a cohesive work unit based upon mutual trust" (Hoy, Tarter, & Kottkamp, 2000, p. 71). According to Webb and Norton (1999), numerous studies have centered on "... (1) the characteristics that are found in schools with positive climates, (2) the impact of school climate on student achievement (3) the impact of school climate on the behavior of personnel, and (4) the impact of school climate on school program innovation and change" (p. 112).

Sweeney (1988) stated that, “a winning school climate provides the very foundation for a sound educational program” (p. 1). Effective schools have a winning climate. John Goodlad, in a speech given in Denver stated that “...the way to improve education is through a healthy environment at each school” (Howard, Howell, & Brainard, 1987, p. 3). "Healthy schools effectively meet the instrumental needs of adaptation and goal achievement as well as the expressive needs of social and normative integration; that is, they must mobilize their resources to achieve their goals as well as infuse common values into the work group” (Hoy, et al., 2000, p. 56).

“...It is generally agreed that schools with a good or positive climate have students that are enthusiastic with high expectations for achievement; dedicated cooperative teachers; and relationships characterized by feelings of mutual respect, support and trust. Conversely, schools with a poor or negative climate students have low expectations, low self esteem, and a sense of alienation; teachers are isolated and hostile to each other and to students; and the school is perceived as a cold and uncaring place” (Smey-Richman, 1991, p. 1).

School reform must realize that "...creating a safe climate that promotes learning is a joint responsibility of the community, schools, educators, parents and students" (Kober & Rentner, 2000, p. 23). Dusseau (1997) found that teacher and community perceptions of
school climate were positive but, community members tended to have a more favorable
view of climate than teachers.

School climate has been defined in many ways. Howard, et al. (1987) defined it as
the “atmosphere of learning” (p. 5). “It includes the feelings people have about school and
whether it is a place where learning can occur. A positive climate makes a school a place
where both staff and students want to spend a substantial portion of their time; it is a good
place to be” (Howard, et al., 1987, p. 5). Another school climate project from the
Windward Oahu District in Hawaii defined climate as “. . .everything we do in the name of
define organizational climate as " . . .the collective personality of a school or school system.
It is the school atmosphere as characterized by the social and professional interactions
within it" (p. 105). Another researcher stated that "more specifically, climate is a relatively
enduring quality of the school environment that (a) is experienced by teachers, (b)
influences their behavior, and (c) is based on their collective perceptions" (Hoy & Forsyth,
1986, p. 147). School climate “ . . .embraces the notion that a wholesome learning
environment affects the degree and quality of achievement and total personal growth of our
students” (Northwest Regional Educational Lab, 1985, p. 2). Kelly (1980) stated that “the
climate of a social environment is formed by the norms, beliefs, and attitudes reflected in
the conditions, events, and practices of a particular environment . . . Climate conditions, as
perceived by persons who work within or know a particular environment, serve as the basis
for establishing expectations and interpreting events or activities which occur within that
environment” (p. 2). Establishing expectations of a safe and orderly environment leads to
improved perception of climate. "Evidence strongly suggests that a safe, pleasant and
inviting context helps students and teachers to function more effectively” (Caine & Caine, 2000, p. 10). “No matter how strongly people feel about expressing their own identity, they will always be influenced by the culture and social patterns within which they find themselves” (Caine & Caine, 2000, p. 9). People flourish in effective and powerful learning communities.

Many studies have considered variables that affect the climate of schools. Howard, et al. (1987) listed eight factors that contribute to a school’s climate: continuous academic and social growth, respect, trust, high morale, cohesiveness, opportunities for input, school renewal, and caring (p. 7). Smey-Richman (1991) found two main classes of variables that help restructure climate for low-achieving students. These are “culture variables: clear goals and core values, high expectations for academic success, and an orderly, disciplined environment” (p. 8); and “. . .social system variables: school-student relationships, professional staff relationships, and parent-school relationships” (Smey-Richman, 1991, p. 26). According to Taguiri (1968), "while cultural variables refer to the common set of values, beliefs, and practices which act as social control mechanisms mediating the behavior of school members, the school’s social system variables deal with the patterns of work relationships within a school community” (Smey-Richman, 1991, p. 24). Pallas (1988) listed five main areas affecting school climate: principal leadership, teacher control, teacher morale, staff cooperation, and student behavior. Sweeney (1988) found ten factors that constitute a positive school climate. These included: a supportive, stimulating environment, student-centered, positive expectations, feedback, rewards, a sense of family, closeness to parents and community, communication, achievement and trust. The pilot study for the Organizational Health Inventory instrument identified "...seven dimensions
of organizational health: institutional integrity, principal influence, consideration, initiating structure, resource support, morale, and academic emphasis” (Hoy, et al., 2000, p. 62). Fox, et al. (1974) suggested that to gain a sense of the climate, "you look for at least eight factors, which comprise the school's climate and determine its quality. They result from an interaction of the schools programs, processes, and physical conditions" (p. 7). These factors include respect, trust, high morale, opportunities for input, continuous academic and social growth, cohesiveness and caring (Fox, et al., 1974)

Classroom and school climate has been of interest to educational researchers for many years. Chavez (1984), in reviewing early literature, found that the first people interested in classroom behavior were social psychologists. One of the first such studies focused on student/student and student/teacher interactions and was conducted by Dorothy Thomas in 1929. It consisted largely of descriptive accounts of what went on in classrooms (Chavez, 1984). Studies conducted by Anderson and Brewer in 1945 and 1946 investigated the influence teachers’ personality had on student behavior (Chavez, 1984). These studies developed methods to observe and categorize both teacher and student behaviors. Studies by Cornell, Lindvall, and Saupe; Medley and Mitzel; and Withall during the late fifties and early sixties made use of classification of nonverbal behaviors and measures of classroom social structure (Chavez, 1984). These research efforts led to the construction of an “Observation Schedule and Record” instrument termed “OscAR” (Chavez 1984, p. 242). The OscAR consisted of three scales, “. . .emotional climate, verbal emphasis and social organization. . . .” (Chavez 1984, p. 243). Morrison found that “. . .emotional climate was an important factor of teacher competence and the rapport between teacher and pupil” (Chavez, 1984, p. 243). These early studies consisted of low-
inference measures that have been cumbersome or lack methodological framework (Chavez, 1984). Use of high-inference measures is recommended by Chavez (1984) to avoid problems associated with effective school research. During the 1960's and 70's, several high-inference environmental indexes were developed including: Halpin and Croft’s (1963) Organizational Climate Description Questionnaire (OCDQ), the High School Characteristics Index (HSCI) (Stern, 1964), the Organizational Climate Index (Stern, 1970), and Steele, House, and Kerins (1971) Classroom Activities Questionnaire. Since that time, many high-inference measures have been developed including the Organizational Health Inventory (OHI) (Hoy & Feldman, 1986); revised versions of Halpin and Croft's OCDQ by Hoy and Clover (1986) for elementary schools, by Kottkamp, Mulhern, and Hoy (1987) for secondary schools, and by Hoy and Tarter (1997) for middle schools; the Comprehensive Assessment of School Environments (National Association of Secondary School Principals, 1987), and School Discipline Climate Survey: Toward a Safe, Orderly Learning Environment (Grossnickle, 1993).

School reform and improvement initiatives have focused on developing an effective school. “The effective school is one in which mastery of the course material is the cultural norm, students place a high priority on learning, and there is plenty of classroom time to learn” (Zigarelli, 1996, p. 107). "School climate is a key factor in the difference between effective and ineffective schools" (Webb & Horton, 1999, p. 112). "The state of organizational health should be the prime target of change efforts in schools because only when the systems' dynamics are open and healthy will more specific change strategies be effective" (Hoy, et al., 2000, p. 73) Farrar and Flakus-Mosqueda (1986) as cited by Webb and Horton (1999) found that successful school improvement programs had a common
element: the development of a positive school climate that allows the identification and resolution of problems. "Change is a property of healthy school organizations" (Hoy & Miskel, 1996, p. 164). In striving for effective schools, some type of “restructuring” must take place. Examples of restructuring include: time, teacher-pupil interactions, management styles, teaching methods, and curriculum. School climate is a major focus in school improvement because it is thought to be related to achievement, and it is manipulable (Pallas, 1988). Much climate research tries to find correlations between achievement and some attribute of schools. Many research findings relate certain aspects of schooling with positive or negative climate.

The leadership of the principal is one factor that is considered to affect climate. “Schools that become effective have a leader who envisions what the school and its students can become and that person works at finding ways to fulfill the vision” (Stringfield and Teddlie, 1988 p. 46). “The development of a positive school climate is directly related to leadership provided by the school principal” (Northwest Regional Educational Lab, 1985, p. 2). Kenworthy (1993), however, found little differences in visionary leadership qualities of principals from schools scored as having low, average, or high level climates. Therefore, is the principal the key, or do teachers have a greater effect on the school’s climate? The principal has a role in aiding teachers by developing a supportive environment where they may try a variety of ideas, without fear of failure and reproof. Hoy, Tarter, and Witkoskie (1992) studied the effects of a culture of trust on school effectiveness. The study measured supportive leadership and faculty collegiality utilizing the Organizational Climate Description Questionnaire-RE and faculty trust in both the principal and colleagues using a scale developed by Hoy and Kupersmith (1985) (Hoy, et
al., 1992). Only faculty trust in colleagues was shown to promote effectiveness directly. “It is an atmosphere of openness and professionalism that leads to trust and cooperation among colleagues, which ultimately promotes effective schooling” (Hoy, et al., 1992, p. 44). “The principal sets the climate that encourages or stifles teachers’ attempts to enter the circle of leadership” (Blegen & Kennedy, 2000, p. 4). The principals’ decisions regarding personnel have a larger effect on student achievement that the policy decisions he or she makes. (Zigarelli, 1996). Through their behaviors, such as goal setting, accountability of teachers, and communication, effective administrators “communicate a certainty that student outcomes are linked strongly to teacher effort” (Rosenholtz, 1985, p. 361). "Healthy school climates also have more open climates; teacher interactions with each other and the principal are open and authentic" (Hoy, et al., 2000, p. 70). Taylor and Tashakkori (1994) found that school leadership, faculty collegiality and student discipline were major factors affecting school climate.

Climate changes have a major effect on teachers and students in schools. Wang, Haertel, and Walberg (1994) found that, "different kinds of classroom instruction and climate had nearly as much impact on learning as the student aptitude categories" (p. 75). In today's society, “. . . unless we target the thinking and practices of teachers, and offer them sustained assistance, all the new state testing, school-based management policies, reorganization, and parent centers will prove ineffectual in substantially improving public education” (Scheidler, 1994, p. 45). According to Rowan, et al., Raudenbush, and Kang (1991), the “composition of the teaching force within a school could affect the ability of reformers to change the organizational structure of schools” (Rowen, et al., 1991, p. 262). Teachers can promote and support a positive climate, or sabotage efforts to improve a
poor, existing one. True reform occurs when teachers “collaborate to raise the achievement levels of all students” (Scheidler, 1994, p. 48). To develop a positive climate, teachers must be included in decisions that affect their school. According to Glickman, “to be educationally successful, it must be a community of professionals working together toward a vision of teaching and learning that transcends individual classrooms, grade levels, and departments” (Glickman, 1992, p. 24). In effective schools, there is tighter coupling between values and behaviors of principals and teachers, as well as tighter coupling between managerial activities and technical activities. (Rosenholtz, 1985).

One study found that teacher collegiality and morale had a larger impact than other teacher factors: quality, empowerment, classroom policy and course content. (Zigarelli, 1996). Sizer says “the secret to a good school setting is what Barth terms collegiality” (Barth, 1990, p. xi). Judith Warren Little stated that collegiality is composed of four specific behaviors which faculty members do: talk about practice, observe each other, working on curriculum and teaching each other. (Barth, 1990).

School climate is shown to affect teacher commitment. Teachers with supportive administrators, a collegial faculty and an orderly environment report higher commitment (Reihl & Sipple, 1996). Teacher commitment was found to be greater in schools with high levels of positive climate. (Reihl & Sipple, 1996). They also found that school climate variables were strongly associated with professional commitment. Another research study found that school climate related closely to job satisfaction of teachers (Taylor & Tashakkori, 1994).

Rowan, et al., Raudenbush, and Kang (1991) found that teachers in different academic departments viewed organizational properties differently. “The result clearly
indicates that high schools are characterized by microclimates” (Rowan, et al., 1991, p. 262). These microclimates may cause changes in climate to proceed unevenly throughout the school. According to Pallas (1988), school climate differences appear most frequently between teachers within a school, not between schools. Rosenholtz (1985) emphasized that although much attention has been directed to the effective school, little has been done to determine within-school variations. Rowan, et al. (1991) using data from 538 public and private secondary schools studied within-school and between-school variables affecting school climate. The size of school, percent minority students, teacher experience, race, sex, education level, and subject area were found to significantly contribute to differences in perception of climate by teachers. Results of this study indicate that there are differences among teaching disciplines in climate perceptions. “The set of teachers teaching mainly math, science, and English exhibited significantly more negative perceptions of climate than did other teachers (nonacademic and social studies teachers)” (Rowan, et al., 1991, p. 259).

Studies have tried to determine the relationship between gender, race and school climate. Rowan, et al. (1991) found that men consistently rated climates less favorably than woman. White teachers were also found to rate climates less favorably than other ethnicities. According to Brice (1998), no independent relationship between school climate, gender or race was found. Smith, Hall, and Woolcock-Henry (2000) found no gender differences in explanatory style. All teachers in the study had an optimistic explanatory style. This study determined the effect years of teaching experience had on the explanatory style of teachers. The study also determined that teachers with 11 - 20 years
of teaching experience had a more positive view of all events, including change (Smith, et al., 2000).

The arrangement of time in schools is another factor linked with school climate. Cawelti (1994) found that traditional scheduling options discouraged variety and depth of learning activities. Canady and Rettig (1995) suggest problems with traditional high school schedules including the failure to provide flexible time to meet individual learning needs. McCoy (1999) utilized schools on 4 x 4 block scheduling to study school climate. The study determined that “. . .principal leadership, ability, commitment, and focus. . . .” (McCoy & Taylor, 2000, p. 28) were more important in determining climate than the type of schedule. According to O'Neil (1995), "many educators in schools using block schedules say that overall school climate improves as students and teachers spend more concentrated time with one another" (p. 14). "A successful block program will provide for increased teacher and student morale, as well as, stimulation of innovations in teaching methods such as multiple learning styles, and an overall improved school climate" (Creamean & Norvath, 2000, p. 6). "Block scheduling can be a catalyst for classroom innovation. The longer class periods...allow teachers to accommodate students' different learning needs with appropriate teaching strategies" (O'Neil, 1995, p. 12). Rettig and Canady (2001) found that block scheduling can be "...a powerful tool in the campaign to improve school climate, to provide more time to learn for those who need it, and to aid in the implementation of research-based instructional strategies" (p. 85). In changing to block schedules, one problem administrators were addressing was the improvement of overall climate. "The overall climate at the targeted high school, prior to block scheduling reflected many of the problems associated with a traditional daily schedule...low attendance
and high number of student referrals and suspensions" (Creamean & Norvath, 2000, p. 15). Buckman, King, and Ryan (1995) show dramatic improvements in grades with reductions in suspensions and referrals as climate benefits of block scheduling. Shore (1997) described a study conducted to improve climate in a high school by implementation of block scheduling. "Longer blocks of time with the same students promoted a more personalized environment" (Shore, 1997, p. 16). The changes associated with the block schedule improved campus climate.

"The strongest correlates of high school climate are environmental features of the school largely beyond the school’s control” (Pallas, 1988, p. 541). Rowan, et al., Raudenbush, and Kang (1991) found that smaller public schools and Catholic schools face organizational change better than other schools. One unexpected finding was that student composition had very little effect on school-to-school differences in organizational features. Rowan, et al., 1991). Pallas also found that Catholic high school teachers rank climate higher at their schools that their public school counterparts, but “school climate is strongly related to the environmental conditions of the school, especially student body composition” (Pallas, 1988 p. 553). Zigarelli (1996) found that teacher empowerment, continuing education, and principal management responsibilities had no effect on student achievement. “Student achievement seems to be much more a function of student and family variables than of schooling variables” (Zigarelli, 1996, p. 108). The Zigarelli (1996) study showed that school effects exist, but effects that schools can’t control have a greater effect on student achievement. Rumberger (1995) in studying dropout rates of students found that, "schools have no control over student characteristics, demographic or social, but they can change climate factors that have an effect on dropouts" (p. 618).
Although school reform is taking place throughout school districts, there are certain areas where more reforms are being implemented. Much research on school climate reform is based on elementary schools (Chavez, 1984; Haynes, Comer, & Hamilton-Lee, 1989; Hoy, et al., 1992; Springfield & Teddlie, 1988). Recently, more studies at the middle school and high school levels have been viewing climate as it affects achievement in older students. (Eccles, Lord, & Midgley, 1991; Johnson, Johnson, & Zimmerman, 1996; Pallas, 1988; Rowan, et al., 1991). According to Eccles, et al. (1991), climate changes in the transition from elementary to junior high school contributes to increased misbehavior and lower motivation of junior high students. One way to improve behavior and achievement in junior high is to focus on improving the schools' climate, as well as, the student's transition from elementary school. Results of these studies have suggested that certain dimensions of school climate would be a useful focus of school reform and intervention programs. (Johnson, et al., 1996). Bernstein (1992) found that school reform movements appear to occur more often in large urban schools with predominately disadvantaged minority students, which is also where the most problems concerning climate are found. This supports the notion that schools with the problems have been trying to correct them (Bernstein, 1992).

Learning Types

Over the past few decades, educational reform has also focused on individual differences of students. Teacher assessment and evaluation programs emphasize individual differences. One way to address individual differences is through developing curriculum and lessons to address a variety of learning types. “The concept of cognitive learning types has been the focus of considerable attention among educational practitioners and
researchers in many schools, colleges, and universities; particularly those involved with educational reform, school restructuring, and innovative practices such as outcome-based education” (O’Brien, 1994, p. 11). Cognitive styles, "...constitute important dimensions of individual differences among students and appear to have important implications for instructional design" (Chinien & Boutin, 1993, p. 303). "Learning is the process through which we become the human beings we are, the process by which we internalize the external world and through which we construct our experiences of that world" (Jarvis, Holford, & Griffin, 1998, p. vii).

The fact that students learn differently has always been known by teachers, but was often ignored until recent years. "In education, if we understand the styles of individual students, we can often anticipate their perceptions and subsequent behaviors, anticipate their misunderstandings, take advantage of their strengths, and avoid (or correct) their weaknesses" (Schmeck, 1988, p. ix). Severiens and TenDam (1994) found that teaching and learning should be coordinated, as well as challenging in relation to learning types of students. “Effective educational decisions and practices must emanate from an understanding of the ways that individuals learn” (Guild, 1994, p. 6). Teachers must vary teaching and assessment methods to reach all the different learning styles of students (Sternberg, 1994). Taylor (1997) realizes that is important to use a variety of teaching styles in the classroom. According to Schmeck (1988), "teachers cannot, of course, reconstruct students' personalities, but they can try to build on personal strengths and avoid inadvertently preying upon personal weaknesses" (p. xiii). According to Wilson (1998), Dunn (1993) feels that "...if individuals have significantly different learning styles--as they appear to have--is it not unprofessional, irresponsible, and immoral to teach all students the
same lesson in the same way without identifying their unique strengths and then providing responsive instruction?" (p. 30). High schools must incorporate ideas derived from brain research to provide opportunities for success by students who have different learning types and brain functioning (Cunningham, 1997). No two children's brains function in the exact same way. "Therefore, it is crucial that teachers identify and match students' unique learning styles with classroom delivery of subject matter while simultaneously teaching in accord with mandated standards" (Doolan & Honigsfeld, 2000, p. 276). "Constructivist pedagogy... implies that instructors need to develop connections between brain functions and to teach in accordance with the way the brain operates" (Brown, 1998, p. 2).

Early interest in learning types was rooted in behaviorism (American Association of School Administrators, 1991). Carl Jung, in 1921, described four types of people based on the way they “take in” information: feelers, thinkers, sensors and intuitors (American Association of School Administrators, 1991). Dunn and Dunn developed one of the first multidimensional learning type models during the late 1960's (Tendy & Geiser, 1997). This model deals with environmental, emotional, sociological, physiological and psychological elements of learning (Tendy & Geiser, 1997). Benjamin Bloom developed a theory in the 1970's discussing “student factors that account for the differences in student learning (American Association of School Administrators, 1991, p. 9). During this same time period, David Kolb and Anthony Gregorc were also working on theories of learning.

Gregorc identified several ways that people approach learning: concrete sequential, abstract sequential, abstract random and concrete random (American Association of School Administrators, 1991). Gregorc (as cited in Taylor, 1997) presents the following descriptions of the four learning styles. Concrete sequential (CS) learners prefer hands-on
experiences. People with CS preferences need to employ the senses in learning. Abstract Random (AR) learners use intuition and moods in learning. Abstract random learners dislike structure and are the socialites. Abstract sequential (AS) learners have excellent written and verbal abilities. Presentations that are rational and sequential are preferred by AS learners. Concrete random (CR) learners utilize the trial and error in learning. People who are CR learners are very competitive and prefer to be in charge of the situation. Kolb (1984) distinguishes four types of learners based on the perception and process of information: diverger, assimilator, converger and accommodator.

Since the late 1970's, McCarthy has utilized an approach to learning type that draws on the work of Kolb, Jung and others. Individuals have a preferred 'quadrant' based on the preferred way of receiving and processing information. Quadrant 1 learners are 'imaginative'. These learners prefer group activities and need to answer the question 'why'. Quadrant 2 learners are 'analytic'. Facts and figures are what type 2 learners thrive on as they seek answers to the question 'what'. Type 3 learners are the 'common sense learners'. 'Common sense learners' prefer hands-on activities as they discover 'how' things work. Quadrant 4 learners are 'dynamic'. Type 4 learners focus on the future and answer the question 'if'.

Gardner (as cited in Armstrong, 1994) states that the essence of his multiple intelligences theory is "to respect the many differences among people, the multiple variations in the ways that they learn, the several modes by which they can be assessed, and the almost infinite number of ways in which they can leave a mark on the world" (Armstrong, 1994, p. vii). Vail (1992) noted that each person has more than one way of
learning; most have predominant, preferred channels and secondary, subordinate approaches.

Much learning type research and practice is based on David Kolb’s (1984) theory of experiential learning and learning types. Kolb’s theory describes the learning process as a four stage cycle an individual undertakes in perceiving and processing information. “Learners manifest preferences for the patterns by which they acquire and integrate information as they pass through this cycle” (Matthews & Hamby, 1995, p. 257). “Learning and teaching types are part of our personal make-up. They summarize the needs, emotions, motives, beliefs, and attitudes we possess about how to learn and how to teach” (Grasha & Yangarber-Hicks, 2000, p. 3). Miller (2001) suggests that in efforts to "...understand the way the mind works, we should approach it from all angles - information processing, personality, and perceptions - the multimedia of the mind" (p. 1).

In *Learning Styles: Putting Research and Common Sense into Practice* (American Association of School Administrators, 1991), learning types are related to the way students acquire knowledge in the classroom and beyond. Kalsbeek (as cited in Cooper, 1991) stated that "learning styles can be understood as a person's preferred approach to information processing, idea formation, and decision making; the attitude and interests that influence what is attended to in a learning situation and a disposition to seek learning environments compatible with these personal profiles or types" (Cooper, 1991, p. 699).

Many studies on learning types have used Kolb’s Learning Style Inventory. According to Matthews and Hamby (1995), original studies were done by Pigg, Busch, and Lacey (1980); Garvey, Bootman, McGhan, and Meredith (1984); Magolda (1989); and Choi (1989) that focused on university students and adults. The majority of these studies
focused on the relationship between learning types and demographic factors, learning types and achievement, and differences between genders with regard to learning types. A few studies by Tucker (1983); McCarthy (1987); Titus, Bergandi, and Shryock (1990); and Trayer (1991) have looked at differences in learning types of secondary students (Matthews & Hamby, 1995). Matthews and Hamby (1995) found that high school students and college students differ on learning type preferences. Matthews and Hamby (1995), in a study of 6,009 high school students and 1,875 university students, found significant differences between males and females and Caucasian and African American students on learning type preferences. Titus, et al. (1990) found that “...age, gender and aptitude all are involved in the maturation of learning type among high school students” (p. 169). Tamaoke (1985, 1987) found significant differences between genders and cultural groups on learning preferences utilizing Canfield's Learning Styles Inventory. Nuby and Oxford (1996) found that African American secondary students preferred sensing and judging dimensions while Native American secondary students preferred intuition and perception. Females in general had strong preferences for the feeling dimension.

"Teachers must note the learning style differences between cultural groups but must also pay attention to the styles of individual learners" (Nuby & Oxford, 1996, p. 94).

Soliday & Sanders (1993) found significant differences in personality types/learning styles of vocational and nonvocational secondary students. This study utilized the Myers-Briggs Type Indicator (MBTI). Findings indicate that vocational/technical secondary students had dominant personality types/learning styles of ESTP and ISTP and "...operated in the cognitive and affective processes which were knowledge and skill areas" (Soliday & Sanders, 1993, p. 83). Nonvocational/technical secondary students had
dominant personality types/learning styles of ENFP and ESFJ and utilized "...critical and logical thinking and problem solving skills along with socialization" (Soliday & Sanders, 1993, p. 83). These findings suggest that different "...teaching techniques, curricular objectives, learning environments, and evaluation procedures should be implemented to accommodate for dissimilar personality types/learning styles of vocational technical secondary and nonvocational technical secondary students" (Soliday & Sanders, 1993, p. 69). According to King (1999), science/math teachers utilize visual and auditory numeric learning style while language/humanities teachers utilize visual and auditory language, as well as, auditory/visual/kinesthetic learning styles in designing lessons. Snyder (2000) found that the majority of secondary school students were tactile/kinesthetic learners - learn best by "doing" not just listening and watching. Most were global learners, preferring to see the whole picture and relationships when learning. Snyder (2000) also found gender differences in academics and learning preferences. "The female students were stronger on intrapersonal, linguistic, musical, prefers working alone, visual, interpersonal, self-motivated, prefers quiet, GPA, analytical and persistence. . . the male students were stronger on bodily kinesthetic, logical, spatial, and working with others" (Snyder, 2000, p. 18).

O’Brien (1994) expressed a need for teachers to examine curriculum and instruction to determine if one type is favored in the development of instructional strategies. “Teachers teach not as they were taught but as they learned, often feeling that there is only one right way to learn and hence only one right way to teach. Modification of teaching style is difficult but can be achieved if the teacher understands why one style cannot effectively reach all students” (Wilson, 1998, p. 7). "A teacher cannot stimulate a child to
learn without knowing that child's mind any more than a physician can guide an ill patent to health without knowing that patient's physical condition" (Sizer, 1992, p. 40). Teachers must correlate teaching methods to students' learning types (Whittington & Raven, 1995). Ladd (1995) found that ". . .learners use one dominant learning style to accomplish their learning tasks. This is not to say, however, that learners cannot learn through other styles. What it does indicate is given the choice of learning style, learners will consistently choose their preferred style" (p. 31). Rettig & Canady (2001) note that ". . .teachers must discern their students' learning styles and then design instruction accordingly" (p. 85).

According to Gregorc (as cited in Taylor, 1997) "the most successful students in a classroom happen to possess learning preferences that match the instructional method preferences of the teacher" (Taylor, 1997, p. 3) Lindsay (1999) found that a match between learning and teaching styles results in increased student achievement and satisfaction. "Whatever the particular learning style of a person, identifying and understanding this style can lead to successful or improved learning" (Brownfield, 1993, p. 5). Students who have an understanding of learning styles, "adjust their learning style to accommodate the teacher's style and the task at hand. . . if teachers believe that they should adapt their teaching style to the content, situation and needs of the learners,. . .they will vary their teaching style to enhance the teaching/learning process" (Ladd, 1995, p. 31). Anderson (1995) suggests ". . .if we motivate and teach students to become effective learners, then they will be able to adapt to a variety of instructional styles and learning environments" (p. 72). Cooper and Miller (1991) found a significant relationship between learning style and teaching style with student course and instructor evaluations, but not with final course grades.
McCarthy (1996) used the major elements of perceiving and processes in developing the 4-MAT system of learning. Learning is the result of perceiving and processing information. Individual learners have a “comfort zone” in one quadrant of the cycle. Learning must continue spiraling around the cycle, moving to higher levels of experiencing and knowing. In education, teaching and learning types should coordinate and challenge simultaneously (Severiens & TenDam, 1994). “Experience plays a key role in learning and individuals differ in the ways they approach various tasks and use experience” (Severiens & TenDam, 1994, p. 490).

Severiens and TenDam (1994) found in a meta-analysis that most research in gender differences and learning types were descriptive, not providing explanations, or not paying attention to teaching methods or learning tasks. Kolb (1984) found that women preferred concrete learning styles, while men preferred abstract methods of learning. A meta-analysis of research findings on gender and learning types revealed that women have slightly lower "abstract conceptualization" scores (Severiens & TenDam, 1994). That study also found that "...older women tended to be less abstract than older men, while younger women in the college environment were more abstract than younger men" (Severiens & TenDam, 1994, p. 485). Nuby and Oxford (1996) found significant differences in learning type preferences between cultures and genders. Jalali (1989), used Dunn’s Learning Style Inventory and found significant differences among African-American, Mexican-American, Chinese-American and Greek-American children (Wilson, 1998). Dunn comments, in response to the Jalali study, that “...children of all cultural groups tend to be more motivated than their teacher might suspect; they merely cannot achieve when they are taught through strategies disparate with how they learn” (Dunn,
“Cultures do have distinctive learning style patterns, but the great variation among individuals within groups means that educators must use diverse teaching strategies with all students” (Guild, 1994, p. 16).

According to McCarthy (1996), the real meaning of learning type theory lies in the process required to move all learners through a cycle of learning encompassing all four types, while still honoring and developing the uniqueness of each type as we go. Individuals develop an approach to learning over time.

“Any instructional process that tries to shape how we learn or teach will either encourage and reinforce our preferred types, or create pressures for us to modify them... people possess a number of characteristics to different degrees. Types are not like boxes into which people are sorted. Rather, different learning types are like the colors on an artist’s palette. All of the colors are present within our personality, but some blend more readily, and some are more dominant than others” (Grasha & Yangarber-Hicks, 2000 p. 3-4).

In regard to learning types, "...there is no one right way to learn or to teach, but there are certain styles that are more appropriate for a given situation. Styles influence how students learn, how teachers teach, and how they interact" (Reiff, 1992, p. 7). O’Brien (1994) found a significant difference in academic achievement for students with a concrete sequential cognitive style, possibly due to the school environment. Further study was suggested to investigate reasons for the differences. Beglane (2001) found that "...implementation of a learning type model for teaching led to improved school climate. For this to occur, teachers were empowered with knowledge, skills, and resources needed to successfully implement learning styles instruction in their classrooms" (p. 82).

Learning type research has had an impact on school effectiveness. According to Nuby and Oxford (1996), “teachers need to find out about their own learning styles, determine the extent to which their teaching styles are influenced by their learning styles,
and find out how to adapt their teaching styles to the needs of individual students or groups” (p. 4). "The key to teaching students with different learning styles is the identification of your own learning style as well as your students styles” (Raven, 1992, p. 5). According to Reiff (1992), "...to better understand the individual differences of children, teachers first need to ‘understand their own learning styles’. Teachers seem to understand and even favor students whose styles are similar to their own” (p. 5).

"Realizing that not all students learn the same way, and that each, in fact, is rather unique in his/her styles of learning, provides a more 'aware' and positive atmosphere in which learning can take place" (Brownfield, 1993, p. 13). "When students are being taught with methods dissonant from their learning styles preferences, they do not succeed in mastering subject matter as quickly as they could. This mismatch often leads to frustration and a lack of continued educational development. Students come to dislike school, which can lead to behavioral problems and, possibly, dropping out of school" (Doolan & Honigsfeld, 2000, p. 276).

Teacher awareness of learning types has increased dramatically over the last decade. Studies have been conducted among secondary teachers and university professors. Handley (1998) found that "the average CLS university professors is either analytic (Type 2) or common-sense learner (Type 3)" (p. 81). Common-sense (Type 3) learners constituted 35% of the respondents (Handley, 1998). Whittington and Raven (1995), determined teaching/learning types of pre-service agriscience teachers. Findings indicate that pre-service agriscience teachers are field-independent. Female pre-service agriscience teachers are more likely to be field independent than the normal population (Whittington & Raven, 1995). Pankratius (1997) found that pre-service teachers have "...established, yet
poorly articulated teaching styles and ideas about learning styles. . ." (p. 75). Pre-service training should emphasize the process or recognizing differences in learning types of students and preparation to address all types of learners with instruction (Pankratius, 1997). Pre-service and staff development activities need to be presented in ways that encourage learning type identification and utilization. "It is just as important to match strategies for staff development with teachers' learning style strengths as it is to match teaching strategies with students' learning styles. Research consistently reveals that adults who learn in a program that accommodates their preferences will acquire more knowledge, become more motivated, and use what they learn in the classroom" (Burke, 1997, p. 301).

Learning types research has focused on student achievement. Dunn, Beaudry, and Klavas (1989) found that “a number of studies conducted during the last decade have found that students’ achievement increases when teaching methods match their learning styles - biological and developmental characteristics that affect how they learn” (p. 50). Cafferty (1980) found that the closer the match between student and teacher style, the higher the grade point average in courses. An analysis of studies conducted utilizing the Dunn and Dunn Learning Style Model consistently showed increased achievement when students learning style preferences match teaching methods (Dunn, Griggs, Olson, Gorman, & Beasley, 1995). "Therefore, it seems not only prudent but imperative to match instruction with students' learning style preferences" (Doolan & Honigsfeld, 2000, p. 276).

The diversity in high schools would lead one to think that a variety of learning types are present among teachers. “High school staff members do not all have the same learning needs or types” (Hirsh, 2000, p. 51). “Different disciplines call on different analytic styles, approaches to problem solving and findings, temperaments, and intelligences” (Gardner &
Boix-Mansilla, 1994, p. 18). Often, however, school's "accommodate the variety among students by offering different courses, but not by using strikingly different teaching styles" (Sizer, 1992, p. 35). This practice does not lead to a significant increase in student achievement.

This review of literature demonstrates the vast amount of material on learning types and school climate. The ultimate goal of all research it to improve the educational system, therefore, variables that affect education must be determined. Studies have shown a relationship between improved climate and a learning type approach to instruction. "Another indication of success in utilizing a learning styles approach is an improvement in classroom climate" (Hodgin & Wooliscroft, 1997, p. 45). Just as climate does not improve overnight, development of a learning type approach to instruction takes time to develop. "Creating a new classroom environment does not happen quickly. It takes three to five years for a teacher to develop a learning styles classroom" (Hodgin & Wooliscroft, 1997, p. 45). This study attempts to determine if a relationship exists between learning type and perception of school climate. Results of the study should be considered with previous research to develop a stronger educational system.
CHAPTER THREE: METHODOLOGY

Introduction

This chapter addresses the methodology of the study including population and sample, instrumentation, data collection and analysis. The purpose of the study was to investigate the relationship between teacher learning type; perception of school climate and selected variables/characteristics. The study focused on the following nine objectives.

1. Describe Louisiana public secondary school teachers on selected demographic variables using a researcher designed demographic survey. These characteristics include: years of teaching experience, teaching area, age, gender, race, and highest degree earned.

2. Determine the dominant learning type of Louisiana public secondary school teachers using the Learning Type Measure instrument.

3. Determine the perceived school climate of Louisiana public secondary school teachers using the Organizational Health Inventory-Secondary survey instrument.

4. Determine if differences exist in perceived school climate of public secondary school teachers in Louisiana by teacher dominant learning type.

5. Determine if teacher dominant learning type and teaching area are independently distributed among public secondary school teachers in Louisiana.

6. Determine if differences exist in perceived school climate of public secondary school teachers in Louisiana by teaching area.

7. Determine if a relationship exists between Louisiana public secondary school teachers perception of school climate and certain characteristics including teacher age, teacher gender, principal’s gender, teacher ethnicity, and years teaching experience.
8. Determine if differences exist in perceived school climate of public secondary school teachers in Louisiana by school size.

9. Determine if differences exist in the perceived school climate of public secondary school teachers in Louisiana by type of schedule and number of years on current schedule.

Population

The study’s target population was all Louisiana public secondary school teachers in schools which contain at least grades 10, 11 and 12; which offer career and technical (C&T) education courses in at least two C&T areas; and which are not classified as alternative schools. The accessible population for the study was Louisiana public secondary school teachers employed for the 2001-2002 school year in schools that contain at least grades 10, 11, and 12, offer C&T education courses in at least two C&T areas, and are not classified as alternative schools. Louisiana consists of 66 school districts, including one for each of the 64 parishes and two independent city school districts, Bogalusa and Monroe. The Louisiana School Directory (2001-2002) (Bulletin 1462) and the Annual School Report - Listing of Courses Taught by Teacher (1999-2000) published by the Louisiana Department of Education were used to establish the frame for the study. According to these sources, there were 302 public secondary schools in Louisiana meeting the established criteria. These 302 public secondary schools meeting the criteria contained 1,930 secondary C&T teachers. Itinerant teachers were excluded due to temporary status and service to more than one school.

Sample

A random sample was drawn from the accessible population. The sample size was determined using Cochran’s sample size determination formula (Snedecor & Cochran,
The sample size was based on the necessary number of career and technical (C&T) teachers to insure an adequate sample of C&T versus academic teachers. The sample size recommended by Cochran’s formula was 171. Based on an estimated response rate of 50 percent, the adjusted sample size was 342. School districts were randomly chosen to participate in the study until the required number of C&T teachers was reached. The entire C&T teacher population, up to a maximum of 40 per district, in the school districts chosen were surveyed. An equal number of academic teachers were randomly selected from each school district in the sample.

Instrumentation

A search through the literature found several instruments that could be used to assess school climate and learning types. DeBello (1989) reviewed eleven instruments that were available for measuring learning type. Some of the more frequently used instruments assessing learning type include Kolb’s Learning Style Inventory (LSI), Myers-Briggs Type Indicator (MBTI), Gregorc's Style Delineator, and McCarthy’s Learning Type Measure (LTM). The LTM was chosen by the researcher for use in this study because of its high validity and reliability and its ease of administration and scoring.

The LTM was developed by Bernice McCarthy as a more appropriate instrument to be used with the 4-MAT System for Teaching, Learning and Leadership. The LTM systematically identifies individual preferences for learning just as the LSI does. The LTM was developed by McCarthy based upon the work of Carl G. Jung, David A. Kolb, Kurt Lewin, Isabel B. Myers, and Joseph E. Bogen (McCarthy & St. Germain, 1999). The LTM identifies and interprets three dimensions of each learner. The learner type addresses how people perceive information and the order in which people attend to different aspects of
learning. The second dimension is the way people process new learning (McCarthy & St. Germain, 1999). “The hemisphericity dimension of the LTM reflects a personal preference for the left- or right-mode approaches to learning” (McCarthy & St. Germain, 1999, p. 8.10).

The LTM is a 26-item self-assessment inventory (see Appendix A). The inventory is designed to indicate preferences in three dimensions that determine individual learning type. Part A of the LTM reflects two dimensions, how people attend to and process new learning. Part A consists of 15 questions utilized to determine the participant’s quadrant of learning (McCarthy & St. Germain, 1999). Learning types are defined by McCarthy (1996) as: Type 1 - imaginative learners, Type 2 - analytical learners, Type 3 - common sense learners, or Type 4 - dynamic learners. Part B consists of 11 questions utilized to determine the participant's preference for "watching vs. doing" when processing learning. The third dimension of the survey is overlaid on the quadrants and addresses brain hemisphericity. Brain hemisphericity is divided into right and left modes. Statistical analyses were performed using the highest scored or “preferred” quadrant determined in Part A of the LTM.

Validity and reliability information has been gathered through use of the LTM. Over 97% of survey respondents had one distinguishable learning type preferred over the others (McCarthy & St. Germain, 1999). Seventy percent of respondents had five or more points difference in raw scores among quadrants. Concurrent validity was established by comparing the LTM with the Learning Style Inventory (LSI), and the Myers Briggs Type Indicator (MBTI). McCarthy and St. Germain (1999) show that “there is a 61.6% agreement between the LTM and LSI measures. The LSI and LTM are related measures
hence, a high correlation is expected. The LTM measures an additional dimension - brain hemisphericity which is not measured by the LSI. Due to this added dimension, a higher correlation between the LSI and LTM would not be expected. The chi-square test, Cramer’s V, and the Contingency Coefficient all show a significant relationship between the LSI and the LTM as well” (p. 8.16). The following significant relationships were reported between the LTM and MBTI: The learning type 1 score is most associated with the feeling score; learning type 2 score with the introvert, thinking and judging scores; learning type 3 score with the sensing score and learning type 4 score with the extrovert, intuitive and perceiving scores (McCarthy & St. Germain, 1999, p. 8.17). Reliability is shown through the internal consistency of item scales. The Cronbach Alpha values for the four sets of items in part A and the do versus watch items in part B are as follows:

Part A:  
Learning Type One  0.853  
Learning Type Two  0.835  
Learning Type Three  0.767  
Learning Type Four  0.885  

Part B:  
Do vs. Watch  0.863 (McCarthy & St. Germain, 1999, p. 8.15).  

“Analysis of the LTM yields a .71 test-retest coefficient” (McCarthy & St. Germain, 1999, p. 8.15). Since this is a self-report measure, some human error is expected.

Many climate surveys also exist. Witcher (1993) reviewed several climate surveys and found that the best indicator of school climate was found from instruments that generate information about multiple aspects of the school. Some of these aspects that are included on climate surveys, including ”. . .an emphasis on academics, an ambience of caring, a motivating curriculum professional collegiality, and a closeness to parents and
community..." (Witcher, 1993, p. 1). For this study, climate surveys explored include the School Assessment Survey, Climate Effectiveness Inventory, Effective School Battery, Organizational Climate Description Questionnaire (OCDQ-RS) and the Organizational Health Inventory (OHI-S). The OHI-S (see Appendix B) was chosen by the researcher for use in this study because of its ease of administration, validity and reliability, appropriateness for secondary schools and focus on organizational health.

The OHI-S was developed to “tap the technical, managerial, and institutional levels of the organization” (Hoy, et al., 2000, p. 59). The final version defined seven dimensions of school health: institutional integrity, principal influence, consideration, initiating structure, resource support, morale, and academic emphasis (Hoy, et al., 2000). The OHI-S was developed specifically for secondary schools. “The OHI is a 44-item questionnaire on which educators are asked to describe their behavior. The responses vary along a four-point scale defined by the categories ‘rarely occurs,’ ‘sometimes occurs,’ ‘often occurs,’ and ‘very frequently occurs.’”(Hoy, et al., 2000, p. 156). The school’s organizational health climate is determined by adding scores for all 44 items with nine items being reverse scored. The higher the score, the better the organizational health climate of the school.

Field testing of the OHI-S has resulted in reliability scores for each subtest. “The alpha coefficients were as follows: institutional integrity (.91), principal influence (.87), consideration (.90), initiating structure (.89), resource support (.95), and academic emphasis (.93)” (Hoy, et al., 2000, p. 64). Factor analysis supported the construct validity of the seven dimensions of school health (Hoy, et al., 1999).
A researcher developed demographic survey was also included. Variables studied previously included gender, age, ethnic group, years of teaching experience, teaching area, and highest degree earned. School size, type of schedule and principal’s gender were included in this study to compare results with studies done previously on school climate.

**Data Collection**

Data was collected using the researcher-designed demographic survey, McCarthy’s Learning Type Measure (LTM) and the Organizational Health Inventory (OHI-S). To collect data, a letter was sent to the superintendent of each school district in the sample requesting agreement to participate in the study and to secure a list of teachers (see Appendix D). A stamped, self-addressed return envelope was enclosed. A follow up letter (see Appendix E) was sent approximately one week after the initial mailing. Twelve parishes with three replacements were randomly selected to participate in the study. The three replacements were utilized since two superintendents refused permission due to prior research being conducted in the parish during the 2001-2002 school year. The three parishes were needed to equal the number of teachers in the two parishes who refused to participate. Upon receipt of the teacher lists, 690 teachers (345 C&T and 345 Non-C&T) were sent a cover letter (see Appendix F) and questionnaires, coded for follow-up purposes only, along with a stamped, self-addressed return envelope. Two letters were returned due to teacher transfers. The adjusted frame size was 688 teachers. The response rate for the first mailing was 174 teachers or 25.3%. Approximately two weeks later a follow-up letter (see Appendix G) was sent to all non-respondents. An additional 96 responses were secured bringing the total to 270 teachers or 39.2%. Two weeks later a telephone follow-up was conducted using a random sample of non-respondents. Fifty teachers were called
and encouraged to return the instruments. Additional instruments were faxed to those teachers who requested an additional survey. Twenty-three additional responses were returned. A comparison of these responses with previous responses showed no difference on demographics, learning type or school climate, therefore, these responses were combined with the initial responses to bring the total number of responses to 293 (42.6%).

Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to perform statistical analyses for this study. The alpha level for all statistical analyses was set a priori at .05. The following analyses were performed based upon the requirements of each objective.

1. To describe Louisiana public secondary school teachers on selected demographic variables, teachers were asked to complete a demographic survey (see Appendix D). The following descriptive statistical analysis procedures were applied to the resulting data: interval variables include age and years of teaching experience - calculated range, mean and standard deviation; nominal variables include gender, ethnic group, teaching area, and highest degree earned - calculated frequencies and percentages.

2. To determine the dominant learning type of public secondary school teachers through use of the Learning Type Measure, frequencies and percentages were established for the dominant type preference.

3. To determine the perceived school climate of public secondary school teachers through use of the Organizational Health Inventory, the range, mean and standard deviation were calculated.
4. To determine if differences exist in perceived school climate (as measured by the OHI survey instrument) by teacher dominant learning type, a one-way analysis of variance will be calculated to determine if there are significant differences in the mean school climate score among the four learning types of Louisiana public secondary school teachers. Tukey's post hoc test was performed.

5. To determine if the variables teacher dominant learning type and teaching area were independently distributed among public secondary school teachers in Louisiana, a Chi-Square was calculated.

6. To determine if differences exist in perceived school climate (as measured by the OHI survey instrument) by teaching area, a one-way analysis of variance was calculated to determine if there are significant differences in the mean school climate score among C&T and academic secondary public school teachers in Louisiana. Tukey's post hoc test was performed.

7. To determine if a relationship exists between perception of school climate and certain demographic characteristics including teacher age, teacher gender, principal’s gender, and years teaching experience; for age and years experience, a Pearson’s product moment correlational coefficient was calculated; for teacher gender, principal’s gender, and teacher ethnicity, a point biserial correlational coefficient was calculated. For interpretation of correlation coefficients, Davis’s set of descriptors was used (Davis, 1971). The coefficients and their descriptions are as follows:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 or higher</td>
<td>Very strong association</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial association</td>
</tr>
</tbody>
</table>
.30 to .49  Moderate association
.10 to .29  Low association
.01 to .09  Negligible association

8. To determine if differences exist in perceived school climate (as measured by the OHI survey instrument) by school size (small, medium, large), a one-way analysis of variance was calculated to determine if there were significant differences in the mean school climate score among teachers at different size schools in Louisiana. Tukey's post hoc test was performed.

9. To determine if differences exist in perceived school climate (as measured by the OHI survey instrument by type of school schedule (6-period, 7-period, A-B flex, 4X4) and number of years on current schedule (< 1 year, 2-3 years, 4-5 years, and >5 years). A one-way analysis of variance was calculated to determine if there were significant differences in the mean school climate score among teachers at schools utilizing the various types of schedules. An ANOVA was calculated to determine if there were significant differences in the mean school climate among teachers on current schedule for various number of years. Tukey's post hoc test was performed.
CHAPTER FOUR: RESULTS AND DISCUSSION

The following are results of a study conducted to compare Louisiana secondary academic and career and technical teachers on learning type and perception of school climate. Questionnaires were sent out to 688 public secondary school teachers in Louisiana. A total of 293 (42.6%) responses were received. The number of responses have been identified by variable and are not always equal. All respondents did not answer all questions. All responses received for each variable were used in the statistical analyses. The results are discussed according to the objectives of the study. Usable responses varied according to objective.

Objective One: Demographics

The first objective was to describe Louisiana secondary school teachers on selected demographic variables.

Age

Respondents were asked to indicate their age. The number of respondents answering this question was 285. The age of the respondents ranged from 22 to 67 years. The mean age was 42.95 years ($SD = 10.77$). The variable Age had a bi-modal distribution which included modes of 48 years and 50 years ($n = 16$).

Gender

Respondents were asked to indicate their gender. Two hundred ninety-one respondents answered the question regarding gender. Respondents consisted of 35.7% ($n = 104$) males and 64.3% ($n = 187$) females.
Ethnic Group

Respondents were asked to indicate ethnicity. A total of 281 respondents answered the question regarding ethnic group. A total of 81.9% (n = 230) of the respondents were white. Remaining respondents indicated that they were Black (n = 43 or 15.3%), Hispanic (n = 1 or 0.4%), Asian (n = 2 or 0.7%), or Other (n = 5 or 1.8%). "Other" consisted of American Indian (n = 1 or 0.4%), mixed ethnicity (n = 1 or 0.4%), or not specified (n = 3 or 1.0%).

Teaching Experience

Respondents were asked to indicate teaching experience in years. A total of 288 respondents answered the question relating to number of years teaching experience. The range was from 1 to 39 years. The mean number of years experience was 16.41 (SD = 10.41) years. The mode was three years (n = 17).

Highest Educational Degree

Respondents were asked to identify the highest level of education received. Table 1 presents the data regarding highest educational degree.

<table>
<thead>
<tr>
<th>Degree</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelors</td>
<td>173</td>
<td>59.2</td>
</tr>
<tr>
<td>Masters</td>
<td>73</td>
<td>25.0</td>
</tr>
<tr>
<td>Masters + 30</td>
<td>38</td>
<td>13.0</td>
</tr>
<tr>
<td>Educational Specialist</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Doctorate</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Total Valid Responses</strong></td>
<td>292</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Note.* “Other” - both respondents had received industry training.
There were 292 respondents to the question regarding highest degree earned. Of the respondents, 59.2% \((n = 173)\) had a bachelor’s degree.

**Teaching Area**

Respondents were asked to identify their major teaching area (subject taught at least 50% of the school day). See Table 2 regarding the data on major teaching area.

**Table 2. Teaching Area of Louisiana Secondary School Teachers.**

<table>
<thead>
<tr>
<th>Category</th>
<th>Teaching Area</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>Mathematics</td>
<td>31</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>Social Studies</td>
<td>25</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>21</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>20</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>Fine Arts</td>
<td>10</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Foreign Language</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>Career &amp; Technical</td>
<td>Business &amp; Office</td>
<td>52</td>
<td>17.7</td>
</tr>
<tr>
<td></td>
<td>Agriscience</td>
<td>44</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>Family &amp; Consumer Science</td>
<td>27</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>Technical Education</td>
<td>10</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>Marketing</td>
<td>6</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Health Occupations</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>Trade &amp; Industry</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>Other</td>
<td>Physical Education</td>
<td>15</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>Special Education</td>
<td>14</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>Total Valid</td>
<td>293</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note. “Other” includes librarians \((n = 3)\), speech therapists \((n = 1)\), counselors \((n = 3)\), and assistant principals \((n = 2)\). For analyses, teaching area is collapsed into two groups: career & technical and academic. Academic includes English, mathematics, science, social studies, foreign language and fine arts. Career & technical includes agriscience, business education, family & consumer science, marketing, technology education, and trade & industry. Due to the interaction of academic and vocational teaching roles of physical education and special education teachers, they were excluded from further analyses.
There were 293 respondents that indicated their major teaching area on the demographic survey. There were 143 (48.8%) career & technical teachers and 103 (35.1%) academic teachers.

Objective Two: Dominant Learning Type

The second objective was to describe the dominant learning type of Louisiana secondary school teachers as measured by the Learning Type Measure (LTM). A total of 233 respondents properly answered Part A of the LTM survey. The remaining 60 participants in the study failed to answer the LTM or improperly answered the questions by checking only one item per question rather than ranking the four possible choices. Part A of the LTM determines the dominant learning type. Utilizing the scoring instructions that accompanied the survey, the dominant learning type was determined by totaling the items related to each learning quadrant. The quadrant with the highest total score represents the dominant learning type. A total of 45.9% \((n = 107)\) of the respondents had a dominant Type 3 (common sense) learning type. Type 2 (analytic) learners accounted for 17.6% \((n = 41)\); Type 1 (imaginative) learners accounted for 17.2% \((n = 40)\); and Type 4 (dynamic) learners accounted for 13.3% \((n = 31)\). A total of 6.0% \((n = 14)\) of respondents showed no dominant learning type. These respondents had tied scores in two of the four quadrants. These responses were not used in the statistical analyses.

Objective Three: Perceived School Climate

The third objective was to determine the perceived school climate of public secondary school teachers through use of the Organizational Health Inventory (OHI). A total of 278 respondents answered the OHI. The mean and standard deviation for each of
the seven dimensions of school health (Hoy, et al., 2000) is listed in Table 3. The items in each dimension (scale), along with scoring instructions are listed at the end of Appendix B.

Table 3. **Means and Standard Deviations of the Seven Dimensions of School Health as Perceived by Louisiana Public Secondary School Teachers.**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional integrity(II)</td>
<td>19.51</td>
<td>4.31</td>
</tr>
<tr>
<td>Principal influence(PI)</td>
<td>15.26</td>
<td>3.44</td>
</tr>
<tr>
<td>Consideration(C)</td>
<td>13.87</td>
<td>3.90</td>
</tr>
<tr>
<td>Initiating structure(IS)</td>
<td>13.63</td>
<td>3.08</td>
</tr>
<tr>
<td>Resource support(RS)</td>
<td>13.57</td>
<td>3.96</td>
</tr>
<tr>
<td>Morale(M)</td>
<td>26.24</td>
<td>5.26</td>
</tr>
<tr>
<td>Academic emphasis(AE)</td>
<td>22.02</td>
<td>4.71</td>
</tr>
</tbody>
</table>

*Note. n = 278. The items in each dimension (scale) are listed at the end of Appendix B. Means are derived from school item scores associated with each dimension.*

The health index scores were converted from raw scores to standardized scores using the formula in Appendix B. The mean health index was 535.04 (*SD* = 139.34). The mean health index was above average. The health index scores ranged from 116.16 to 848.84. To interpret this data, the following descriptors were developed based on information in the scoring guide (Hoy, 2002): Very low: < 400; low: 400 - 449; below average: 450 - 475; slightly below average: 476 - 489; average: 490 - 510; slightly above average: 511 - 524; above average: 525 - 550; high: 551 - 600; and very high: > 600.

Table 4 shows frequencies and percentages of school climate scores by category.
Table 4. School Climate as Perceived by Louisiana Public Secondary School Teachers.

<table>
<thead>
<tr>
<th>Climate Category</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low Health Index</td>
<td>48</td>
<td>17.3</td>
</tr>
<tr>
<td>Low Health Index</td>
<td>33</td>
<td>11.9</td>
</tr>
<tr>
<td>Below Average Health Index</td>
<td>16</td>
<td>5.8</td>
</tr>
<tr>
<td>Slightly Below Average Health Index</td>
<td>9</td>
<td>3.2</td>
</tr>
<tr>
<td>Average Health Index</td>
<td>12</td>
<td>4.3</td>
</tr>
<tr>
<td>Slightly Above Average Health Index</td>
<td>18</td>
<td>6.5</td>
</tr>
<tr>
<td>Above Average Health Index</td>
<td>17</td>
<td>6.1</td>
</tr>
<tr>
<td>High Health Index</td>
<td>36</td>
<td>12.9</td>
</tr>
<tr>
<td>Very High Health Index</td>
<td>89</td>
<td>32.1</td>
</tr>
<tr>
<td><strong>Total Valid Responses</strong></td>
<td><strong>278</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Note:* Very low = standardized climate score <400, low = standardized climate score 400 - 449, below average = standardized climate score 450 - 475, slightly below average = standardized climate score 476 - 489, average = standardized climate score 490 - 510, slightly above average = standardized climate score 511 - 524, above average = standardized climate score 525 - 550, high = standardized climate score 551 - 600, very high = standardized climate score >600.

Objective Four: School Climate by Learning Type

The fourth objective was to determine if differences exist in perceived school climate (as measured by the OHI survey instrument) by teacher dominant learning type. The perceived school climate scores were compared statistically among the groups of learning types of Louisiana secondary public school teachers using the ANOVA procedure. The results of the test in Table 5 revealed no significant difference among the groups.

\(F_{3, 202} = .146, p = .932\).

Table 5. Analysis of Variance of Perceived School Climate Scores by Groups of Learning Type.

<table>
<thead>
<tr>
<th>Learning Type</th>
<th>df</th>
<th>SS</th>
<th>(F)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>9444.27</td>
<td>.146</td>
<td>.932</td>
</tr>
<tr>
<td>Within Groups</td>
<td>202</td>
<td>4368326.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>205</td>
<td>4377770.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Learning types were: Type 1(imaginative), Type 2(analytic), Type 3(common sense), and Type 4(dynamic).
Objective Five: Learning Type by Teaching Area

The fifth objective was to determine if the variables teacher dominant learning type and teaching area, defined as academic or career and technical, were independently distributed among public secondary school teachers in Louisiana. A Chi-Square test of independence was calculated. The results of the Chi-Square test are listed in Table 6. The obtained Chi-Square \((df = 3, n = 193) = 14.015, p = .003\), was significant, indicating that the dominant learning type and teaching area were not independent. The nature of the association was that career & technical teachers tended to have a substantially higher proportion classified as Type 3 (common sense) learners while having a lower proportion classified as Type 2 (analytic) and Type 4 (dynamic) learners. Academic teachers tended to have a lower proportion classified as Type 1 (imaginative) learners. Figure 1 illustrates the distribution of learning types of academic teachers. Figure 2 illustrates the distribution of learning types of career and technical teachers.

Table 6. Cross Classification of Dominant Learning Type by Teaching Area.

<table>
<thead>
<tr>
<th>Teaching Area</th>
<th>Dominant Learning Type (n/%*)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 1: Imaginative</td>
<td>Type 2: Analytic</td>
</tr>
<tr>
<td>Academic(^b)</td>
<td>15/16.9</td>
<td>23/25.8</td>
</tr>
<tr>
<td>Career &amp; Technical(^c)</td>
<td>22/21.2</td>
<td>14/13.5</td>
</tr>
<tr>
<td>Total</td>
<td>37/18.3</td>
<td>37/18.3</td>
</tr>
</tbody>
</table>

*Note. \(X^2 (df = 3, N = 193) = 14.015. P = .003. \(^a\)Row percentage \(^b\)Academic includes: English, Math, Science, Social Studies, Foreign Language, Fine Arts. \(^c\)Career & Technical includes: agriscience, business education, family and consumer science, marketing, technology education, and trade & industry. Areas of Physical Education and Special Education were not utilized in the analysis due to the complexity of teaching roles in those areas.
Figure 1. Percentages of Career and Technical Teachers by Learning Type.

Figure 2. Percentages of Academic Teachers by Learning Type.
Objective Six: School Climate by Teaching Area

The sixth objective was to determine if differences exist in perceived school climate (as measured by the OHI survey instrument) by teaching area. An independent t-test determined there were no significant differences in the mean school climate score between career & technical and academic public secondary school teachers in Louisiana. Academic teachers had a mean school climate score of 532.60 while career and technical teachers had a mean school climate score of 531.96 (t = .034, p = .973). Academic teachers include teachers who teach English, mathematics, science, social studies, foreign language and fine arts for at least 50 percent of the school day. Career and technical teachers include those who teach agriscience, business education, family & consumer science, health education, marketing, technology education, and trade and industrial courses for at least 50 percent of the school day.

Objective Seven: School Climate by Selected Demographics

The seventh objective was to determine if a relationship existed between perception of school climate and certain demographic characteristics including teacher age, teacher's gender, principal’s gender, teacher's ethnicity, and years teaching experience. For age and years experience, a Pearson’s product moment correlation coefficient was calculated; for teacher's gender, principal’s gender, and teacher's ethnicity, a point biserial correlation coefficient was calculated; and for interpretation of correlation coefficients, Davis’s set of descriptors was used (Davis, 1971). The coefficients and their descriptions are as follows:

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 or higher</td>
<td>Very strong association</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial association</td>
</tr>
</tbody>
</table>
.30 to .49  Moderate association
.10 to .29  Low association
.01 to .09  Negligible association

There was no significant relationship found between perceived school climate and gender or principal’s gender according to the calculated point biserial correlation coefficient. Gender was coded "1" for male and "2" for female. The calculated coefficient was $r_{PBS} = .087 \ (p = .150)$ for gender and $r_{PBS} = .074 \ (p = .222)$ for principal’s gender. A point biserial correlation coefficient was calculated to determine the relationship between perceived school climate and teacher's ethnicity. Ethnicity was coded "1" for black and "2" for white. Due to number of responses in other ethnic categories, they were not utilized in this analysis. The calculated coefficient was $r_{PBS} = .019 \ (p = .758)$ was not statistically significant. Pearson product moment correlation coefficient was used to measure the relationship between perceived school climate and the demographic variables of age and years of teaching experience. The calculated coefficient was $r_{PPM} = .108 \ (p = .076)$ for age. The calculated coefficient was $r_{PPM} = .110 \ (p = .068)$ for years teaching experience. The calculated Pearson product moment correlation coefficients for age and years of teaching experience were not statistically significant.

Objective Eight: School Climate by School Size

The eighth objective was to determine if differences existed in perceived school climate (as measured by the OHI survey instrument) by school size. School size was determined on the demographic survey. Teachers were asked to choose among three sizes; small: <500 students, medium: 500 - 1000 students, or large: >1000 students. Table 7 provides frequencies and percentages obtained from the demographic survey for school
size. A one-way analysis of variance determined there were no significant differences in the mean school climate score among teachers at different size schools in Louisiana. The

Table 7. Size of Louisiana Public Secondary Schools as Reported by Louisiana Public Secondary School Teachers.

<table>
<thead>
<tr>
<th>Size of School</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 500 students</td>
<td>97</td>
<td>33.1</td>
</tr>
<tr>
<td>500 - 1000 students</td>
<td>130</td>
<td>44.4</td>
</tr>
<tr>
<td>over 1000 students</td>
<td>66</td>
<td>22.5</td>
</tr>
<tr>
<td>Total responses</td>
<td>293</td>
<td>100.0</td>
</tr>
</tbody>
</table>

perceived school climate scores were compared statistically by school size using the ANOVA procedure. The results of the test in Table 8 revealed no significant difference among the groups. \( F_{2, 275} = .298, p = .743).\)

Table 8. Analysis of Variance of Perceived School Climate Scores by School Size.

<table>
<thead>
<tr>
<th>School Size</th>
<th>df</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>11623.58</td>
<td>.298</td>
<td>.743</td>
</tr>
<tr>
<td>Within groups</td>
<td>275</td>
<td>5366330.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>277</td>
<td>5377954.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. School sizes were <500 students, 500 - 1000 students, and >1000 students

Objective Nine: School Climate by Type of Schedule

The ninth objective was to determine if differences exist in perceived school climate (as measured by the OHI survey instrument) by type of school schedule (6-period, 7-period, 7-period A-B/flex, or 4X4 block). Table 9 summarizes the distribution of schools by type of schedule. A one-way analysis of variance determined significant differences in the mean school climate score among teachers at schools utilizing the various types of schedules. The results of the test in Table 10 revealed a significant difference between the groups.
Table 9. Types of Schedules in Louisiana Public Secondary Schools as Reported by Louisiana Public Secondary School Teachers.

<table>
<thead>
<tr>
<th>Type of Schedule</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 period traditional</td>
<td>21</td>
<td>7.2</td>
</tr>
<tr>
<td>7 period traditional</td>
<td>110</td>
<td>37.5</td>
</tr>
<tr>
<td>AB - Alternating Day</td>
<td>12</td>
<td>4.1</td>
</tr>
<tr>
<td>AB - Flex</td>
<td>12</td>
<td>4.1</td>
</tr>
<tr>
<td>4 x 4 Block</td>
<td>137</td>
<td>46.8</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>293</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: “Other” was not specified on the instrument. AB - Alternating Day and AB - Flex schedules were combined in further analyses. “Other” was not used in analyses.

\(F_{3, 273} = 9.660, p < .001\). Effect size was calculated using Cohen's \(f\) (Williams & Kotrlik, 2002). The calculated Cohen's \(f\) was .326 which shows a medium effect size.

Table 10. Analysis of Variance of Perceived School Climate Scores by Type of Schedule.

<table>
<thead>
<tr>
<th>Type of Schedule</th>
<th>df</th>
<th>SS</th>
<th>(F)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>515908.3</td>
<td>9.66</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>273</td>
<td>4859787</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>5375695</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Schedule types were: Seven period A-B/flex, traditional 7 period, four by four, and traditional 6 period.

Tukey's post hoc test was performed to follow up the significant \(F\) value to determine where specific differences existed. Results of this procedure revealed that perceived climate was significantly higher for the traditional 6 period day. The traditional 7 period day and the 4 X 4 schedules were not significantly different on perceived school climate. The 7 period A-B/flex had perceived climate scores significantly lower than 4 X 4 and traditional 6 period
day schedules. Table 11 provides the mean school climate scores for the four groups and identifies the significant comparisons.

Table 11. **Mean School Climate Score by Type of School Schedule.**

<table>
<thead>
<tr>
<th>Schedule Type</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 period A-B/flex</td>
<td>23</td>
<td>455.36</td>
<td>88.49</td>
</tr>
<tr>
<td>Traditional 7 period</td>
<td>104</td>
<td>517.25</td>
<td>132.22</td>
</tr>
<tr>
<td>Four by four</td>
<td>131</td>
<td>544.55</td>
<td>144.85</td>
</tr>
<tr>
<td>Traditional 6 period</td>
<td>19</td>
<td>665.85</td>
<td>94.03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>277</td>
<td>535.21</td>
<td>139.56</td>
</tr>
</tbody>
</table>

*Note: F_{3, 273} = 9.660, p < .001. Overall sample mean climate score = 535.21, sd = 139.56, maximum = 848.84, and minimum = 116.16. Means not sharing a common superscript are significantly different at p < .05 or less (Tukey's Post Hoc Test).*

Possible differences in climate scores based on number of years on current schedule type were also investigated. Frequencies and percentages of schools on current schedules for certain time frames are presented in Table 12. A one-way analysis of variance determined significant differences in the mean school climate score by number of years on current schedule type. The results of the test in Table 13 revealed a significant difference among the groups. (F_{3, 273} = 2.717, p = .045). Effect size was calculated using Cohen's
(1988) $f$ (Williams & Kotrlik, 2002). The calculated Cohen's $f$ was .173 which shows a small effect size.

Table 13. **Analysis of Variance of Perceived School Climate Scores by Number of Years on Current Schedule.**

<table>
<thead>
<tr>
<th>Years on Schedule</th>
<th>df</th>
<th>SS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>155148.3</td>
<td>2.717</td>
<td>.045</td>
</tr>
<tr>
<td>Within Groups</td>
<td>273</td>
<td>5196026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>5351175</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Number of years on schedule were: More than 5 years, 4-5 years, 2-3 years, less than 1 year.

Tukey's post hoc test was performed to follow up the significant $F$ value to determine where specific differences exist. Results of this procedure revealed that perceived climate was significantly higher for those teachers in schools who had been on the current schedule for less than 1 year. Table 14 provides the mean school climate scores for the four groups and identifies the significant comparisons.

Table 14. **Mean School Climate Score by Years on Current Schedule.**

<table>
<thead>
<tr>
<th>Years on Current Schedule</th>
<th>$N$</th>
<th>Mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5 years</td>
<td>72</td>
<td>515.44</td>
<td>132.45</td>
</tr>
<tr>
<td>2-3 years</td>
<td>67</td>
<td>529.67</td>
<td>155.68</td>
</tr>
<tr>
<td>&gt; 5 years</td>
<td>120</td>
<td>538.71</td>
<td>135.49</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>18</td>
<td>618.05</td>
<td>98.94</td>
</tr>
<tr>
<td>Total</td>
<td>277</td>
<td>535.63</td>
<td>139.24</td>
</tr>
</tbody>
</table>

*Note: $F_{3, 273} = 9.660, p = .045$. Overall sample mean school climate score = 535.63, $sd = 139.24$, maximum = 848.84, minimum = 116.16. $^{a,b}$ Means not sharing a common superscript are significantly different at $p < .05$ or less (Tukey's Post Hoc Test).*

Table 15 shows the relationship between type of current school schedule and number of years on current schedule. The type of schedule with the highest school climate score was
the traditional six period day. The number of years on current schedule with the highest school climate scores was one year or less. There were no schools on the traditional six period day for one year or less.

Table 15. **Number of Years on Current Schedule by Type of Current Schedule.**

<table>
<thead>
<tr>
<th></th>
<th>6 period day</th>
<th>7 period day</th>
<th>AB/Flex</th>
<th>4 x 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/%</td>
<td>n/%</td>
<td>n/%</td>
<td>n/%</td>
<td>n/%</td>
</tr>
<tr>
<td>1 year</td>
<td>0/0.0%</td>
<td>3/2.8%</td>
<td>0/0.0%</td>
<td>15/10.9%</td>
<td>18/6.2%</td>
</tr>
<tr>
<td>2 - 3 years</td>
<td>0/0.0%</td>
<td>5/4.6%</td>
<td>4/16.7%</td>
<td>62/45.3%</td>
<td>71/24.4%</td>
</tr>
<tr>
<td>4 - 5 years</td>
<td>2/9.5%</td>
<td>12/11.0%</td>
<td>9/37.5%</td>
<td>52/38.0%</td>
<td>75/25.8%</td>
</tr>
<tr>
<td>+ 5 years</td>
<td>19/90.5%</td>
<td>89/81.6%</td>
<td>11/45.8%</td>
<td>8/5.8%</td>
<td>127/43.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21/100%</strong></td>
<td><strong>109/100%</strong></td>
<td><strong>24/100%</strong></td>
<td><strong>137/100%</strong></td>
<td><strong>291/100%</strong></td>
</tr>
</tbody>
</table>

*Note:* Traditional 6 or 7 period schedule meets daily for 45-60 minutes for 180 days; AB/Flex schedule meets for 6 blocks (85-100 minutes) of time on alternating days and one 50 minute class daily; 4 x 4 schedule meets for four extended blocks (85-100 minutes) of time each semester.
CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains the summary, conclusions, and recommendations based on a study conducted to compare Louisiana secondary career & technical and academic teachers on demographics, school climate and learning type.

The purpose of this study was to investigate the relationship between Louisiana public secondary school teachers’ primary learning type and teaching area; and the influence of learning type and teaching area on the teacher’s perception of school climate.

The objectives of the study were: (1) Describe Louisiana public secondary school teachers on selected demographic variables. These characteristics include: years of teaching experience, teaching area, age, gender, ethnic group, and highest degree earned, (2) Determine the dominant learning type of Louisiana public secondary school teachers as measured by the Learning Type Measure (LTM), (3) Determine perceived school climate of Louisiana public secondary school teachers as measured by the Organizational Health Inventory, (4) Determine if differences exist in perceived school climate by teacher dominant learning type of secondary public school teachers in Louisiana, (5) Determine if teacher dominant learning type and teaching area are independently distributed among public secondary school teachers in Louisiana, (6) Determine if differences exist in perceived school climate by teaching area of secondary public school teachers in Louisiana, (7) Determine if a relationship exists between Louisiana public secondary school teachers perception of school climate and certain characteristics including teacher age, teacher gender, principal’s gender and years teaching experience, (8) Determine if differences exist in perceived school climate of public secondary school teachers in Louisiana by school size,
and (9) Determine if differences exist in perceived school climate of public secondary teachers in Louisiana by type of schedule.

Methodology

Using a cluster sampling model, a random sample of 12 parishes with 3 replacements was drawn. Ten of the original sample plus the three replacements were included in the study. All three replacement parishes were needed to equal the number of teachers in the two original parishes that withdrew from the study. Career and technical teachers were randomly selected in each parish, up to a maximum of 40 per parish. An equal number of other teachers was randomly selected in each parish. Surveys were sent out to 688 teachers. Surveys were collected from 293 (42.6%) Louisiana public secondary school teachers.

A review of literature and input from educational experts allowed the researcher to choose and develop the questionnaire to be used in this study. The questionnaire consisted of three parts:

(a) A researcher developed demographic questionnaire consisting of 10 multiple choice/short answer questions;

(b) the Organizational Health Inventory for Secondary Schools (OHI) (Hoy & Feldman, 1987) consisting of 44 items with a Likert-type four point scale designed to measure seven constructs of school health;

(c) the Learning Type Measure (LTM) (McCarthy & St. Germain, 2000) consisting of 26 questions divided into two parts: Part A consists of 15 items with an ipsitive four point scale designed to determine the preferred quadrant for learning; Part B consists of 11 items designed to determine a preference for watching or doing when learning.
Data were analyzed with the Statistical Package for Social Sciences, Version 10.1 for Windows (SPSS). Descriptive, correlational and analysis of variance statistics were utilized.

Summary of Findings

Objective one was to describe Louisiana public secondary teachers on selected demographic characteristics. The average respondent was female (64.3%), 43 years of age, white (81.9%), and have a bachelor's degree (59.2%). Average respondents had 16.41 years teaching experience.

The second objective was to describe the dominant learning type of Louisiana public secondary school teachers as measured by the LTM. Almost one-half (45.9%) of respondents were type 3 (common sense) learners, 17.6% were type 2 (analytic) learners, 17.2% were type 1 (intuitive) learners, and 13.3% were type 4 (dynamic) learners.

Objective three sought to determine the perceived school climate of Louisiana public secondary school teachers as measured by the OHI-S. The mean school health score was 535.04 (SD=139.34). The mean school climate score was above average on school health. School health index scores ranged from 116.16 to 848.84.

Objective four sought to determine if differences exist in perceived school climate by dominant learning type. No significant differences were found in mean school climate scores among the four learning types, $F_{(3, 202)} = .146, p = .932$.

The fifth objective sought to determine if the variables teacher dominant learning type and teaching area were independently distributed among public secondary school teacher in Louisiana. Based on the results of a Chi-Square Goodness of Fit test
[\chi^2 (df = 3, n = 193) = 14.015, p = .003], a larger proportion of career & technical teachers were dominant learning type 3 (common sense learners).

Objective six sought to determine if differences exist in perceived school climate by teaching area. No significant differences were found in mean school climate scores by teaching area, \( t = .034, p = .973 \).

The seventh objective sought to determine if a relationship existed between perception of school climate and certain demographic characteristics of Louisiana public secondary school teachers. Based on the results of point biserial correlations \( r_{PBS} = .087, p = .150 \) for gender and \( r_{PBS} = .074, p = .222 \) for principal’s gender, no significant correlations were found. Based on the results of Pearson's product moment correlations \( r = .108, p = .076 \) for age of respondent and \( r = .110, p = .068 \) for years teaching experience, no significant correlations were found.

Objective eight sought to determine if differences exist in perceived school climate by school size. No significant differences were found in mean school climate scores by size of schools, \( F_{(2, 275)} = .298, p = .743 \).

The ninth objective sought to determine if differences exist in perceived school climate by type of school schedule. Based on the results of an Analysis of Variance, \( F_{(3, 273)} = 9.660, p < .001 \), significant differences exist. According to Cohen's (1988) effect size definitions, Cohen's \( f = .326 \) was interpreted as a medium effect size. Tukey's post hoc test revealed that the traditional 6 period schedule had a significantly higher perceived school climate score than the other types of schedules. Differences in perceived school climate by years on current schedule were also sought. Based on the results of an ANOVA, \( F_{(3, 273)} = 2.717, p = .045 \), significant differences exist. The Cohen's \( f = .173 \) was interpreted as a small
effect size (Cohen, 1988). Tukey's post hoc test revealed that teachers on the current schedule for less than one year had a significantly higher climate score than other groups.

Conclusions

Perceived school climate and dominant learning type do not differ based on gender or ethnicity. This is based on the insignificant differences determined in this study for gender and ethnicity. This is in contrast to studies by Rowan, et al., Raudenbush and Kang (1991), Matthews & Hamby (1995), Severiens & TenDam (1994), Nuby & Oxford (1996) and Wilson (1998) who found differences in school climate or learning type based on gender and ethnicity.

Dominant learning type is not independently distributed among Louisiana public secondary school teachers. This is based on the finding that career and technical teachers are more likely to be dominant type 3 (common sense) learners than academic teachers. While type 3 teachers make up less than half of all teachers, almost sixty percent of career and technical teachers are dominant type 3. The MALTS study (Harrison, 1991) identified that 33 percent of Louisiana secondary teachers have a dominant learning type 3. The current study has found an increase in teachers with a "common sense" learning type.

Louisiana public secondary school teachers perception of school climate does not vary due to differences in dominant learning type or teaching area. This is based on findings that the scores on the OHI did not differ based on LTM scores. Scores on the OHI did not differ based on teaching area. This finding is in contrast to Rowan, et al., Raudenbush and Kang (1991). Rowen, et al. (1991) found significant differences in climate perceptions among different teaching disciplines. School climate perceptions were not significantly different based on age or gender in the current study. These findings are also in contrast to
the Rowen, et al. (1991) study in which significant differences were found based on gender and ethnicity.

Perceived school climate of secondary public school teachers does not vary according to school size. Findings in this study had no significant differences in OHI scores by school size. In contrast to the findings in this study, research by Pallas (1988) found that small schools generally have better climates than large schools, also, a study by McCoy (1999) utilized case studies and found that the larger school had a more positive teacher view of climate than the smaller school.

Perceived school climate is affected by the type of schedule and length of time on that schedule. This conclusion was based on the significant difference determined in this study on current schedule type and number of years on that schedule. Teachers on a traditional six period schedule have higher perceptions of school climate than those on traditional 7 period schedules, seven period A-B/flex, or four-by-four block schedules. In addition, teachers on the current schedule type for less than one year were found to have a higher perception of school climate. This may be related to a novelty effect of the new schedule. These findings were in contrast to findings of McCoy (1999) who found higher perceptions of climate in schools on block schedules for three or more years.

Recommendations

The need for further research is based on the conclusions of the study. These findings suggest that differences in school climate are due to factors other than demographic, learning style, and teaching area. Further research is needed to determine what these factors are in Louisiana schools.
Findings of the current study contradicted findings of several other studies in regard to school climate and type of schedule, number of years on current schedule, or teaching area. Further research is needed to develop and clarify the effects of these variables on school climate.

Further research is needed to determine ways to maintain the perceived higher school climate as schools move through change and implement school improvement plans in the state accountability program.

Implications for school climate and learning types on improving student achievement should be considered in development of teacher pre-service programs to better prepare Louisiana teachers to develop a variety of teaching strategies that would appeal to all learning types. In-service activities that focus on school improvement and accountability should be developed which include information on learning types and school climate.

The following methodological recommendations are made when reflecting on difficulties faced during this study. A high percent of teachers did not properly complete the LTM survey. It is recommended that the researcher collect data on the LTM in person so that directions could be clarified. Time of collection also became a problem during this study and is reflected in a lower than desired response rate. Data collections was delayed until late in the school year. It is believed that this had an adverse affect on teacher response.
REFERENCES


APPENDIX A: LEARNING TYPE MEASURE (LTM)
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Tracy,

You may include a copy of the question page in the Appendix of your dissertation, without the scoring instructions, adding the following wording:

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Thank you for using adding these two paragraphs. I am delighted that you have advanced your dissertation to this point!

Linda Lippitt, Ph.D.
Director, Research Division
About Learning, Inc.

-----Original Message-----

From: Hals and Tracy Beard [mailto:hntbeard@centurytel.net]
Sent: Monday, October 07, 2002 10:10 PM
To: Linda Lippitt
Subject: Re: dissertation proposal

Dr. Lippitt,

I am still planning to finish this semester with my dissertation. Is there a copyright or sample item page that I can include in my dissertation?

Another student at LSU - Cindy Handley also used the instrument and I have a copy of her dissertation. She typed a couple of sample items and included the address for more information about the instrument. Would this be ok to include in the appendix in place of a copy of the instrument? Thanks for all your help and I will be glad to send a copy of the abstract, or entire document once it is finalized.

Tracy Beard
APPENDIX B: ORGANIZATIONAL HEALTH INVENTORY - (OHI-S)
DIRECTIONS: THE FOLLOWING ARE STATEMENTS ABOUT YOUR SCHOOL. PLEASE INDICATE THE EXTENT TO WHICH EACH STATEMENT CHARACTERIZES YOUR SCHOOL BY CIRCLING THE APPROPRIATE RESPONSE.

RO = RARELY OCCURS  SO = SOMETIMES OCCURS  O = OFTEN OCCURS  VFO = VERY FREQUENTLY OCCURS

1. Teachers are protected from unreasonable community and parental demands  .  RO  SO  O  VFO
2. The principal gets what he or she asks for from superiors ..................  RO  SO  O  VFO
3. The principal is friendly and approachable ..............................  RO  SO  O  VFO
4. The principal asks that faculty members follow standard rules and regulations  .  RO  SO  O  VFO
5. Extra materials are available if requested ..............................  RO  SO  O  VFO
6. Teachers do favors for each other ..............................  RO  SO  O  VFO
7. The students in this school can achieve the goals that have been set for the ..  RO  SO  O  VFO
8. The school is vulnerable to outside pressures ..............................  RO  SO  O  VFO
9. The principal is able to influence the actions of his or her superiors .........  RO  SO  O  VFO
10. The principal treats all faculty members as his or her equal ...............  RO  SO  O  VFO
11. The principal makes his or her attitudes clear to the school ...............  RO  SO  O  VFO
12. Teachers are provided with adequate materials for their classrooms ........  RO  SO  O  VFO
13. Teachers in this school like each other ..............................  RO  SO  O  VFO
14. The school sets high standards for academic performance ..............................  RO  SO  O  VFO
15. Community demands are accepted even when they are not consistent with the educational program ..................................  RO  SO  O  VFO
16. The principal is able to work well with the superintendent ...............  RO  SO  O  VFO
17. The principal puts suggestions made by the faculty into operation ..........  RO  SO  O  VFO
18. The principal lets faculty know what is expected of them ...............  RO  SO  O  VFO
19. Teachers receive necessary classroom supplies ..........................  RO  SO  O  VFO
20. Teachers are indifferent to each other ..............................  RO  SO  O  VFO
21. Students respect others who get good grades ..........................  RO  SO  O  VFO
22. Teachers feel pressure from the community ..........................  RO  SO  O  VFO
23. The principal's recommendations are given serious consideration by his or her superiors ........................................ RO SO O VFO

24. The principal is willing to make changes. ................................. RO SO O VFO

25. The principal maintains definite standards of performance ................ RO SO O VFO

26. Supplementary materials are available for classroom use .......................... RO SO O VFO

27. Teachers exhibit friendliness to each other ................................... RO SO O VFO

28. Students seek extra work so they can get good grades .......................... RO SO O VFO

29. Select citizen groups are influential with the board .......................... RO SO O VFO

30. The principal is impeded by the superiors ....................................... RO SO O VFO

31. The principal looks out for the personal welfare of faculty members. .... RO SO O VFO

32. The principal schedules the work to be done .................................. RO SO O VFO

33. Teachers have access to needed instructional materials ........................ RO SO O VFO

34. Teachers in this school are cool and aloof to each other ...................... RO SO O VFO

35. Teachers in this school believe that their students have the ability to achieve academically ................................................................. RO SO O VFO

36. The school is open to the whims of the public .................................. RO SO O VFO

37. The morale of the teachers is high. .................................................. RO SO O VFO

38. Academic achievement is recognized and acknowledged by the school .... RO SO O VFO

39. A few vocal parents can change school policy ..................................... RO SO O VFO

40. There is a feeling of trust and confidence among the staff ..................... RO SO O VFO

41. Students try hard to improve on previous work .................................. RO SO O VFO

42. Teachers accomplish their jobs with enthusiasm .................................. RO SO O VFO

43. The learning environment is orderly and serious ................................. RO SO O VFO

44. Teachers identify with the school ...................................................... RO SO O VFO

Scoring the OHI

The OHI-S evaluates seven dimensions of school organizational health which can be used to determine school climate. The 44 questions are divided as follows:

Institutional Integrity (II) - 1, 8, 15, 22, 29, 36, 39
Initiating Structure (IS) - 4, 11, 18, 25, 32
Consideration (C) - 3, 10, 17, 24, 31
Principal Influence (PI) - 2, 9, 16, 23, 30
Resource Support (RS) - 5, 12, 19, 26, 33
Morale (M) - 6, 13, 20, 27, 34, 37, 40, 42, 44
Academic Emphasis (AE) - 7, 14, 21, 28, 35, 38, 41, 43

Hoy, Tarter, & Kottkamp (2000) detail scoring instructions. Add up scores for items in each dimension (reverse scoring 8, 15, 20, 22, 29, 30, 34, 36, and 39). To compare your health profile with other schools, it is recommended that you standardize each school score. Convert the school subtest scores to standardized scores with a mean of 500 and a standard deviation of 100 utilizing the following formula:

\[
\text{SdS for subtest} = \frac{100 \times (\text{school subtest score} - \text{Mean of normative sample})}{\text{Standard Deviation of normative sample} + 500}
\]

Mean and standard deviations for the current data base are included in Hoy, Tarter, & Kottkamp, 2000, p. 160. The overall health index is computed by adding together the seven standard subtest scores and dividing by seven.
Hi Tracy--

You have my permission to use the OHI in your research. Just cite the source of the instrument in you proposal. In the book, Open Schools/Healthy Schools (Hoy, Tarter, and Kottkamp, 1991) permission is granted. Also check out my web site at www.coe.ohio-state.edu/whoy.

Good luck with you research.

Wayne K. Hoy
Fawcett Professor of Educational Administration
The Ohio State University
116 Ramseyer Hall
29 West Woodruff Avenue
Columbus, OH 43210
Office: 614-292-5249
Home: 614-488-5064
Fax: 614-488-5075
E-mail: WayneHoy@aol.com

HI Tracy--

Your best source of information on the OCDQ is my website at www.coe.ohio-state.edu/whoy

Once you are on the home page, if you click on research instruments you will go to the OCDQ, which provides a copy of the instrument and reliability and validity information. You can download the instrument, copy it, and use it.
Also, you can go from the homepage to "Books on Line." There you will find a copy of book that will give you even more information about the OCDQ. You can download the chapters you need. One further point, because you are studying secondary schools, you might consider using the OHI instead of the OCDQ.

The OHI and OCDQ are both instruments to measure the climate of the school. The OCDQ uses a personality metaphor to get an openness and the OHI uses a health metaphor to talk about organizational health. For secondary schools, I prefer the health metaphor because it has seven dimensions versus four for the OCDQ. Moreover, the health dimensions look at community-school relations (institutional integrity) and teacher-student relations (academic emphasis)--both of which are important aspects of school climate. You can read about the two measure in my book that is on line.

Good luck.
Wayne K. Hoy
Fawcett Professor of Educational Administration
The Ohio State University
APPENDIX C: DEMOGRAPHIC SURVEY
DEMOGRAPHIC SURVEY

Directions:

a. Please respond to the following items by entering the appropriate data or placing an “X” in the appropriate blank.

b. Mark only ONE response for each item.

Note: Surveys are identified for follow-up purposes only. All responses will be treated with confidentiality.

1. My age is ______.

2. My gender is: _____ male   _____ female

3. My principal’s gender is: _____ male   _____ female

4. My ethnic group is: _____ African American
   _____ Caucasian
   _____ Hispanic
   _____ Other (please specify: _________________________)

5. My total number of years of teaching experience is _________.

6. My highest educational degree is
   _____ Bachelor degree
   _____ Masters degree
   _____ Masters plus 30
   _____ Educational specialist
   _____ Doctorate
   _____ Other (please specify: _________________________)
7. My primary teaching responsibility is with (primary area is your teaching assignment for more than 50% of the school day). Please choose only one category.

- English
- Fine Arts (Music, Art)
- Math
- Science
- Social Studies
- Foreign Language
- Physical Education
- Special Education
- Agriscience
- Business and Office
- Family and Consumer Science
- Health Occupations
- Marketing and Distributive
- Technology Education
- Trade & Industry
- Other (please specify: ____________________________)

8. My school is currently utilizing the following school schedule:

- Traditional Six Period Day
- Straight Seven Period Day
- Seven Period A-B Schedule
- Seven Period Flex Schedule
- Four by Four Block Schedule
- Other (please specify: ____________________________)

9. We have been on this schedule for

- less than one year
- 2 to 3 years
- 4 to 5 years
- more than 5 years

10. The student population at my school is

- less than 500 students
- between 500 and 1000 students
- more than 1000 students
APPENDIX D: SUPERINTENDENT LETTER
136 Hudspeth Lane  
Washington, LA 70589  
December 2, 2001  

First Name Last Name  
Address  
City, LA  Zip  

Dear Superintendent Last Name:  

I am currently working on a PhD in Career and Technical Education at Louisiana State University and I am the Assistant Principal at North Central High School. My dissertation is concerned with the relationships among Louisiana public secondary school teachers' dominant learning style, their teaching area, and their perception of school climate. By determining these relationships, we can better utilize teacher preparation programs and professional development activities to improve the educational system. 

Your school district was randomly chosen to participate in this study. I am requesting your support and permission to survey your secondary career and technical education teachers and a random sample of your secondary academic teachers. I plan to administer a questionnaire to the teachers in early spring that includes a demographic profile, a learning type survey and a school climate survey. I will mail surveys to individual teachers at their schools and they will take approximately 10-15 minutes to complete the survey. 

To conduct this study, I need 1) a list of secondary teachers for each school in your district and 2) I also hope that you will agree to sign the enclosed letter of support for the study. A random sample of teachers will be drawn from the list. No personal information is required and the study is designed to maintain the confidentiality of all participants. Upon completion of the study, I will send you a district profile (results from the surveys) with additional related information. 

Please assist me in this endeavor. If you agree to support this study, I am asking you to do two things. Send a list of all secondary teachers for each school in your district, and sign the enclosed cover letter showing your support for participation in the study. Please return the list and letter in the postage paid envelope provided. 

Thank you for your assistance in making this study a success. If you have questions, please call me at 337-623-4239 (work) or 318-346-4419 (home).  

Sincerely,  

Tracy Beard
APPENDIX E: TEACHER FIRST MAILING
Dear Teacher,

I am currently working on a Ph.D. in Career and Technical Education at Louisiana State University. My dissertation is concerned with the relationships between teacher learning types and secondary teachers’ perceptions of school climate. It is my hope that by determining these relationships we do a better job of designing teacher preparation programs and professional development activities.

I am asking for 10-15 minutes of your time to complete the enclosed survey. Upon completion, please return the survey in the enclosed postage paid envelope. The questionnaire includes a demographic profile, a learning type scale and a school climate scale. The study is designed to maintain the confidentiality of all participants.

Please assist me in this endeavor by returning the survey in the envelope provided by April 25, 2002. Upon completion of my study, I will send you an analysis of your learning type and a synopsis of my findings. It is my hope that the information gathered in this study will help to improve education in Louisiana by gaining a better understanding of factors affecting teachers.

Thank you for your assistance in making this study a success.

Sincerely,

Tracy Beard

Tracy Beard

Superintendent
APPENDIX F: TEACHER SECOND MAILING
Dear Teacher:

On April 12, I sent you a letter asking you to complete a survey about learning type and school climate. As of today, I have not received your response.

As you know education today is focusing on improving student performance. In order to improve education in Louisiana, it is paramount that we understand factors affecting student performance. Learning type and school climate are two such factors.

The enclosed surveys address teacher learning type and school climate of secondary schools in Louisiana. It is my hope that the results of this study will be used to develop better teacher preparation programs, as well as professional development activities designed to improve education in Louisiana’s secondary schools.

**I need your help!** Please complete and return the enclosed surveys in the postage-paid, pre-addressed envelope provided by **Friday, May 17**. It should take you about 10 minutes to complete this survey and your responses will be kept confidential. Thank you in advance for your cooperation and support. If you have questions, please contact me at 318-346-4419 or by e-mail at tab4258@slp.k12.la.us.

Sincerely,

Tracy Beard

Tracy Beard
APPENDIX G: PERMISSION LETTER FROM ABOUT LEARNING, INC.
September 13, 2002

Tracy Beard
136 Hudspeth Lane
Washington, LA 70589

Dear Ms. Beard:

Thank you for your request for permission to administer the Learning Type Measure (LTM) as part of your dissertation study at Louisiana State University. After reviewing your material, we authorize and support your use of the LTM for this research.

At the conclusion of your study, we would appreciate being kept informed of the findings and recommendations so that we may consider your work for inclusion in our Research and Dissertation Guide.

Best wishes as you complete your research.

Sincerely,

Linda Lippitt, Ph.D.
Director, Research Division
About Learning, Inc.
VITA

Tracy Lynn Andries Beard was born on July 4, 1964. She is the daughter of Dr. John and Patricia Andries of Rosa, Louisiana. Tracy graduated from Morrow High School in Morrow, Louisiana in 1982. She received her Bachelor of Science degree from Louisiana State University in Vocational Home Economics Education in December, 1985. Tracy began work immediately as a graduate assistant, and received her master's degree in vocational education at Louisiana State University in May, 1987. She is currently completing the requirements for the degree of Doctor of Philosophy in vocational education at Louisiana State University. She will receive her degree on December 20, 2002.

Tracy has been working in education since 1987. She taught home economics at Capitol High School, Plaisance High School, and Northwest High School. In 1994, she made a shift into science education and moved to North Central High School. Currently, she is assistant principal at North Central High School.

Tracy has been married to husband, Hals for almost 19 years. They have five daughters: Danielle, Heidi, Lauren, Cody, and Maggie. They currently live in the small community of Rosa, Louisiana. Tracy enjoys working with her daughters and their FFA/4-H livestock projects. She also enjoys sewing, cross stitch, and reading when she has the time.