Teacher Certification, Teaching Style, And Student Achievement
In Arizona Charter Schools
by
Jill Lambert Andrews

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Liberty University
May 2004
Teacher Certification, Teaching Style, and Student Achievement in
Arizona Charter Schools

by

Jill Lambert Andrews

Has been approved
March 2004

Approved:

Chair

Reader

Reader

Supervisory Committee

Accepted:

Dean, School of Education
Statement by Author

This dissertation has been submitted in partial fulfillment of the requirements for a Doctorate of Education at Liberty University and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this dissertation are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the School of Education when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

Signed: [Signature]

iii
Acknowledgements

First, I would like to thank my committee members Dr. Clarence Holland, Dr. Karen Parker, and Dr. Pauline Donaldson for taking the time to work with me during this dissertation study and providing ongoing support.

Special appreciation is extended to my dissertation chair, Dr. Clarence Holland, for his consistent availability, guidance, and encouragement.

An expression of gratitude is extended to Dr. Anthony Grasha who developed the teaching style inventory and granted its use in this study.

Finally, I wish to express a heartfelt acknowledgement of appreciation to my husband, Jim, for his patience and inspiration needed throughout this endeavor.
Abstract

The No Child Left Behind (NCLB) Act of 2002 mandated teacher certification criteria and accountability for student academic growth for all public schools, including charter schools. At the time of this study, Arizona had 464 charter schools and was one of three states and the District of Columbia that did not require charter schools to employ certified teachers. This quantitative study examined the effect of teacher certification status on student reading achievement and the relationship between teaching style and student reading achievement in Arizona charter schools. Thirty-nine subjects, selected from a convenience sampling, were third through sixth grade Arizona charter school teachers. Twenty-two of said subjects did not hold an Arizona teaching certificate and 17 subjects did hold valid Arizona teaching certificates. The teacher-subjects completed Grasha’s Teaching Style Inventory to determine their predominant teaching style. Reading achievement scores used were the teachers’ class average, spring 2003; reading percentile results as measured by the state required Stanford 9 Achievement Test (SAT9). This study found no significant effect of teacher certification status on student reading achievement. The predominant teaching style for these charter school teachers was Facilitator, as indicated by scores on the Teaching Style Inventory. There was no significant correlation between teaching style and teachers’ class average percentile reading achievement scores as measured by the SAT9. The findings of this study suggest that there appears to be no need for the NCLB Act to require certification for Arizona charter school teachers and that growth in student achievement scores, as required by NCLB, will rely upon identifying variables other than teacher certification status or teaching style.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Background of the Study</td>
<td>3</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>8</td>
</tr>
<tr>
<td>Statement of Null Hypotheses</td>
<td>8</td>
</tr>
<tr>
<td>Professional Significance of the Study</td>
<td>9</td>
</tr>
<tr>
<td>Overview of Methodology</td>
<td>12</td>
</tr>
<tr>
<td>Delimitations</td>
<td>14</td>
</tr>
<tr>
<td>Definitions of Key Terms</td>
<td>16</td>
</tr>
<tr>
<td>Literature Review</td>
<td>18</td>
</tr>
<tr>
<td>Historical Development of the Charter School Movement</td>
<td>19</td>
</tr>
<tr>
<td>Charter Schools Defined</td>
<td>20</td>
</tr>
<tr>
<td>Functionality of Charter Schools</td>
<td>22</td>
</tr>
<tr>
<td>Success of Charter Schools</td>
<td>24</td>
</tr>
<tr>
<td>Charter School Laws</td>
<td>26</td>
</tr>
<tr>
<td>Charter School Teachers</td>
<td>27</td>
</tr>
<tr>
<td>Teacher Certification</td>
<td>28</td>
</tr>
<tr>
<td>No Child Left Behind</td>
<td>34</td>
</tr>
<tr>
<td>Student Achievement</td>
<td>38</td>
</tr>
<tr>
<td>Effective Teaching</td>
<td>40</td>
</tr>
<tr>
<td>Teaching Styles</td>
<td>42</td>
</tr>
<tr>
<td>Conclusion</td>
<td>48</td>
</tr>
</tbody>
</table>
References ......................................................................................................................... 85

Appendix ........................................................................................................................... 93

A. Permission to use Teaching Style Inventory ............................................................ 93
B. Grasha’s Teaching Style Inventory ........................................................................ 94
C. Teaching Style Inventory Score Sheet .................................................................. 97
D. Analyzing Teaching Style Inventory .................................................................. 98
E. Informed Consent Agreement ............................................................................... 99
F. History of School Contacts .................................................................................. 101
G. Thank You Note Sent to Principals .................................................................. 102
H. Letter to Announce Gift Certificate Winner ..................................................... 103
Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Subjects' Teacher Certification Status</td>
<td>64</td>
</tr>
<tr>
<td>2. SAT9 Reading Percentile Range and AZ Teacher Certification Status</td>
<td>67</td>
</tr>
<tr>
<td>3. Subjects' Predominant Teaching Styles</td>
<td>69</td>
</tr>
<tr>
<td>4. Teacher Certification Status and SAT9 Reading Percentile Scores</td>
<td>73</td>
</tr>
<tr>
<td>5. Teaching Style and SAT9 Reading Percentile Scores</td>
<td>75</td>
</tr>
</tbody>
</table>
# Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Subjects’ Teacher Certification Status</td>
<td>65</td>
</tr>
<tr>
<td>2. Subjects’ Predominant Teaching Styles</td>
<td>70</td>
</tr>
</tbody>
</table>
1. Introduction

Forty-six years ago the Soviet Union launched Sputnik, and an ungrateful nation blamed schools for letting the Russians reach space first (Bracey, 2002a). In reaction, school districts strategized how to improve student achievement in science and math. However, perhaps due to cultural effects, such as the Civil Rights Movement, assignations of American leaders, recreational drug use and the Vietnam War, student achievement scores were said to be declining. By 1981, in response to widespread public perception that something was seriously lax in America’s educational system, Secretary of Education, T.H. Bell, created the National Commission on Excellence in Education and directed it to examine the quality of education in the United States (National Commission on Excellence in Education, 1984).

The status of the American public school system became common knowledge with the publication of the 1983 National Commission on Excellence in Education’s report, A Nation at Risk. Analyst Paul Copperman concluded that for the first time in America’s history, the educational skills of one generation would not surpass, would not equal, or even approach, those of their parents (National Commission on Excellence in Education, 1984). The concept of school restructuring and reform was unleashed and yet, 20 years later, America’s public school districts were still searching for the means to assure improved student achievement.

Charter schools developed during the restructuring phase of many attempts to improve student achievement in America’s schools. As a form of public school, charter schools were an answer to school choice. President Clinton, in his 1997 State of the Union Address claimed the right to choose would foster competition and innovation that
can make public schools better (Mondale & Patton, 2001). The notion of allowing parents to choose where children would attend school continued to spark debate. Still, supporters of charter school choice hoped that district schools would become motivated to reform as they competed for students (Mondale & Patton, 2001).

The most recent attempt to reform America's public schools is The No Child Left Behind (NCLB) Act signed by President George Bush in January 2002. The expressed goals of NCLB are to place a highly qualified teacher in every classroom, administer annual achievement tests to all third through eighth grade students, and to raise student performance to grade level. The NCLB Act, and questions it generated, provided the impetus for this study.

Three questions spurred the development of this study. First, was there any evidence that the NCLB Act would improve student achievement scores by mandating state certification of all those teaching in public schools? Secondly, should charter schools remain free from many district school regulations on the premise of showing growth on students' achievement test scores? Third, what was the key to improved student achievement that public schools had been searching for since the launch of Sputnik? Motivated to answer these questions and narrow the field of variables that correlated with student achievement, this study was undertaken.

Therefore, this dissertation is a report of a quantitative study conducted to determine if there was a significant effect of teacher certification status on student reading achievement, and compare that outcome to the significance level of the relationship between teaching style and student reading achievement found in Arizona charter schools.
The research examined the effect of an individual teacher's certification status at the beginning of the 2002-2003 school year on the average reading percentile score of the teacher's class on the Stanford 9 Achievement Test (SAT9). Participating teachers also completed Grasha's Teaching Style Inventory to determine a predominant teaching style. Each teacher's total Likert scores, from Grasha's Teaching Style Inventory, were correlated with the teacher's class average reading percentile scores on the SAT9. A minimum of 30 subjects was necessary to execute this study, as per Gay and Airasian's (2003) parameters for correlational research.

This first chapter of the dissertation contains six components. Presented first, is the background of the study. This includes a discussion of the external factors that might have influenced the study, educational events that might have affected the study, and an explanation concerning the potential of this study to contribute to the educational knowledge base. The second and third components specify the problem of the study and describe its significance. The research question and two null hypotheses to be accepted or rejected at the study's end are stated. In addition, the professional value of this research is discussed. Fourth, an overview of the methodology used is explained. The fifth component states the delimitations of the study, and finally, definitions of key terms, used within this study, are defined.

Background of the Study

At this point, brief descriptions of external factors that were occurring, and that might have influenced this study, are reviewed. This section concludes with an explanation as to why this study contributed to the educational knowledge base.
There were societal developments, or changes in society, causing the issue of teacher certification to seem important. First, it was a time when many publics were of the opinion that public schools were failing. Parents had charged, via lawsuits, that the schools had not done their job if students could graduate without the ability to read (Santos, 2003).

At the time of this study, when compared with national norms, Arizona school children performed poorly on standardized tests. Schools in poor socioeconomic areas had high dropout rates and illiterate students had graduated from high school. In a response, Arizona Superintendent of Instruction, Tom Horne, said the bar must be raised in Arizona’s schools, and never again would a student in Arizona graduate who could not read his diploma (Stevens, 2004). With regard to high school graduation rates, Civic Report 31 ranked Arizona 47th among the 50 states, stating that 59% of Arizona’s high school students graduate (Greene & Forster, 2003).

In the early 1990’s, the charter school concept was developed out of a desire for school choice and in 1991 the first charter school laws were enacted in Minnesota. President Bill Clinton supported choice within the public school system, thus helping the charter school movement to advance. Charter school legislation varied from state to state. However, in Arizona, charter schools received a blanket exemption from most state policies. This freedom from bureaucratic rules was an attractive component to Arizona’s charter school development. Arizona became the forerunner among states issuing charters and, at the time of this writing, had more charter schools than any other state with 464 charter schools, employing 2,900 teachers that served 71,000 students.
Many charter school advocates claimed that without the bureaucracy of traditional public school regulations, school administrators and teachers were free to meet the needs of their students and, with needs met, students had a greater opportunity to improve achievement levels. An opposing view was that public tax dollars were being taken away from district schools, just when monies were needed for programs and the additional hiring of teachers in order to improve student achievement levels, by reducing class size. Consequently, at the time of this study, charter schools, their effects on student achievement, and the value of charter schools in public education were subjects of controversy.

Intellectual or philosophical movements, which provided a special context for the study, were also occurring. A recurring thread, dating as far back as the 1950’s with economist Friedman, was the notion that schools would only improve if they experienced competition. In 1990 political scientists, Chub and Moe claimed that a free market in education would promote student achievement. Therefore, charter schools as an alternative to district schools provided the desired competition with public school district monopolies. At first district schools did not pay much heed to the loss of students. However, a decade later, the largest public school district in Arizona, began to run ads to lure parents to enroll students in the district schools versus the neighboring charter schools (Jacoby, 2000).

A major development in the field of education that made this study worth pursuing was the NCLB Act of 2001, enacted in January 2002, by President George Bush. The NCLB Act mandated that every public school, including charter schools, must have a highly qualified teacher in every classroom. An interesting component to the
NCLB Act was the definition of highly qualified. A highly qualified district school teacher was defined as one who held a bachelor's degree, had an Arizona teaching certificate, and who demonstrated competency in a chosen subject area on a state teacher proficiency test. However, in charter schools, state law superceded the certification requirement of the NCLB Act. In the case of three states including Arizona, and the District of Columbia, state law did not require charter school teachers to be certified. Prior to NCLB, Arizona charter school teachers were not required to possess a high school diploma. However, charter school teachers unexpectedly had to meet the aspect of the NCLB Act, which mandated that public school teachers hold a bachelor’s degree. Therefore, a highly qualified Arizona charter school teacher, according to the NCLB Act, was one who held a bachelor’s degree and, due to prior state law, was not required to hold an Arizona teaching certificate, but was able to demonstrate competency in a chosen subject area on a state provided test.

Would charter school administrators be prudent to require teacher certification for teachers? Specifically, the purpose of the study was to determine if there was a significant effect of teacher certification status on student reading achievement, and to compare that outcome to the significance level of the relationship between a second independent variable and student reading achievement. In the case of this study, teaching style served as the second independent variable because teaching style represented an integral component of the student learning experience.

In conclusion, the findings presented in this study might contribute to the educational knowledge base. Charter schools, not only in Arizona, but also across the country, were required to meet the requirements of NCLB by the end of the 2005-2006
school year. There were, however, three states (including Arizona) and the District of Columbia that had charter laws stating that charter school teachers did not need state teacher certification. These laws would supercede the NCLB mandate that required all public school teachers to be certified. In addition, the NCLB Act mandated that after the 2002-2003 school year, newly hired teachers in charter schools that received Title I funds must already meet the highly qualified definition. The NCLB Act created financial problems for charter schools and their uncertified, or unqualified, teachers who could teach under state charter law. One dilemma was who would pay for additional coursework for under-qualified teachers. Charter schools were already operating under tight budgets and teachers’ salaries did not provide much discretionary income to pay for unexpected college tuition bills. Moreover, although Title II provided funds to school districts to improve training and development, hire new educators, and retain highly qualified teachers. These funds were not enough to cover the additional expenses incurred due to NCLB. Arizona anticipated that the NCLB Act would cost the state 108 million dollars just trying to meet the federal requirements of standardized testing in order to document student achievement. Federal monies would only cover half of that figure, according to the U.S. General Accounting Office Report. The National Education Association (NEA) had indicated that the federal government should be responsible for funding the new educational mandate. In July 2002 the NEA said it would sue the federal government for under-funding the law (Kossan, 2003c). One may question the idea if public federal and/or state tax dollars should fund education courses for under-certified and/or under-qualified charter school teachers. The NEA of New York claimed that the federal government failed to adequately fund the new NCLB Act and thus undermined
the state and local governments' ability to find ways to attract qualified teachers into
joining and staying in the profession, modernize existing schools and build new ones, and
provide students with the programs, materials and books they needed to meet the high
standards envisioned by the new law (National Education Association of New York,
2003). In addition, in an era of teacher shortages, highly qualified teachers would, most
likely, become more difficult for district and charter school administrators to secure.

This study sought to determine whether there was a significant effect of charter
school teacher certification status on student reading achievement scores. In addition, this
study measured whether the correlation between charter school teachers’ teaching styles
and student reading achievement was significant, thus providing data to charter school
administrators when selecting new hires.

Statement of the Problem

Is there a need for the NCLB Act to require certification for Arizona charter
school teachers, or, will this study show that teacher certification status has no effect on
student reading achievement? Furthermore, will this study show that teacher certification
status will have less of an effect on student reading achievement than teaching style?

Statement of Null Hypotheses

1. There is no significant effect on student reading achievement scores of charter
school students who received instruction from a certified teacher and charter school
students who received instruction from a non-certified teacher.

2. There is no significant relationship between student reading achievement scores
of charter school students who received instruction from a teacher who used one teaching
style and charter school students who received instruction from a teacher who used a
different teaching style.

*Professional Significance of the Study*

This study was developed to extend existing knowledge on variables that affected
student reading achievement and influence prevailing beliefs held by district school
educators and teacher’s union association leaders regarding the effects of charter school
teachers’ frequent lack of certification.

At the time of this writing, it was an era in education when accountability and
measurable growth in student reading achievement were focal points of federal, state,
local, and district educational publics. Since the publication of the 1983 National
Commission’s Report, *A Nation at Risk*, the quality of the American educational system
had been under scrutiny. Schools that received Title I federal funds were required to
document student growth each year. However, should no substantial improvement in
student achievement scores on standardized tests be reached, schools were in jeopardy of
loosing Title I funding. In January 2002, when President George Bush signed the NCLB
Act, all public schools had to begin to determine how teachers could reach all students in
order to have all schoolchildren achieving at grade level within 12 years. The public
posting of results on standardized achievement tests tracked the success or failure of each
public school.

Reading companies marketed their reading programs to schools indicating that
student growth in reading achievement depended on following the format of the program
and use of the suggested books. The federal government, through Title I grants, attempted
to improve reading scores by implementing Reading First, Early Reading First, Even
Start, and other research based comprehensive school reform programs. School districts needed to send and continue to send teachers to workshops to learn more effective reading strategies.

Some school districts attempted to award merit pay to teachers who showed the most improvement in student reading achievement scores. Despite the fact that Recommendation D in *A Nation at Risk*, suggested performance based salary increases some educators were concerned that teachers would be tempted to teach to the standardized test to assure themselves the additional monies. Teaching to the test was an area of ethical debate among educators.

Independent companies provided learning centers that were open for after school or for weekend tutoring as an alternative opportunity to help students improve reading skills. It was a time when the American public had concerns that the public school system was failing and students would not be prepared to compete in a global market. Therefore, by conducting this study to extend existing knowledge on variables that affected student reading achievement, administrators would have more information as they discussed the best qualifications to require of new teachers.

In addition, this study was professionally important because of its potential to change prevailing beliefs of many educators and teachers’ union leaders with regard to the relationship between teacher certification and effective teaching. Teachers’ unions were adamant in their struggle to insure that every state required all teachers to be certified. Arguments ensued that it was not enough for an educator to know subject matter. Unions, as well as teacher preparation programs at colleges and universities, were insistent that educators have knowledge about how students learn and how to teach, thus
involving teaching style. Teaching style definitions varied from listings of specific behaviors to global personality characteristics. Although there were researchers who did analyze teaching style, learning style, and student achievement, there were also educators, policy makers, the media, and the public who tended to equate teacher quality with teacher certification.

Even though only approximately half of Arizona’s charter school teachers held state-issued certification (Kossan, 2003a) charter schools had shown growth in student achievement levels. According to the Center for Education Reform (CER), Arizona charter schools showed that growth in a student’s achievement level tended to correspond to the length of time enrolled in a charter school. In addition, the CER noted that based on the SAT9 math and reading tests, 17 out of the state’s 25 highest performing elementary and middle schools were charter schools (Center for Education Reform, 2003b).

In conclusion, this study investigated if there was a significant effect of teacher certification status on student reading achievement. These results had the potential to change the beliefs of charter school advocates that claimed fewer regulations, specifically with regard to teacher certification, permitted teachers to meet student needs and ensured greater student academic growth. In addition, a significant effect of teacher certification on student reading achievement might have caused state education officials to reconsider views that charter school teachers did not need certification. This study also determined the significance level of the relationship between a second variable, teaching style, and student reading achievement, and if this relationship were significant, it would help educators narrow the field as to which variables showed a relationship with student
achievement. Therefore, this study had the potential to produce results that might have changed the prevailing beliefs of a particular group of educators and encourage closure to the ongoing dispute regarding the need for teacher certification, as well as revealed the significance of teaching style as a variable an administrator might want to consider when hiring new teachers.

**Overview of Methodology**

This section provides the reader with a brief explanation of this study's methodology. This overview is for the reader's convenience in order to form a basic understanding of the research methodology used to reject or accept the null hypotheses.

This study was quantitative, designed to analyze the effect and/or the relationship between two or more variables, using significance levels, known as alpha levels. The purpose of the study was to determine if there was a significant effect of teacher certification status on student reading achievement, and to compare that outcome to the significance level of the relationship between teaching style and student reading achievement. This quantitative study used convenience sampling. Convenience sampling is a non-random sampling procedure, most used in educational research (Gay & Airasian, 2003). Convenience sampling utilizes volunteers and existing groups. In this study, the existing groups were Arizona Charter School Association (ACSA) members who attended the state's annual three-day conference and also ACSA members who attended monthly luncheons. It was from these groups of educators that principals, both in group settings and individually, were orally issued invitations to participate in this study. The teachers in participating charter schools were requested to volunteer their time and complete a teaching style inventory. To meet the necessary criteria for this study the
teacher volunteers were charter school teachers who taught grades third through sixth, during the 2002-2003 school year and had returned to the same charter school for the 2003-2004 school year in an Arizona charter school that received Title I funds. Arizona’s Department of Education Grant’s Management link, found on the state’s Department of Education Website, was used to confirm that the charter schools used in this study received Title I funds during the 2003 fiscal year. Charter Schools that received Title I federal funds were selected for this study because Title I schools needed to meet the NCLB requirements or risk losing those federal monies. When a principal indicated no interest in participating in this study, another charter school principal was asked to participate and in turn, the teachers of that school were asked to volunteer their time and complete a teaching style inventory. The desired sample size was no less than thirty subjects. Therefore, the sampling procedure described above continued until reaching a minimum of 30 qualified subjects.

In order to examine the effect of teacher certification status on student reading achievement it was necessary to discover which teachers held an Arizona teaching certificate at the beginning of the 2002-2003 school year. Arizona state law required that each charter school keep a file, or binder, in which one could locate the teachers’ qualifications and educational background. However, to expedite efficiency, reliance was placed upon the subject to verbally indicate if an Arizona teaching certificate was held at the beginning of the 2002-2003 school year. The teacher’s class average reading percentile score, from the SAT9 spring 2003 test, was kept in the charter school’s office. By obtaining principal permission to review class average SAT9 scores, it was possible to analyze the effect of teacher certification status on student reading achievement. No
individual student's SAT9 results were viewed, thus parental permission was not necessary.

In order to determine the significance of the relationship between teaching style and student reading achievement, each subject completed Grasha's Teaching Style Inventory (1991). The seven Likert response choices ranged from strongly disagree to strongly agree, including an option of neither disagree or agree, and these responses were compiled to reveal a single score, which indicated the teacher's teaching style. Grasha's five teaching styles were identified as Expert, Formal Authority, Personal Model, Facilitator, and Delegator. The literature review section of this dissertation describes these teaching styles in more detail. The reading achievement scores of students used were class average reading percentile scores recorded for the spring 2003 SAT9.

Chapter 3, the methodology section of this dissertation discusses the specifics of each of the instruments used with regard to validity and reliability. In addition, the methodology section contains much more information regarding the subjects, the instruments, software used in this quantitative design, the procedure used, and data analysis of this study.

Delimitations

The boundaries of this study were Arizona charter schools in which principals volunteered their school and staff's involvement. Other state charter school laws might not match Arizona's with regard to teacher certification, thus limiting the generalizability.

Another influence to the generalizability of this study's results was the method of sample selection or convenience sampling. Convenience sampling is a non-random
sampling procedure, which involves the use of volunteers and existing groups, and is most used in educational research (Gay & Airasian, 2003). However, the use of nonrandom sampling methods makes describing the population from which a sample was drawn difficult. As in the case of this study, reliance on convenience sampling, demographics of sample schools, and the persona of volunteering teacher-subjects might have skewed the data. Furthermore, this nonrandom sampling procedure might not be representative of potential results found if all Arizona charter schools were subjects in this study. Therefore, a different selection of subjects might yield a different set of results.

In addition, Grasha’s Teaching Style Inventory was normed with college faculty. Yet, the five teaching styles included in Grasha’s Teaching Style Inventory, were characteristic of teachers in general. Grasha stated “Everyone who teaches possesses each of the five teaching styles to varying degrees” (Grasha, 2001, p. 153). The fact that a given teacher might teach with the teaching style of an Expert, one who had Formal Authority, one who used Personal Model, a Facilitator, or, a Delegator did not appear to be grade level sensitive. The teachers’ results found in this study of Grasha’s Teaching Style Inventory should become the catalyst to spur future researchers to develop a normed instrument to measure teaching styles which could be generalized to a greater population of teachers.

A final limitation of this study was the time frame. Results for the SAT9 administered in spring 2003 were available to the public by July 2003. The teachers in this study completed Grasha’s Teaching Style Inventory during the fall of 2003. However, since teaching styles are part of one’s personal make-up (Grasha & Yangarber-
Hicks, 2000), teaching style would not be expected to substantially change from spring 2003 to fall 2003.

Definitions of Key Terms

*Charter school:* a public (not private) school of choice that is freed, by the state, from bureaucratic regulations, normally found in district schools, in exchange for greater accountability. Charter schools and district schools are open to the public, paid for by the public, and accountable to the public.

*Teacher certification:* formal approval (by the state) that a teacher has met all of the state’s requirements for teacher preparation. State officials count course titles on college transcripts and require an applicant to pass a state examination.

*Teaching Style:* the personal, stylistic quality (of a teacher) used in a classroom. Five styles and definitions, as defined by Grasha (1991) are as follows:

- **Expert:** possesses (and displays) knowledge and expertise that students need and challenges students to enhance their competence. Concerned that students are well prepared.

- **Formal Authority:** possesses status (among students) because of knowledge and role as a faculty member. Concerned with learning goals, positive and negative feedback, and rules of conduct.

- **Personal Model:** believes in (and teaches by) personal example. Encourages students to observe and emulate instructor’s approach.

- **Facilitator:** guides and directs (students) by asking questions, exploring options, and suggesting alternatives. Strives to develop students’ capacity for independent action, initiative, and responsibility.
- *Delegator:* concerned with developing (students') capacity to function in an autonomous fashion. Students work independently on projects as teacher is available as a resource.
2. Literature Review

Charter schools, in the realm of educational history, were in their infancy stage during this writing. Due to the charter school movement's relative newness to the field of education, this chapter provides the reader with the historical background of charter schools and, in addition, the reader will find an accounting of how a charter school actually functioned, the success of charter schools, and who taught at these new public schools of choice. Arizona charter school teachers did not need to possess a teaching certificate. In fact, until the NCLB Act, Arizona charter school teachers did not need a high school diploma. This chapter includes a discussion of NCLB and its impact on charter schools.

Research correlating teacher certification to student achievement exists, yet the value of teacher certification is an ongoing debate among researchers and educators. Moreover, research presented by Ballou and Podgursky (2000) in addition to research presented by the United States Department of Education provides examples that show American College Testing (ACT) scores, vocabulary scores, and results on a test of basic literacy correlate positively with student achievement.

The field of teaching styles developed by prominent researchers was explored and it was this variable, teaching style, that was used as a second variable in this study to answer the research question: Is there a need for the NCLB Act to require certification for Arizona charter school teachers, or, will this study show that teacher certification status has no effect on student reading achievement? Furthermore, will this study show that teacher certification status will have less of an effect on student reading achievement than teaching style?
Historical Development of the Charter School Movement

A desire for choice fueled the charter school movement. The belief in educational choice dates back to the 1950s when economist Friedman blamed the poor quality of public education on the lack of competition and advocated the use of school vouchers (Spring, 1994). Two political scientists, Chub and Moe, voiced the opinion that schools controlled by competition in a free market had less bureaucracy and, consequently, promoted student achievement (Spring, 1994).

Until 1991, there was no such entity as a charter school. A public agency granted charters to a group of parents, teachers, school administrators, organizations, or businesses that wished to provide choice within the public school system (Weil, 2000). Charter school advocates argued that charter school legislation and the development of local charter schools would stimulate competition and raise educational standards throughout public schools (Weil, 2000). It was theorized that once schools were free of bureaucracy creativity would bloom, energy would deploy, and learning would soar. In 1991, Minnesota enacted the first charter school law (Bracey, 2002b) and charter schools became a rising competitor of district schools (Fusarelli, 2002). In fact, at the time of this writing, charter schools were the fastest growing educational movement in America (Jacoby, 2000). While the first such school opened in 1992, by 2003 there were 2,700 schools serving almost 700,000 students nationwide (U.S. Department of Education, 2003).

Arizona, also known as the Grand Canyon of charter states (Finn, Manno, & Vanourek, 2000), had, at the time of this writing, 464 charter schools (U.S. Charter
Schools, 2003), with an estimated 2,900 teachers, according to the U.S. Education Department, which served more than 71,000 students (Winter, 2003). Due to its aggressive approach, Finn et al. (2000) termed Arizona as the wild west of the charter movement. In addition, according to the CER, Arizona ranked first among all states with regard to the strength of charter laws. The CER stated that, strong laws were those that fostered the development of numerous, genuinely independent charter schools that served a wide array of children. Weak laws provided little chance for growth of charters outside existing education structures (Center for Education Reform, 2003a). In Arizona, applicants could obtain charters from multiple sources and the charters were granted for three times the usual length (Finn et al.). Therefore, the term of an Arizona charter school contract was fifteen years (Arizona Department of Education, 2003c). In Arizona, choice continued to be a central element behind the charter movement. The Arizona State Board of Charter Schools developed the mission statement: “To improve student achievement through market choices” (Arizona State Board for Charter Schools, 2003, pg 95).

*Charter Schools Defined*

Charter schools are state funded public institutions not administered by local school districts. Autonomous groups, or individuals who wanted more control over the education process, were the charter holders for charter schools (Jacob, 2000). Teachers, social workers, parents, or school administrators started more than 70% of Arizona charter schools (Maranto, 2003). These independent public schools of choice were public in every way – they were open to the public, paid for by the public, and accountable to the public (Thomas B. Fordham Foundation, 2002). Because charter schools were publicly accountable, they were not private schools (Weil, 2000). In exchange for greater
student achievement, many of the traditional rules and regulations governing district schools (U.S. Department of Education, 2003) did not bind these public schools of choice. Regulation for charter schools was market discipline, which meant giving parents the ability to choose where their children went to school (Maranto, 2003). Charter school founders reasoned that by eliminating bureaucratic regulations, they would be able to produce higher results with regard to student achievement (Thomas B. Fordham Foundation Home Page, 2002). Although legislation varied from state to state, independence for greater student achievement summarized the idea and Arizona charter schools received blanket exemption from most state rules (Quiram, Rein, & Jacobs, 1998). For example, according to the Arizona Department of Education, charter schools were exempt from all statutes and rules pertaining to schools, governing boards and school districts except for specified areas that covered topics such as safety, health, civil rights, children with disabilities, financial requirements, and methods to measure pupil progress (Arizona Department of Education, 2003a). In addition to providing academic choices for parents and students, charter schools were designed to provide a learning environment that would improve pupil achievement (Arizona Department of Education, 2003c). Charter schools were more popular than other school choice methods. There were four reasons why this was so. First, charter schools had to be nonsectarian (Nathan, 1996). Secondly, charter school legislation did not allow participating schools to choose among applicants (Nathan, 1996). This was because charter schools received public money and could not legally discriminate or exclude students (Weil, 2000). Third, charter schools could not charge tuition. Finally, there was explicit responsibility for documented student improvement (Nathan, 1996).
Functionality of Charter Schools

In Arizona, holders of charter schools contracted with the State Board of Education, the State Board for Charter Schools, or the governing boards of school districts to provide educational service (U.S. Charter Schools, 2003). According to Lori Damanti, at the Arizona Department of Education’s school finance unit, there was not a lot of difference among the sponsoring agencies. Charter schools sponsored by either board were funded directly by the state. The school district funded district sponsored charter schools. The state funded the district and the district then funded their charter school. Charter schools sponsored by either board could be located anywhere within the state. Originally, districts could only sponsor a charter school that resided within their district boundaries. However, that changed and districts now could sponsor a charter school anywhere in Arizona. Whichever entity sponsored a charter school had administrative oversight of that school (L. Damanti, personal communication, November 17, 2003).

Generally, the charter holder of each charter school must operate the school, or hire an administrator to do so, as well as lease or buy a building, with allocated dollars, whereas district schools only had to finance their educational programming with the same funding (Geiger, 1998). State approved charter schools received funds directly from the state based on the state funding formula for all schools (U.S. Charter Schools, 2003). In Arizona, if the state sponsored the charter school, state and federal funds flowed from the state to the school, and the amount was not subject to negotiation (Quiram et al., 1998). If a district sponsored the charter school, federal, state, and local funds flowed through the district to the school (Quiram et al.). The amount of per pupil funding was equal to at
least the average cost per pupil for the district as a whole (U.S. Charter Schools, 2003). Arizona per pupil funding averages equated to charter schools receiving approximately 25% less per pupil, than district schools, and receiving no capital funding from the state (Maranto, 2003).

Each charter school developed a mission and believed in a certain teaching philosophy or a combination of philosophies, which one could learn more about by viewing weekly lesson plans or reading the curriculum portion of the charter (Arizona Department of Education, 2003c). Charter schools implemented a program of instruction by utilizing unique and innovative ideas and methods to meet their education goals (Arizona Department of Education, 2003c). Parents were encouraged to learn if these methods were best suited for their child by considering what specific teaching techniques and strategies were used and the qualifications of the teaching staff (Arizona Department of Education, 2003c). Although specific goals were set forth in the charter, it was up to the individuals in the schools to determine how they were going to meet said goals. If a school failed to meet the goals, the charter was either revoked, as in cases of mismanagement, or not renewed. District schools did not practice this form of accountability (Seder, 1997). To show accountability to the public, Arizona charter schools had to participate in the nationally standardized, norm referenced achievement test, the SAT9, and the Arizona Instrument to Measure Standards (AIMS) test (Arizona Department of Education, 2003c). Each charter school also was required to meet state standards (Weil, 2000) and submit an annual report card for the State’s Department of Education and one for the sponsoring board (Arizona Department of Education, 2003c).
Education reformers were mainly interested in whether charters boosted pupil achievement (Finn & Kanstoroom, 2002). However, according to Howard Gardner, Professor of Cognition and Education at Harvard Graduate School of Education, the charter school movement would not solve the country’s educational problems (Scherer, 1999). Gardner conceptualized that charters suffered from two flaws: chaos and the eventual lack of charisma. Chaos was eminent with thousands of loosely regulated schools each doing what it wanted and once the energy and commitment of the school’s founders dissipated, charisma would be lost. It was unlikely that others would maintain that high energy level, even in the case of a school that had been working reasonably well (Scherer, 1999).

Success of Charter Schools

Vocal parents expressed frustration with the kinds of learning offered by district schools, the type of instruction and strategies that were employed, such as fill in the blank worksheets, and the lack of motivation among many of the teachers in these schools (Weil, 2000). Based on the Green Method, which compared enrollment data and diploma counts collected by the U.S. Department of Education’s common core of Data, the national average of students who graduated from public high schools was 70%, with a range of 55 to 87% among states (Greene & Forster, 2003). Also using the Greene method, Arizona had a 59% rate of gradation (Greene & Forster, 2003). This figure represents both district and charter school high school graduates.

Yet, despite overall low graduation rates in Arizona, charter school students, parents and teachers were very satisfied with their new schools and chose to associate with them for academic reasons (Thomas B. Fordham Foundation, 2003). Students were
surveyed at 39 charter schools in 10 states (N = 4,954) with results indicating that 62.5% of charter school students, who previously attended public schools, viewed their charter school teachers more favorably (Finn et al., 2000). Moreover, in February 1997, Finn et al. surveyed parents from 30 charter schools across nine states (N = 2,978). The survey indicated that 56.6% of charter school parents, representing all income levels, were very satisfied with the quality of teaching in their child’s charter school. With regard to Arizona charter schools, Finn et al. quoted Mulholland, Arizona Charter School Progress Evaluation, page 11, stating that “Fifty-five percent of charter parents reported that their child was doing a lot better than in his or her previous school and another 24% say a little better.” In the same document, page 42, Arizona charter teachers revealed that they were quite satisfied with their charter school (Finn et. al., 2000). Solmon, Garcia, and Paark’s 2001 study, for the Goldwater Institute, analyzed data for 60,000 district and charter school students and concluded that the longer children were in a charter school, the higher their achievement scores rose. (Solmon, Paark, & Garcia, 2001)

Assessing the academic performance of charter schools was difficult because the charters permitted said schools to designate their target population (Greene, Forster, & Winters, 2003). However, the charter school must fill openings with any student from that target population. After reaching capacity, schools implemented a lottery system to determine student selection. When researchers attempted to draw comparisons among targeted charter schools and district schools, it was, in essence, like comparing contrasting entities. Therefore, there were few reliable research findings regarding academic quality comparisons of charter schools and district schools (Greene et. al, 2003). In Greene’s empirical study of charter schools, untargeted charter schools serving
a general population were compared to the nearest district school. In Arizona there were small positive effects on the SAT9 scores and small negative effects on the AIMS scores (Greene, 2003). In conclusion, Greene found weak and mixed results, and made no statistically significant findings (Greene, 2003).

However, strong parental satisfaction reports and promoted higher SAT9 scores, regardless of the level of significance, had an effect on the largest school district in Arizona where twenty charter schools in this district had enrolled more than 5,000 students. This public school district thus began running ads to try to win some students back (Jacoby, 2000).

**Charter School Laws**

For eight years, the CER ranked the strength or weakness of each state’s charter laws. The CER defined strong laws as those that fostered the development of numerous, independent charter schools serving a wide array of children. To the contrary, weak laws were defined as those that provided little chance for the growth of charters outside preexisting educational structures (Center for Education Reform [CER], 2004). Furthermore, the CER determined ten areas of potential regulatory strengths, including four areas or criteria of particular interest to this present study. First, strong laws permitted the creation of an unlimited or substantial number of charter schools each year. Second, the strong laws permitted multiple entities to authorize new charter schools. Third, a strong law authorized a variety of applicants, including individuals from inside and outside the school system, to charter autonomous schools. A final characteristic of a strong charter law was one that provided automatic waivers from the majority of state and district education laws, regulation, and policies (CER, 2004). In contrast, the weak
Charter laws were identified as those that limited the number of charter schools that could open each year, allowed one entity to authorize new charter schools, required that charter applicants be from within the educational system, and demanded adherence to district laws, regulations, and policies (CER, 2004). Moreover, the CER concluded that weak charter school laws constricted operations, imposed administrative burdens, stifled creativity and due to heavy reliance upon existing education rules, often impeded the success of charter applicants and charter operations (CER, 2004).

The CER ranked Arizona highest in charter law strength and determined that academic student achievement and strength of charter school law were directly correlated. The CER study revealed that two-thirds of the 26 strong-law states saw significant gains in student achievement in test results and NCLB data during the measured two-year period. In contrast, the CER study found that only two states, operating under weak charter laws, had produced gains in student achievement (CER, 2004).

Charter School Teachers

In all eight consecutive years of charter law ranking, the CER identified Arizona as the state with the strongest charter laws (M. Heize, personal communication, February 12, 2004). Arizona’s charter laws provided waivers from many state regulations, including those regulations governing teacher qualifications. This gave Arizona’s charter school principals the freedom to hire whom they liked, including people without conventional certification (Finn et al., 2000). In Arizona, many Charter school administrators believed the best teachers included those who lacked state certification (U.S. Department of Education Office of Postsecondary Education, 2002). Arizona,
Texas, Georgia, and the District of Columbia enacted charter school legislation that clearly stated that teachers did not have to be certified (Education Commission of the States, 2003). Many charter schools looked beyond the pool of certified teachers and sought qualified candidates from outside the educational system (Thomas B. Fordham Foundation, 2003). Jane Glickman, U.S. Education Department spokesperson, stated that Arizona let anyone teach in charter schools, even without a high school diploma or a license to teach. Arizona State officials estimated that approximately half of the teachers in charter schools met the NCLB federal requirements, regarding the mandate for teachers to be highly qualified (Kossan, 2003a). Arizona charter school principals enjoyed wide latitude in deciding whom to hire, or fire, but also whom to retain and promote, as well as how much to pay them (Thomas B. Fordham Foundation, 2003). Since charter schools did not operate under the same constraints as district schools with regard to hiring and firing, they were able to make tough choices, such as firing a teacher who just was not performing (Jacoby, 2000). Individuals who knew their subject matter well, knew how to convey it to children, and had sound character, should have been eligible to teach in charter schools, whether or not they had certain courses listed on educational transcripts (Thomas B. Fordham Foundation, 2003).

Teacher Certification

To teach in district schools, every state required that teaching candidates obtained formal state approval, a process known as teacher certification or licensure (Abell Foundation, 2001). State officials reviewed and counted course titles on college transcripts to verify that state requirements for teacher preparation had been met successfully (Abell Foundation, 2001). Yet, no evidence suggested that possessing
content knowledge alone was sufficient to be an effective teacher (Kaplan & Owings, 2003). To obtain a provisional elementary teaching license in Arizona, teachers had to take 45 hours of education courses with at least eight weeks of practice teaching (U.S. Department of Education Office of Postsecondary Education, 2002). States also used a variety of different examinations; one of the more common was the Praxis Pre-Professional Skills Test (PPST), which evaluated prospective teachers in the areas of math, reading and writing. However, frequently states set the passing rates, or cut scores, on certification tests well below national averages. Virginia was the only state that set cut scores at or slightly above the 50th percentile. All other states that used this test set the cut score below the 50th percentile and 15 of the 29 states set passing rates below the 25th percentile. Nine states set cut scores below the 20th percentile. On the writing portion, Maine set its passing rate at the 6th percentile level, which meant that 94% of individuals who desired licensure in Maine would pass that portion of the test (U.S. Department of Education Office of Postsecondary Education, 2002). Even though 29 other states used the PPST, Arizona did not (U.S. Department of Education Office of Postsecondary Education, 2002). The Arizona Educators Proficiency Assessment (AEPA) was the exam used in Arizona to determine an applicant’s proficiency. AEPA test results ranged from 100 to 300, with 240 representing a passing score. However, the Arizona State Board of Education did accept passing scores from other states’ tests (Arizona Department of Education, 2003b). States managed to create a system that condoned both low standards, such as pass scores on the PPST, and high barriers, such as the amount of required educational coursework (Abell Foundation, 2001). Unfortunately, none of those hurdles guaranteed improved quality in teaching (U.S. Department of Education Office of
Postsecondary Education, 2002). Reduced to its essence, teacher certification did not provide any insight into an individual's ability, intellectual curiosity, creativity, affinity for children, and instructional skills (Abell Foundation, 2001).

How could states meet the demand in an era of teacher shortages? In Arizona, there were 3,100 district teachers holding emergency credentials (Kossan, 2003a). To meet the population growth in Arizona, the amount of new teachers needed each year until 2010 was estimated to be approximately 6,000. However, only 3,000 teachers graduated from Arizona state institutions each year (Kossan, 2003a). States could meet this challenge only if policies on teacher preparation and certification changed dramatically (U.S. Department of Education Office of Postsecondary Education, 2002). Certification was a hindrance in attracting individuals to the field of teaching (Abell Foundation, 2001). Nevertheless, teachers' unions were adamant in their struggle to establish teacher certification requirements in all states. They argued that it was not enough for educators to know subject matter. Unions insisted that it was imperative for educators to have knowledge about how to teach and how students learned (Weil, 2000).

Educators, policy makers, the media, and the public equated teacher quality with teacher certification (Abell Foundation, 2001). A major disagreement existed over whether traditional teacher preparation positively affected student achievement (Kaplan & Owings, 2003). Academic research attempting to link teacher certification with student achievement was surprisingly deficient (Abell Foundation, 2001). For example, cited was research helping the case with regard to the importance of teacher certification and overlooked was research that did not. Alternatively, research not peer reviewed was
treated without reservation. All too often, too small a sample had been selected and standardized measures of student achievement were not used (Abell Foundation, 2001).

Two studies that challenged each other’s findings were Goldhaber and Brewer’s empirical study entitled, “Evaluating the Evidence on Teacher Certification” and Darling-Hammond, Berry, and Thoreson’s study, “Does Teacher Certification Matter? Evaluating the Evidence” (2001). Goldhaber and Brewer found that mathematics teachers who had a standard teaching certificate had a statistically significant positive impact on student test scores, as compared with teachers who had private school certification or did not have certification in their subject area (Goldhaber & Brewer, 2000). However, Goldhaber and Brewer found no difference in the achievement in mathematics and science between students whose teachers held emergency credentials and students whose teachers had standard teaching credentials (Goldhaber & Brewer, 2000). Based on this finding Goldhaber and Brewer concluded that standard certification should not be a requirement for teachers (Goldhaber & Brewer, 2000). Darling-Hammond et al. challenged Goldhaber and Brewer’s conclusion due to the small sub-sample of teachers in science and mathematics who held temporary and emergency credentials (2001). Darling-Hammond et al. contended that most of the teachers with emergency or temporary credentials had other qualifications resembling those teachers with standard certification (Darling-Hammond et al., 2001). They also pointed out that Goldhaber and Brewer’s sample of temporary and emergency credentialed teachers were teachers from another state in the process of securing their new state’s certification requirements, or new teachers who were close to completing the state’s certification requirements. Therefore, there was no basis for Goldhaber and Brewer’s claim that certification did not matter (Darling-
Hammond et al., 2001). Goldhaber and Brewer countered Darling-Hammond’s statements and reconfirmed that their study did raise questions about the importance of teacher certification (Goldhaber & Brewer, 2001).

Researchers continued to focus upon the relationship between teacher certification and student achievement. In 2002, a dissertation from Arizona State University provided evidence that students of certified teachers in Arizona district schools, might out perform students of under-certified or emergency credentialed teachers (Laczko-Kerr, 2002). Specifically, Laczko-Kerr’s study found that that district school students whose teachers were certified, outperformed students whose teachers were under-certified, on the SAT9 achievement test for all three subtests of math, reading, and language (Laczko-Kerr, 2002). Laczko-Kerr identified teachers on emergency credentials and Teach For America (TFA) teachers as under-certified. Laczko-Kerr found that even inexperienced, fully certified teachers were more effective than TFA teachers.

Darling-Hammond challenged the aforementioned comments made by the Abell Foundation, specifically those findings made by Kate Walsh. Darling-Hammond stated that Walsh dismissed evidence in order to argue that teacher education made no difference to student learning (Darling-Hammond, 2001). Darling-Hammond criticized the Abell Foundation study because it did not clearly present effectiveness of certified and uncertified teachers. Student achievement data was missing in three of the studies used by Walsh to defend the position that new teachers who did posses certification did not produce greater student achievement gains then uncertified teachers (Darling-Hammond, 2001). Walsh used the phrase, a barrier to teaching, with regard to state’s certification processes. Darling-Hammond stated that a lack of preparation contributed to
high teacher attrition rates (Darling-Hammond, 2001). The Goldhaber and Brewer versus Darling-Hammond et al.’s debate, as well as the Abell Foundation’s study and Darling-Hammond’s defense position paper illustrated an ongoing point-counterpoint retaliation by one researcher to another and emphasized the need for closure with regard to the correlation between teacher certification and student achievement.

In some states, teacher certification systems reflected the worst of both worlds: allowing poorly qualified people in, while keeping highly qualified people out (Thomas B. Fordham Foundation, 2003). Many academically accomplished college graduates and mid career professionals with strong subject matter backgrounds might have hesitated to enter teaching because the entry requirements were so rigid (U.S. Department of Education Office of Postsecondary Education, 2002). Traditional certification requirements imposed significant costs on individuals interested in teaching (U.S. Department of Education Office of Postsecondary Education, 2002). These burdensome requirements were a shortcoming of the certification system, which scared off talented individuals while adding little value. There was minimal research to justify these mandates (U.S. Department of Education Office of Postsecondary Education, 2002). Teacher certification lacked consistent standards to classify the effectiveness of candidates (Kaplan & Owings, 2003). The certification process declared all uncertified candidates unqualified to teach, no matter what other attributes they possessed (Abell Foundation, 2001). Ballou and Podgursky said according to their survey, charter school administrators looked for candidates with strong content knowledge when hiring new teachers. In addition, charter school administrators did not express much concern whether or not their teachers were certified and had made up their minds that certified did
not always mean qualified (U.S. Department of Education Office of Postsecondary Education, 2002).

*No Child Left Behind*

President George Bush, on January 8, 2002, signed the NCLB Act, which strengthened the federal pressure on all states to pursue a standards-based reform agenda (EdSource Online, 2003). Essentially, NCLB was the reauthorization of the Elementary and Secondary Education Act (ESEA), which started in 1964 under President Johnson administration’s war on poverty (Konitzer, 2003). The ESEA was the first large-scale federal assistance program in the area of K-12 education and had been continuously reauthorized every five to seven years. The last reauthorization in 1994 was the Improving America’s Schools Act (Konitzer, 2003).

NCLB had four reform principals. First was accountability for results. Every state had to develop benchmarks to measure student progress and assure every student was learning (U.S. Department of Education, Office of the Undersecretary, 2003). The second principle was the use of research-based programs. This emphasized scientifically research-based curriculum, such as the Reading First program (U.S. Department of Education, Office of the Undersecretary, 2003). The third principle was flexibility of federal funding and expanded local control (U.S. Department of Education, Office of the Undersecretary, 2003). The fourth NCLB reform principal was keeping parents informed. For example, annual school report cards were made public by the state (U.S. Department of Education, Office of the Undersecretary, 2003). Other examples included notifying parents if their child’s teacher did not meet the highly qualified criteria (Konitzer, 2003) and making teacher qualifications available upon request. However, if a child was
receiving instruction for more than four weeks from a teacher who was not highly qualified, a letter of notice had to be sent home (Konitzer, 2003). NCLB defined a highly qualified teacher as one who had a bachelor’s degree, possessed full state teacher certification, and demonstrated proficiency in a chosen subject area (U.S. Department of Education Office of Postsecondary Education, 2002). Charter school teachers were exempt from the requirement to hold a teaching certificate due to prior state charter law.

As part of the NCLB Act’s accountability section, Congress issued a challenge to ensure that by the end of the 2005-2006 school year, every classroom in America had a teacher who was highly qualified (U.S. Department of Education Office of Postsecondary Education, 2002). The federal law set guidelines for states to use in defining a highly qualified teacher and mandated that schools receiving Title I funding hire only highly qualified teachers (EdSource Online, 2003). Previously hired teachers had to meet the mandate’s guidelines by the 2005-2006 school year. Title I provided federal funding for supplemental support for students who lived in poverty, with programs such as Reading First and Early Reading First. A large portion of NCLB funding was under the Title I program (EdSource Online, 2003). Arizona’s share of Title I-A funds, Improving Academic Achievement for the Economically Disadvantaged, was 187.8 million dollars.

A statutory formula based on census poverty determined the distribution of monies (Konitzer, 2003).

Arizona had approximately 46,000 district teachers, with more than 3,100 of these teachers not meeting the NCLB qualifications (Kossan, 2003b). These 3,100 under qualified teachers needed retraining to stay in the classroom and meet the NCLB requirements (Kossan, 2003c). According to Glickman, U.S. Education Department
spokesperson, Arizona's estimated 2,900 charter school teachers also had to abide by this federal law (Kossan, 2003a). It was difficult to ascertain the exact number of charter school teachers who did not possess state teacher certification because neither the teachers nor the charter school administrators were required to report that information to the state (R.Gau, personal communication, June 19, 2003). However, the NCLB Act did mandate that all teachers must be highly qualified and that included charter school teachers. Many people misinterpreted that to mean charter school teachers had to be certified (R.Gau, personal communication, June 19, 2003). The NCLB Act required all charter school teachers to hold a bachelor's degree and prove they were competent in the subject they taught by the 2005-2006 school year (Kossan, 2003a). Passing a state test could demonstrate competency, or those with experience could meet the criteria of a state developed rubric, known as the High, Objective, Uniform State Standard of Evaluation, or HOUSSE (U.S. Department of Education, Office of the Undersecretary, 2003). Regarding any teacher teaching in a charter school, the term highly qualified meant that the teacher must meet the requirements set forth in the state's charter school law (U.S. Department of Education Office of Postsecondary Education, 2002). As previously noted, Arizona charter school teachers were not required to become certified, and because under NCLB, the state charter law superceded the federal law in regards to certification those teachers were not be required to become certified (D.T. Hanks, personal communication, June 23, 2003). While charter schools were held to the same rigorous standards of accountability as other public schools, NCLB also respected the freedom charter schools enjoyed under state law with regard to teacher certification (U.S. Department of Education, 2003). Charter schools that received Title I Federal Funds had to meet the
other highly qualified criteria immediately (U.S. Department of Education Office of Postsecondary Education, 2002). Prior to the NCLB Act, Arizona charter school teachers did not need a college degree or need to be certified. The NCLB Act mandated that charter school teachers of core academic subjects including English, reading or language arts, mathematics, science, foreign languages, economics, civics and government, arts, history, and geography meet the other requirements that applied to all public school teachers (U.S. Department of Education No Child Left Behind [NCLB], 2003). This included holding a four-year college degree and demonstrating proficiency in the subject area in which they taught. However, charter school teachers still would not need to hold an Arizona teacher certification license. Teachers of core academic subjects hired by Title I charter schools after the 2002-2003 school year had to meet the highly qualified teacher requirements applicable to charter school teachers before entering the classroom (U.S. Department of Education NCLB, 2003). Teachers of core academic subjects hired before the start of the 2002-2003 school year had to meet the requirements by the end of the 2005-2006 school year (U.S. Department of Education NCLB, 2003). There were charter schools that were free from the regulations of the NCLB Act, such as charter schools that did not accept Title I funds, or any federal monies (U.S. Department of Education, NCLB, 2003). Lisa Graham Keegan, previous Arizona State Superintendent of Public Education, stated that she feared reversion to the comforts of regulation with regard to charter schools (Finn et al., 2000).

Schools would only be able to place a highly qualified teacher in every classroom if the states took bold action to fundamentally alter their certification requirements. Otherwise, states could technically meet the requirements of the NCLB Act and keep
their academic standards for future teachers quite low (U.S. Department of Education Office of Postsecondary Education, 2002).

To meet the highly qualified teachers’ challenge, states needed to streamline their certification system. States should focus on the few things that really mattered: verbal ability, content knowledge and as a safety precaution, a background check of new teachers (U.S. Department of Education Office of Postsecondary Education, 2002).

Student Achievement

The NCLB goal was unparalleled: by the 2013-2014 school year, every child, poor or wealthy, must be working at grade level (Kossan, 2003b). Educators were certain to be pleased if they could get all school children achieving at grade level, as the NCLB Act aimed to do (Kossan, 2003c).

Charter schools were required to use the same standardized tests as districts use to assess students (Weil, 2000). Arizona charter schools did use the same tests as other public schools (Weil, 2000). For example, Arizona charters took part in both the new, state developed AIMS and the familiar SAT9 tests (Finn et al., 2000). In Arizona, the Association for Performance-Based Accreditation, or APBA, published the goals and progress of each charter school’s AIMS test (Finn et al.). The allowable window for the administration of the SAT9, Ninth Edition was March 15 – May 1. Students who took the SAT9 had to have had at least 136 days of instruction and no more than 160 days of instruction prior to the date scheduled by the district or charter school for the test in order to be comparable to the normed group (J. Molera, personal communication, December 5, 2002). The AIMS occurred within the same period as the SAT9, with the 2003-2004 testing dates set for April 19 to April 30 (Arizona Department of Education, 2003b).
Under mandate, all public schools including charters publicly shared student performance data as judged against a predetermined standard (Finn et al., 2000).

Publics continued to ponder if teacher certification was the key to student achievement. The Abell Foundation stated that certification was neither an efficient nor an effective means by which to ensure a competent teaching force (Abell Foundation, 2001). Despite Arizona’s requirements for teacher certification in district schools previously referenced, approximately 75% of fourth and eighth grade students were not achieving reading proficiency levels on standardized reading achievement tests (Jerry & Lutkus, 2003). Identification of reading proficiency for fourth grade students included the ability to demonstrate an overall understanding of the text, supply inferential as well as literal information, draw conclusions, and make connections to their own experiences (Jerry & Lutkus, 2003). There are two examples of how Arizona’s district students were not meeting state standards. The first example appeared in The Nation’s Report Card Report for Arizona, published by The National Assessment of Educational Progress. Noted in this document, the percentage of fourth grade students in Arizona who performed at or above the Proficient Level on the SAT9 reading portion in the spring of 2002 was 22 percent. Similarly, 23% of Arizona’s eighth grade students performed at or above the proficiency level (Jerry & Lutkus, 2003). Secondly, Arizona required high school students to pass the state developed AIMS test prior to high school graduation. Again, despite the requirement of teacher certification to teach students in district schools, two-thirds of sophomores in both district schools and charter schools sponsored by districts failed the 2003 AIMS math test (Kossan, 2003d). However, according to Dr. Michael Block, Professor of Economics and Law at the University of Arizona, the state’s
top four grade level scores on the SAT9 math section were from charter schools. In fact, 14 of the top 22 grade level SAT9 math scores were from charter schools (Arizona Charter School Association, n.d.).

Despite reliance on inexperienced teachers, a national study conducted by the Manhattan Institute concluded that charter school students often did better academically than their district counterparts (Winter, 2003). According to the Manhattan Institute, a national policy research organization, when measured against district schools with similar demographic and geographic characteristics, charter schools produced slightly higher gains in math and reading over a one-year period. For students with test scores that fell in the middle of the range, going to a charter school appeared to add an extra 2 percentile points in reading and 3 percentile points in math on standardized tests. Although these gains were modest, they were large enough to challenge the notion that charter schools suffered academically because they tended to employ uncredentialed teachers (Winter, 2003). Greene, at the Manhattan Institute, questioned why charter schools made these gains. Perhaps teacher certification was not the key element to student achievement. Possibly, it was the greater freedom from regulations that charter schools enjoyed. This freedom might have given charter school teachers the ability to meet the needs of their students and therefore help students reach higher achievement levels (Winter, 2003).

Effective Teaching

The debate continued. What requirements should determine who teaches in charter schools? A report from The National Commission on Teaching and America’s Future, or NCTAF, “Doing What Matters Most” reviewed several educational studies to make the case that teacher expertise mattered (Ballou & Podgursky, 2000). In 1999, The
National Council for Accreditation of Teacher Education, NCATE, estimated that over 100 studies showed that qualified teachers outperformed those with little or no preparation in helping students learn (Abell Foundation, 2001). Teachers’ unions claimed that to be an effective educator, teachers had to have background knowledge of child development, cognitive theories, learning strategies, and learning assessment (Weil, 2000). Although content knowledge was unarguably essential, knowing how to teach content whether learned in preservice training or on the job made a measurable impact (Kaplan & Owings, 2003).

Pro credential advocates claimed that teacher candidates from accredited, respected teacher preparation programs probably had an advantage in terms of potential teaching effectiveness (Kaplan & Owings, 2003). However, charter school advocates claimed the evidence that a teacher’s effectiveness was enhanced by advanced degrees earned in schools of education was very weak (Ballou & Podgursky, 2000). By contrast, the data established more clearly that it was important to recruit teachers of above average general intelligence and academic ability. In fact, Ferguson’s study of Texas teachers concluded that teachers’ performance on the Texas Examination of Current Administrators and Teachers, a test of basic literacy, correlated to teacher effectiveness (Ballou & Podgursky, 2000).

In Alabama, it was teacher ACT scores that were the most important predictor of student test score gains (Ballou & Podgursky, 2000). A single teacher attribute that was measurable and related consistently to higher student achievement was verbal ability (Abell Foundation, 2001). Sociologist, James Coleman, noted in his 1966 landmark study, “Equality of Educational Opportunity,” that among African American students,
there was a correlation between student achievement and teachers' scores on vocabulary tests (U.S. Department of Education Office of Postsecondary Education, 2002). However, it was not in the interest of certification advocates to promote the strong findings on the correlation of a teacher’s verbal ability with teacher effectiveness, because formal teacher preparation would become less essential to the strategies for improving student achievement (Abell Foundation, 2001).

Teaching Styles

Teacher certification, although an area of ongoing debate, was not the only variable that might affect student achievement. Various researchers had also reviewed teaching style in an attempt to find the key to student achievement.

Teaching and learning styles, though complementary, were distinct and needed to be studied separately (Gayle, 1994). A teacher’s style has an indelible character, not dictated by students' learning styles. Teaching style was determined to be part of one’s personal make-up and any instructional process that tried to mold how a teacher taught would either encourage and reinforce a preferred style, or generate pressures to modify (Grasha & Yangarber-Hicks, 2000). The teacher’s personality preceded any choice and was always a strong, if not the first, contributing factor to a teaching style (Gayle, 1994).

Teaching styles summarized the needs, motives, emotions, and beliefs, one possessed about how to teach (Grasha & Yangarber-Hicks, 2000). The concept of teaching is not a simple choice between alternative sets of strategies, techniques, or teaching acts (Gayle, 1994). People who saw education as a technical enterprise, apart from a moral one, regarded education as a series of acts to produce results (Dillon, 1998).
Various researchers discussed teaching methods and styles. Gayle stated that teaching style was influenced by its core, which gave it character and embodied the individual’s manner or philosophy, or way of life, which might be rooted in religious conviction and practice and that this core was the basis of personality (Gayle, 1994). Therefore, one might conclude that whether the teacher was a traditionalist, absolutist, relativist, or progressivist, said teacher’s views would have widespread effects on specific classroom behaviors. Furthermore, whether the classroom instruction is formalized or individualized, democratic, or authoritarian depends on the teacher’s core. Teaching styles were a revelation of one’s self more than the use of learned postures (Gayle, 1994).

Anthony Gregorc, Ph.D., a phenomenologist, had pursued a lifelong study of style and the mind. Gregorc held the opinion that the mind was the primary medium for the teaching and learning processes and that every human being was born with a uniquely proportioned set of mental qualities for interaction with the world (Gregorc Associates, 2003). These qualities, revealed as specific behaviors, characteristics, and mannerisms were collectively known as style. However, because each person possesses free will, which continually prompts choice, warning signs might occur in the form of mental and physical discomforts when one deviates from one’s true. These warning signs provide an opportunity for one to restore balance to life (Gregorc Associates, 2003).

J.T. Dillon, Professor of Education in the School of Education, University of California – Riverside, was against the view that good teachers should use diverse styles of teaching. Dillon argued the view of Joyce and Weil, who in their 1986 book, Models of Teaching described two dozen models of teaching grouped into four distinct families. These teaching style families were informational teaching, or the advance-organizer
model; social teaching that used the group investigation model; personal teaching known as the non-directive model; and behavioral teaching which was contingency-management (Joyce & Weil, 1986). Joyce and Weil contended that teachers needed to master a range of models. In the 1992 text *Approaches to Teaching*, Fenstermacher and Soltis described three approaches to teaching known as the executive, therapist and the liberationist approaches. Fenstermacher and Soltis admitted that these theories were contradictory, but a teacher should use all of them in practice. Dillon contended that the use of various teaching styles entailed the use of techniques drawn from opposite philosophies and psychologies (1998). The proposal to use multiple teaching styles rejected the teacher's view and reduced teaching to the application of techniques (Dillon, 1998).

Dunn and Dunn were well-known researchers on learning styles. R. Dunn had stated that students were not failing because of the curriculum (Dunn, 1990). Dunn advocated that students could learn almost any subject matter when they were taught with methods and approaches responsive to their learning style strengths, yet, those same students failed when they were taught in an instructional style incongruent with their strengths. Although the Dunns recognized that teachers had their own teaching style, they concluded that teachers needed to teach according to the students' learning styles (Dunn, 1990).

Neville Bennett, Ph.D., professor at the Canterbury Graduate School in England, wrote *Teaching Styles and Pupil Progress* (1976). Bennett analyzed the effect of teaching styles on the performance of students. Bennett identified two categories of teaching styles: formal and informal. Formal teaching regarded the role of teacher as a very vital feature in preparing children for academic work. Formal teachers also attempted to instill
what they perceived as normal standards of behavior in their students. Informal teachers valued the development of students’ creative abilities and were more concerned with developing students’ self-expression. Students in formal classrooms showed greater improvement in reading and math skills than those students who received instruction in less formal classroom settings. Bennett’s study also revealed that students in informal settings did not do any better in the area of creative writing than students who received writing instruction in a more formal setting. Therefore, Bennett concluded that formal teaching styles were more closely associated with student achievement in basic skills than were informal styles (Bennett, 1976).

As one can conclude, there were many views on teaching style. According to Gayle, *teaching style* terminology needs a consistent meaning across research studies (1994). In this current research, teaching style is a second independent variable for the reason that students in the classroom personally encounter teaching style. This study utilized the five teaching styles developed by Dr. Anthony Grasha, Psychology Professor at the University of Cincinnati. Grasha identified the five teaching styles as Expert, Formal Authority, Personal Model, Facilitator, and Delegator. Each style has advantages and disadvantages in the classroom with regard to student learning.

Expert teachers exude an air that they possess knowledge and expertise that students need. This type of person enjoys maintaining the status of an expert. The Expert focuses upon transmitting information and preparing students well (Grasha & Yangarber-Hicks, 2000). The advantage of the Expert teaching style is the information, knowledge, and skills such individuals possess. The disadvantage is that if this style is overused, the
teacher's display of knowledge could be intimidating to less experienced students (Grasha, 2001).

The teaching style of Formal Authority provided teachers with status among students due to the knowledge they possess and their role as a faculty member. This type of teacher found it important to provide positive and negative feedback to students. Establishing learning goals, setting expectations, and rules of conduct were also important to the teacher who used the Formal Authority teaching style (Grasha & Yangarber-Hicks, 2000). The advantage of this style is that the teacher focused on clear expectations. A disadvantage of Formal Authority is that this style could lead to a rigid or standardized way of managing students and their concerns (Grasha, 2001).

The third type of teaching style is Personal Model. Personal modeling is the essence of this teaching style. This type of teacher established an example of how to think and behave and encouraged students to observe and imitate the example. A teacher using this method directs and guides students by showing how to do tasks (Grasha & Yangarber-Hicks, 2000). An advantage of the Personal Model teaching style is that students have an opportunity to follow a role model. A disadvantage is that some students might feel inadequate if they could not live up to the teacher's expectations and standards (Grasha, 2001).

The Facilitator provided insightful questioning and suggested alternatives, as well as encouraged students to make educated choices. This type of teacher's overall goal is to develop independent student initiative and responsibility. The advantages of the Facilitator include providing students with an abundance of direction and support (Grasha & Yangarber-Hicks, 2000) and displaying flexibility and focusing on students' needs and
goals. In contrast, a disadvantage of the Facilitator teaching style is that it is often time consuming (Grasha, 2001).

Finally, the fifth teaching style is Delegator. This type of teacher was concerned with developing students’ capacity to become self-directed learners. Students work independently, or on a team, in this type of classroom with the teacher available as a consultant (Grasha & Yangarber-Hicks, 2000). The advantage is that students perceive themselves as independent learners. However, this style would not be advantageous to a student who did not show signs of readiness for independent work (Grasha, 2001).

Grasha concluded that the above-mentioned teaching styles appeared to be prevalent characteristics of college faculty and not isolated qualities that affected only a few teachers (Grasha, 2001). Moreover, Grasha asserted, “Everyone who teaches possesses each of the five teaching styles to varying degrees” (2001, p. 153). Consequently, this researcher reasoned that Grasha’s five teaching styles are present among the public third through sixth grade teaching populations, and describe teachers in general not just teachers associated with higher education. Therefore, Grasha’s Teaching Style Inventory (2001), although normed with college faculty, was used to determine if third through sixth grade charter school teachers revealed tendencies toward Grasha’s five teaching styles and how those results correlated with student reading achievement.

Whereas Grasha’s research examined the relationship between teachers’ teaching styles and students’ learning styles, in this study the teaching styles were correlated with student reading achievement. Grasha noted the temptation to categorize a teacher into just one of the teaching styles, and emphasized that teachers possess all five teaching styles to some degree (Grasha, 2001). Grasha further asserted that there are four clusters of the
aforementioned teaching styles, each containing a dominant and secondary set of characteristics. Cluster one contained Expert and Formal Authority as the dominant teaching styles, with Personal Model, Facilitator, and Delegator as secondary teaching styles. Teachers in this cluster used exams, lectures, teacher-centered questioning and discussions, term papers, as well as technology based presentations to conduct lessons. In cluster two, the dominant teaching styles were Personal Model, Expert, and Formal Authority, with Facilitator and Delegator as secondary teaching styles. Cluster two teachers used role modeling by illustration and direct example, as well as coaching and guiding. The third cluster includes Facilitator, Personal Model and Expert as the dominant teaching styles, with Formal Authority and Delegator as secondary teaching styles. These types of teachers use case studies, critical thinking, discussions, guided readings, laboratory projects, and problem based learning as classroom activities. Finally, the fourth cluster contains Delegator, Facilitator, and Expert as the dominant teaching styles, with Formal Authority and Personal Model as secondary teaching styles. Teachers who favored this cluster used contract teaching, debates, jigsaw groups, learning pairs, position papers, self-discovery activities and student journals in the classroom (Grasha, 2001).

A teacher may show dominance, or preference, in more than one teaching style area. However, this study used the predominant teaching style in order to correlate teaching style and student achievement.

**Conclusion**

In conclusion, at the time of this study, a decade had elapsed since the first charter school opened in Minnesota. Yet, the charter school movement was still a new and
growing form of public education. Although there were 40 states and the District of Columbia that had enacted charter legislation, Arizona was still the forerunner, in terms of both charter law strength and physical number of charter school sites. Less regulation for greater student achievement was the underlying foundation of the charter school movement. However, over the past decade regulatory policies began to infiltrate charter schools, the most prevalent being the NCLB Act and the requirements to employ only highly qualified teachers. Granted, Arizona charter school teachers still did not have to hold state certification, but suddenly needed to possess a bachelor's degree and prove proficiency in their field, by the end of the 2005-2006 school year, with Title I schools immediately facing this requirement regarding new hires. However, the question remained unsettled as to who should pay for additional coursework or teacher training, as Title II funds did not cover all the costs.

Charter schools reported higher scores on student achievement tests than district schools. However, because charter schools had the freedom to target their population, it was often difficult to compare these results to district schools. District schools did not favor charter schools and the spotlight they received when test scores showed student improvement. Critics often attributed the perceived success of charter schools to low class size and parental involvement, and questioned the validity of the improved achievement scores due to the frequent lack of teacher certification. However, the lack of required state teacher certification by charter school teachers had not affected parental views of these public schools. The Thomas B. Fordham Foundation studied parental satisfaction about their child's charter school, and concluded that parents viewed charter
teachers as better than those at district schools where their children had previously attended.

The NCLB had the effect of increasing attention regarding teacher certification. Studies by the Abell Foundation did not support the perceived value of a teaching certificate and viewed the whole licensure process as a barrier to teaching. The Abell Foundation also illustrated the weak aspects to the few studies that did determine a link to teacher certification and student achievement, citing research flaws such as research that had not been subject to peer review, heavy reliance on unpublished dissertations, and not using standardized measures of student achievement. The Goldhaber and Brewer versus the Darling-Hammond et al. studies illustrated that the debate over the importance of teacher certification was still open.

Arizona, as did each state, established its own criteria for teacher certification and set this as a requirement to teach in district schools, yet Jerry and Lutkus’s work revealed that a high percentage of fourth and eighth grade Arizona students were not achieving proficiency levels on standardized achievement tests. In contrast, University of Arizona Professor, Dr. Michael Block pointed out that the top four grade level math scores on the 2003 SAT9 were classes in charter schools, where teacher certification was not required.

The ongoing dispute of the value of teacher certification and its impact on student achievement created studies to determine other variables that showed a correlation with student achievement. For example, in 1966, Coleman found a correlation between student achievement and teachers’ scores on vocabulary tests (U.S. Department of Education, Office of Postsecondary Education, 2002). In the same realm, Ferguson’s 1991 study of
Texas teachers indicated there was a correlation between a teacher’s performance on a test of basic literacy and teacher effectiveness (Ballou & Podgursky, 2000).

Finally, after reviewing the teaching styles studied by Joyce and Weil, Fenstermacher and Soltis, as well as Dunn and Dunn, this researcher conducted an examination of teaching styles that led to focusing on Grasha’s five teaching styles and Grasha’s Teaching Style Inventory. The Teaching Style Inventory ranked the respondent’s perceived importance of each listed characteristic identified with one of the five teaching styles. Grasha asserted, “Everyone who teaches possesses the five teaching styles to varying degrees” (Grasha, 2001, p.153). Gayle added to this perception, asserting that teaching styles have an indelible character (Gayle, 1994). Moreover, Grasha and Yangarber-Hicks concluded that teaching styles arose out of one’s personal make-up (Grasha & Yangarber-Hicks, 2000). The idea that teaching styles are a product of personality rather than a product of teacher education was an impetus for including this variable in this present study. As the value of teacher certification debate continued among educators, researchers, and both district and charter administrators, it was important to determine if another variable, such as teaching style, showed a significant relationship with student achievement as compared to the effect of teacher certification status on student reading achievement.
3. Method

This section of the dissertation explains the methods used in executing this study and will provide information regarding the subjects and instruments used; as well as the research design, which was quantitative. Finally, this section reviews the procedure taken to secure the necessary data and concludes with an analysis of data collected.

Subjects

Subjects used in this quantitative study were selected by convenience sampling, which is a non-random sampling procedure and is most used in educational research (Gay & Airasian, 2003). Volunteers and existing groups are used in convenience sampling. In this study, the existing groups were Arizona Charter School Association (ACSA) members who attended the state’s annual three-day conference and also ACSA members who attended monthly luncheons. It was from this group of educators that principals were orally issued invitations to participate in this study both in group settings and individually. Upon entering a volunteering principal’s charter school, another existing group, the teachers, was invited to become volunteers and complete a teaching style inventory. To meet the necessary criteria for this study the teacher volunteers were charter school teachers who taught grades third through sixth during the 2002-2003 school year and had returned to the same charter school for the 2003-2004 school year in an Arizona charter school which received Title I funds. Arizona’s Department of Education Grant’s Management link, found on the state’s Department of Education Website was used to confirm that the charter schools used in this study received Title I funds during the 2003 fiscal year. Charter schools that received Title I federal funds were selected for this study because Title I schools had to meet the NCLB requirements or risk
losing those federal monies. When a principal indicated no interest in participating in this study, another charter school principal was asked to participate and in turn, the teachers of that school were asked to volunteer their time and complete a teaching style inventory. The desired sample size was no less than thirty subjects. Therefore, the sampling procedure described above continued until securing a minimum of 30 qualified subjects. All third through sixth grade teachers in each selected school were asked to volunteer their time and be a part of this study. However, as a participation incentive, the researcher rewarded volunteers with a chance to win by random drawing, a $100 gift certificate at a teaching supply store.

**Instruments**

The effect of teacher certification on student reading achievement was to be determined by first confirming a teacher’s certification status by clarifying the fact with the teacher, and examining the effect of that certification on SAT9 student reading achievement scores. Specifically, the student reading achievement scores used were the spring 2003 teachers’ class average reading percentile results as measured by the state required SAT9.

According to the Mental Measurement Yearbook (MMY), the content validity of the SAT9 is high. This MMY review included an advisory panel of prominent minority-group educators who identified objectionable items and scrutinized the entire battery. This was to ensure that the items were valid for all examinees. Construct validity was evidenced as correlations were indicated between this test/subtests and the Otis-Lennon School Ability Test. Reliability coefficients on the SAT9 were consistently in a very high range, mid .80’s - .90’s.
To compare the effect of teacher certification on student reading achievement, with the significance of another variable and student reading achievement, teaching style was selected as a second independent variable in this study. The relationship between teaching style and student reading achievement was determined by correlating the results from a teaching style inventory, to the teachers’ class average reading percentile scores, as measured by the spring 2003 SAT9 described above. The teaching style inventory selected was Grasha’s Teaching Style Inventory. Permission to use Grasha’s Teaching Style Inventory was granted Grasha (see Appendix A). In addition, Grasha stated, “The reliability coefficients (average Cronbach Alpha across scales and samples is .74 with a range of .72 -.79) and validity is an ongoing process involving face, construct, and predictive” (A. Grasha, personal communication, July 29, 2003).

Design of Study

In Arizona, the SAT9 is annually administered to all charter school students in grades third through sixth. This state required test was given in April 2003, with scores made publicly available in June 2003. This study used class average, not individual reading percentile scores of SAT9 reading results. Scientific Packaging for the Social Sciences (SPSS) software was used to analyze the effect of teacher certification status on student reading achievement scores as well as the relationship between teaching style and student reading achievement. The version of SPSS software used was, Student Version 11.0 for Windows made available by Prentice Hall.

Teachers were asked to complete Grasha’s Teaching Style Inventory (see Appendix B) in the fall of 2003, when teachers were available and back in their classrooms. A seven point Likert scale secured a teacher’s numerical answer to each of
the 40 questions on the inventory. Although Grasha’s Teaching Style Inventory has two spaces next to each Likert statement in order for a teacher to respond according to how two courses are taught, for the purpose of this study, the teachers were instructed to respond to the statements according to how they taught reading to their students. Inventory answers ranged from 1 = strongly disagree, 2, 3 = somewhat disagree, 4 = neither disagree nor agree, 5 = somewhat agree, 6, and 7 = strongly agree (see Appendix B). On the left side of Grasha’s Likert scale, under numeral one was the statement very unimportant aspect of my approach to teaching this course and on the far right of the scale, under numeral seven, was the statement very important aspect of my approach to teaching this course. An average score was tabulated for each inventory indicating the teacher’s predominant teaching style. The teaching style inventory score sheet revealed the teacher’s low, medium, or high level of preference for each of five teaching styles, which were Expert, Formal Authority, Personal Model, Facilitator, and Delegator, (see Appendix C). As Grasha stated, “Everyone who teaches possesses each of the five teaching styles to varying degrees.” (Grasha, 2001, p. 153) In this study, each teacher’s most predominant teaching style, or the one with the highest average score (according Grasha’s Analyzing the Teaching Style Inventory directions shown in Appendix D) was used to correlate teaching style and student reading achievement. In addition, the same teachers who completed Grasha’s Teaching Style Inventory indicated, with a yes or no response, if an Arizona Teaching Certificate was held as of the beginning of the 2002-2003 school year.

The SPSS software, described above, was utilized to analyze the effect of teacher certification status on students’ reading achievement scores as well as the relationship
between teaching style and students’ reading achievement scores. The question examined was which analysis showed a greater significance, teacher certification status and student reading achievement or teaching style and student reading achievement. The alpha level as compared with a predetermined alpha level of \( p < .05 \), was used to determine each outcome’s level of significance.

**Procedure**

In the fall of 2003, Arizona charter school teachers who taught third through sixth grades during the 2002 - 2003 school year at charter schools that received Title I funding, were asked to participate in this study. The subject selection previously described provided the opportunity for 66 teacher volunteers to complete Grasha’s Teaching Style Inventory. Thirty-nine subjects completed the teaching style inventory and met the criteria for this study.

With the permission of the principal, this researcher asked the teachers of each participating charter school to volunteer their time as a subject in this study. The principals were informed that each class’ average reading percentile score on the SAT9, from the spring 2003 test results, would be reviewed and that the researcher would ask each teacher the status of their possession of an Arizona teaching certificate at the beginning of the 2002-2003 school year. Teachers were asked to respond yes or no with regard to possession of an Arizona teaching certificate as of the beginning of the 2002-2003 school year. Finally, the principal was asked if the teachers in that school might complete Grasha’s Teaching Style Inventory and a copy of the inventory was supplied to the principal. Each principal and all teachers were assured that the security of personal identity would be maintained. No school or teacher would be identified or singled out, as
all information regarding scores, certification status, and teaching style inventory results would be aggregated into the total population of subjects.

The above-mentioned teachers at the selected charter schools completed Grasha’s Teaching Style Inventory. Only teachers who taught third through sixth grade in that charter school during the 2002-2003 school year were asked to participate. The researcher delivered the teaching style inventory, but the teachers had the option of completing the teaching style inventory immediately, or at a later time and mailing the results back to the researcher in a pre-stamped addressed envelope. Coded inventories protected the individual identities of the participating teachers. There were teachers who chose to complete the inventory while the researcher was still in the school building and thus returned it in person.

In the spring of 2003, all third through sixth grade charter school students took the SAT9. Each charter school office had the results available, and each charter school’s results of the SAT9 were required to be submitted to the Arizona Department of Education. Each class’ average SAT9 reading percentile scores from the spring 2003 test results for all third through sixth grade classes were obtained. Only class average reading percentiles were taken if the same teacher was still teaching in that charter school during the fall of 2003.

In correlational research, the higher the validity and reliability of the variables to be correlated, the smaller the sample can be, but not less than 30 (Gay & Airasian, 2003). According to reviewers of the SAT9 test, as stated in MMY, the reliability of the SAT9 was high, .80-.90’s. The nominal data of yes or no, regarding teacher certification was reliable, and Grasha’s Teaching Style Inventory reliability figure of .74 was in the high
range. Therefore, enough charter schools and their teachers were requested to participate in this study until a minimum of 30 qualified subjects was secured. For the purpose of this study, five criteria had to be met in order to deem a teacher a qualified subject. First, a qualified subject was one who taught third through sixth grade during the 2002-2003 school year, and returned to the same charter school for the 2003-2004 school year. Secondly, each teacher was considered a qualified subject if the researcher was able to obtain the nominal data regarding the possession of a valid Arizona teaching certificate at the beginning of the 2002-2003 school year. The third and fourth criterion for qualification was met if the teacher was willing to sign the Informed Consent Agreement (see Appendix E) and completely fill out Grasha’s Teaching Style Inventory. Finally, this researcher had to be able to obtain that teacher’s class average reading percentile score from the spring 2003 SAT9 results.

Data Analysis

Conducting statistical tests of significance and determining the extent to which said outcomes occurred by chance under the null hypothesis examined the effect and/or relationship among variables. The probability associated with the statistical results was compared with a predetermined, \( p < .05 \), alpha level. If the probability was equal to or less than the alpha level, the null hypothesis was rejected. If the probability of chance was greater than the predetermined alpha level, the null hypothesis was retained.

A \( t \) test for Independent-Samples was used to analyze the effect of the independent variable, teacher certification status, on the dependent variable, class average student reading achievement percentile scores. A high probability of chance was
determined to be responsible for any difference between group variances. Therefore, when the probability \((p)\) exceeded the alpha level .05, the null hypothesis was accepted.

A bivariate correlation was used to determine the significance of the relationship between the independent variable, teaching style, to the dependent variable, class average student reading achievement percentile scores. Since both of these variables were interval, the Pearson Product moment correlation was selected. Once again, a high probability of chance was determined to be responsible for any difference between group variances. Therefore, when the probability \((p)\) exceeded the alpha level .05, the null hypothesis was accepted.

**Conclusion**

This chapter has explained the methods used in this quantitative study which addressed the research question: Is there a need for the NCLB Act to require certification for Arizona charter school teachers, or, will this study’s results determine if another variable has a greater effect and/or relationship on student reading achievement scores? Thus the relationship between teaching style and student reading achievement scores was also explored.
4. Results

As previously stated, this dissertation is a report of a quantitative study that was conducted to determine if there is a need for the NCLB Act to require certification for Arizona charter school teachers, or will this study determine if another variable has a greater impact on student reading achievement scores? Thus, the relationship between teaching style and student reading achievement scores was also explored. The Results section contains four components. First, incidences regarding subjects’ participation are explained. Second, details regarding data gathering for three variables teacher certification status, SAT9 reading percentile scores, and teaching style are reviewed. Third statistical test results are discussed and finally, this chapter concludes with a statement of acceptance or rejection for each null hypothesis and the research question is answered.

Subjects

Nineteen principals indicated interest in participating in this study, via convenience sampling, when oral invitations were presented to ACSA members in group settings and individually. Phone calls were made to the interested principals in an attempt to schedule an appointment for a school visit. The methodology section of this dissertation provided complete details regarding subject selection. Reaching some of the principals by phone was difficult because the school receptionist would not put the call through, claiming the principal was not available, in a meeting, or absent and offered to take a message. Other schools had elaborate voicemail systems and allowed contact only through voice messages. However, eight principals were contacted on an initial attempt by phone and appointments were set, although one of these principals reconsidered and
sent an email to cancel the appointment stating no interest in participation. Five principals were contacted by phone after two or more attempts, and additional appointments were set to visit charter schools. Three final principals were reached after persistent attempts by phone. These three principals seemed to have lost enthusiasm to participate in the study, but did make an appointment to see this researcher. During each phone conversation, the principal was informed that only teachers who had taught grades third through sixth during the 2002-2003 school year were to be involved in the study. In addition, the principals were told that each teacher’s class average SAT9 reading score from the spring of 2003 would be needed. Three principals had indicated interest in participating in this study, but never returned the several voicemail messages left by this researcher. The reader will note in Appendix F, History of School Contacts, that a zero listed under number tested indicates the principal did not schedule an appointment. The number qualified column indicates how many qualified subjects were gained from the school versus how many potential subjects were in the school. The reader will notice that school 72003 had a potential of 13 teacher-subjects. Upon arrival at that school, the principal asked that this researcher meet with the curriculum coordinator to gather the SAT9 scores. During this meeting, the principal determined that teachers were asked to do too many other requests and did not want to participate in the study. Since all SAT9 scores had just been gathered, the principal was persuaded to allow the teachers to decide for themselves, as one participant in this study would be drawn at random to win a $100.00 gift certificate at a teaching supply store. However, the principal told the teachers that no one was required to contribute information for this study and no consequence would come to any teacher who did not to participate. One teacher out of 13
teachers returned the teaching style inventory. The principal at school 132003 forgot about the appointment and therefore when this researcher arrived at the school, another day and time had to be scheduled. Although, nineteen principals indicated interest in participating in this study, 15 principals participated. There were 66 potentially qualified teacher-subjects at the 15 schools and 39 met the criteria. As noted in the procedure section of the methodology chapter in this dissertation, five criteria had to be met in order to deem a teacher a qualified subject. First, a qualified subject was one who taught third through sixth grade during the 2002-2003 school year, and returned to the same charter school for the 2003-2004 school year. Secondly, each teacher was considered a qualified subject if the researcher was able to obtain the nominal data regarding the possession, as of the beginning of the 2002-2003 school year, of a valid Arizona teaching certificate. The third and fourth criteria were met if the teacher was willing to sign the Informed Consent Agreement and return a completed Grasha's Teaching Style Inventory. Finally, this researcher had to be able to obtain that teacher's class average reading percentile score from the spring 2003 SAT9 results.

It was concluded that a principal might seem interested when invited in a group setting or individually at a state conference or monthly luncheon to participate in a research study, but when said principal returned to the daily responsibilities of operating a charter school interest to participate seemed to diminish. In addition, 19 teachers in total, 12 from one school, chose not to return the teaching style inventory, which made the statement of the principal at school 72003, which was that teachers were asked too many requests, seem a possibility. However, whether a charter school's teachers became qualified subjects or not, gratitude for participation in this study was extended. Each
participating principal received a courtesy note of thanks after the scheduled appointment (see Appendix G). In addition, when the data gathering was complete, each participating principal received a letter declaring that one teacher-subject was selected by random drawing and awarded a $100.00 gift certificate at a teaching supply store (see Appendix H).

Teacher Certification

Charter schools are required by Arizona state law to have a binder located in the school’s office containing the educational level, experience, and other information about each teacher. However, in order to expedite efficiency, each subject was asked whether an Arizona teaching certificate was held at the beginning of the 2002-2003 school year. Two subjects indicated they had secured an Arizona state teaching certificate in January of 2003 and consequently, were excluded from the study. Table 1 summarizes the subjects’ Arizona Teacher Certification Status.

In conclusion with N=39, 22 subjects did not possess Arizona teacher certification and 17 subjects did possess Arizona teacher certification. Figure 1 illustrates how this study’s finding that 56% of the charter school teachers lacked Arizona teacher certification is consistent with the state’s estimation that approximately half of Arizona charter school teachers are not state certified (Kossan, 2003a). In Texas, another state that does not require teacher certification for charter school teachers, 54% of charter school teachers are not certified (Fusarelli, 2002).

SAT9 Scores

The average spring 2003 SAT9 reading scores for each classroom is public information and this researcher requested that these results be made available. Two
Table 1

Subjects’ Teacher Certification Status

<table>
<thead>
<tr>
<th>Arizona Teacher Certification Status</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOES NOT have AZ teacher certification</td>
<td>22</td>
<td>56.4</td>
<td>56.4</td>
<td>56.4</td>
</tr>
<tr>
<td>HAS AZ teacher certification</td>
<td>17</td>
<td>43.6</td>
<td>43.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 1. Subjects' Teacher Certification Status
principals had the scores ready for this researcher’s review upon arrival. The other 13 principals had to locate the information that was stored in file drawers, binders, or boxes and provided assistance in securing each teacher’s average SAT9 reading percentile score. Two subjects were excluded from the study because the teacher’s class average SAT9 reading percentile scores could not be obtained. Teachers’ class average SAT9 reading percentile scores ranged from the 15th percentile to the 85th percentile, as noted in Table 2.

Teaching Styles

The teachers were assured their responses to a teaching style inventory would remain anonymous. First, the teachers were asked to read and sign the Informed Consent Agreement. One teacher decided not to participate at this point. Secondly, the subjects were asked to complete Grasha’s Teaching Style Inventory. Instructions were stated at the top of Grasha’s Teaching Style Inventory. However, for the purpose of this study the subjects were instructed to use the Likert scale and respond to the statements according to how reading was taught during the 2002-2003 school year, not their choice of a subject area. In addition, the subjects were instructed to only provide responses for one course, reading, not two different courses as Grasha’s Teaching Style Inventory permits. Subjects had the option of completing Grasha’s Teaching Style Inventory immediately, or returning it to the researcher in a self-addressed, pre-paid envelope. Twenty-nine subjects completed the inventory immediately while 14 others returned the teaching style inventory in the provided envelope. Two teachers joined the teaching staff in November of 2002 and were disqualified from the study. One teacher was disqualified because after
Table 2.

*SAT9 Reading Percentile Range and AZ Teacher Certification Status*

<table>
<thead>
<tr>
<th>SAT9 Reading Percentile</th>
<th>AZ Teacher Certification Status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DOES NOT have AZ teaching cert.</td>
<td>HAS AZ teaching cert.</td>
</tr>
<tr>
<td>15.0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>17.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>26.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>29.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>30.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>36.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>37.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>38.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>39.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>41.0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>44.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>45.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>47.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>49.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>54.0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>55.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>58.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>60.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>63.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>64.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>65.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>66.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>67.0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>68.0</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>74.0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>76.0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>77.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>81.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>82.0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>84.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>85.0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>17</td>
</tr>
</tbody>
</table>
completing the inventory it was mentioned that 2nd grade was taught last year and 3rd grade this year. Finally, an additional subject, who returned the teaching style inventory in the provided envelope, was disqualified because page two of the teaching style inventory was not completed. There were subjects who took the liberty of adding comments in the margins of the inventory such as the response items were too close together, or they did not use a syllabus, which was mentioned in one of the statements. Despite the comments, the subjects did select a numeral from the seven point Likert scale for each statement. In conclusion, 39 teachers completed and returned Grasha’s Teaching Style Inventory. The remaining 27 inventories were disqualified, as described above, or were not returned. According to Grasha, “Everyone who teaches possesses each of the five teaching styles to varying degrees” (Grasha, 2001, p.153). Grasha’s Teaching Style Inventory provided information regarding subjects’ scores in each of the five teaching styles. The teaching style inventory score sheet revealed the teacher’s low, medium, or high level of preference for each of five teaching styles, which were Expert, Formal Authority, Personal Model, Facilitator, and Delegator. In this study, each teacher’s most predominant teaching style, or the one with the highest average score, according Grasha’s Analyzing the Teaching Style Inventory Directions page, was used to correlate teaching style and student reading achievement. According to Grasha, “The higher the average score, the more participants perceived that teaching style as being displayed in their classes” (Grasha, 2001, p. 165). The subjects’ scores as noted in Table 3, indicated that the most predominant teaching style, or the one subjects’ perceived to be displayed in the classroom when teaching reading was Facilitator with Personal Model as the second most predominant teaching style among subjects. Figure 2 provides a visual
Table 3.

*Subjects' Predominant Teaching Styles*

<table>
<thead>
<tr>
<th>TEACHING STYLE</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert</td>
<td>3</td>
<td>7.7</td>
<td>7.7</td>
<td>7.7</td>
</tr>
<tr>
<td>Formal Authority</td>
<td>5</td>
<td>12.8</td>
<td>12.8</td>
<td>20.5</td>
</tr>
<tr>
<td>Personal Model</td>
<td>9</td>
<td>23.1</td>
<td>23.1</td>
<td>43.6</td>
</tr>
<tr>
<td>Facilitator</td>
<td>18</td>
<td>46.2</td>
<td>46.2</td>
<td>89.7</td>
</tr>
<tr>
<td>Delegator</td>
<td>4</td>
<td>10.3</td>
<td>10.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 2

Subjects' Predominant Teaching Styles
illustration of predominant teaching style used for reading instruction, as indicated by responses on Grasha’s Teaching Style Inventory. The results of the subjects’ predominant teaching style are supported by Grasha’s findings. Although subjects were not required to state gender on the teaching style inventory, this researcher observed that the majority of the subjects were women. Grasha concluded that females tend to score higher than males in the Facilitator and Delegator teaching styles and lower than males in Expert and Formal Authority teaching styles (Grasha, 2001). According to Grasha, this conclusion was supported by Eagly and Johnson’s 1990 study that women in authority positions are more likely to downplay expertise and authority (Grasha, 2001). In addition, Grasha determined that the teaching style of Personal Model appeared the predominant teaching style among teachers of Education (Grasha, 2001). Therefore, the majority of this study’s subjects were, by observation, noted to be women and as teachers were educators, therefore the Facilitator and Personal Model teaching styles as predominant teaching styles in this study are supported by Grasha’s findings.

Analysis

The research question was answered by determining if each null hypothesis was accepted or rejected. For the reader’s convenience, the research question and the two null hypotheses are restated.

Research question

Is there a need for the NCLB Act to require certification for Arizona charter school teachers, or, will this study show that teacher certification status has no effect on student reading achievement? Furthermore, will this study show that teacher certification status will have less of an effect on student reading achievement than teaching style?
Statement of Null Hypotheses

1. There is no significant effect on student reading achievement scores of charter school students who received instruction from a certified teacher and charter school students who received instruction from a non-certified teacher.

2. There is no significant relationship between student reading achievement scores of charter school students who received instruction from a teacher who used one teaching style and charter school students who received instruction from a teacher who used a different teaching style.

Statistical Procedures

Data was entered into the 11.0 version of SPSS and statistical procedures were executed to determine acceptance or rejection of each null hypothesis. The first hypothesis was tested by a \( t \) test. This analysis was used to examine the effect of teacher certification status on student reading achievement scores because the independent variable, teacher certification status, produced nominal data in two subcategories certified and non-certified teachers, and the dependent variable, SAT9 scores, were interval data. The results of this test of significance are noted in Table 4. No significant difference was found, \( t (37) = .343, p > .05 \). Students who received instruction from a certified teacher versus a non-certified teacher did not differ significantly with regard to SAT9 reading percentile scores. Given this result, the first hypothesis was accepted. The second hypothesis was tested by using the Pearson \( r \) correlation because the independent variable, teaching style, and the dependent variable, SAT9 scores, produced interval data. Therefore, a statistical correlation, using the Pearson \( r \) was calculated examining the relationship between subjects’ predominant teaching styles and students’ SAT9 reading
Table 4.

*Teacher Certification Status and SAT9 Reading Percentile Scores*

<table>
<thead>
<tr>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>.343</td>
<td>37</td>
<td>.734</td>
<td>2.1952</td>
<td>6.4037</td>
<td>-10.7798</td>
</tr>
</tbody>
</table>
scores. As noted in Table 5 a weak, negative correlation that was not significant was found, \( r(2) = -.168, p > .05 \). Therefore, the second null hypothesis was accepted.

**Conclusion**

In conclusion, neither analysis showed an effect on and/or a relationship with student reading achievement scores. Therefore, the answer to the research question is that there appears to be no need for the NCLB Act to require certification for Arizona charter school teachers because this study showed the lack of an effect \( (p = .734) \) of teacher certification status on student reading achievement. It should be noted that while there was no effect of teacher certification on student achievement scores, this alpha level of \( p = .734 \) was greater than the alpha level \( p = .306 \) which represented the correlation between charter school teachers’ teaching style and student reading achievement.
Table 5.

*Teaching Style and SAT9 Reading Percentile Scores*

<table>
<thead>
<tr>
<th></th>
<th>SAT9 READING PERCENTILE</th>
<th>TEACHING STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAT9 READING PERCENTILE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson</td>
<td>1</td>
<td>-.168</td>
</tr>
<tr>
<td>Sig. (2-t)</td>
<td></td>
<td>.306</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td><strong>TEACHING STYLE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson</td>
<td>-.168</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-t)</td>
<td>.306</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>39</td>
<td>39</td>
</tr>
</tbody>
</table>
5. Discussion

For the reader’s convenience, the final chapter of this dissertation restates the research problem and reviews the methods used in this study. In addition, results are summarized and interpreted, the relationship of findings to previous research is discussed, recommendations for educators are made, and suggestions for future research are provided.

The problem statement, presented in Chapter 1 in the form of a research question was written as follows: Is there a need for the NCLB Act to require certification for Arizona charter school teachers, or, will this study show that teacher certification status has no effect on student reading achievement? Furthermore, will this study show that teacher certification status will have less of an effect on student reading achievement than teaching style?

Review of the Problem and Methodology

As explained in Chapter 1, the study reported here was quantitative and designed to analyze the effect and/or relationship between two or more variables. The purpose of the study was to determine if there was a significant effect of teacher certification status on student reading achievement, and to compare that outcome to the significance level of the relationship between teaching style and student reading achievement. To execute this quantitative study, data was gathered on three variables. The two independent variables were charter school teachers’ Arizona teacher certification status and the same charter school teachers’ teaching style, and the dependent variable was teachers’ class average SAT9 reading percentile score. Subjects used in this quantitative study were selected by convenience sampling. This non-random sampling procedure enlisted principal
volunteers, who were orally issued invitations both in group settings and individually to participate in this study. Volunteering principals agreed to provide teachers’ spring 2003 class average SAT9 reading percentile scores and permitted this researcher to request teacher participation in the study. The subjects were charter school teachers who taught grades third through sixth during the 2002-2003 school year and had returned to the same charter school for the 2003-2004 school year in an Arizona charter school that received Title I funds. Teachers, after signing an informed consent agreement, participated by providing nominal data in the form of a yes or no response with regard to Arizona teacher certification status as of the beginning of the 2002-2003 school year. In addition, each teacher was asked to complete Grasha’s Teaching Style Inventory, which was in the format of a 40 statement, seven point Likert scale. The subjects responded to each statement according to how they taught reading by selecting a numeral from the Likert scale. The teaching style data for this study was the totaled Likert scores. According to Grasha, “Everyone who teaches possesses each of the five teaching styles to varying degrees” (Grasha, 2001, p. 153). However, only teachers’ predominant teaching style, based on inventory scores, was used in this study to determine the significance of the relationship between teaching style and SAT9 reading percentile scores.

Finding subjects to provide the necessary data entailed several components. First, through the use of convenience sampling, principals volunteered to participate in this study after listening to oral invitations extended by this researcher in group settings and individually, while attending a three-day state charter school conference or monthly charter school luncheons. However, when some principals returned to the daily responsibilities of charter school administration, their interest to participate in the study
appeared to wane. Some principals were reachable by phone and appointments to visit those charter schools were set. In contrast, this researcher persistently attempted to contact additional principals, succeeding to make appointments with some, whereas others never responded to many phone messages. Secondly, the participating principals had to provide teachers’ class average SAT9 reading percentile scores, whether the scores were located in a file folder or a box found in the charter school office. Third, the teacher volunteers had to cooperate when asked about their teacher certification status. All subjects appeared to share this information without concern. Fourth, subjects had to be willing to complete Grasha’s Teaching Style Inventory either immediately or at a later time and return the teaching style inventory in a pre-paid, self-addressed envelope. Most all subjects indicated cooperation in this area by politely listening to the directions. However, 35% of the subjects chose not to return the inventory. Some subjects, 6%, were disqualified because they did not meet one of the criteria previously described. Therefore, out of 66 potentially qualified subjects, 39 participated in this study providing a 59% participation rate.

Summary of Results

Two statistical analyses were computed to determine the significance of each set of variables. A t test was used to determine the level of significant effect of teacher certification status, nominal data with two subcategories, on SAT9 reading percentile scores that were interval data. A Pearson r was used to determine if there was a significant relationship between teaching style and SAT9 reading percentile scores, as both of these data were interval. The results of the t test indicated no significant effect of teacher certification status on SAT9 reading percentile scores. Specifically, the results
indicated that 73 out of 100 times the results would occur by chance. The Pearson r found a weak, negative correlation that was not significant with results indicating that 31 out of 100 times the results would occur by chance.

Although neither analysis was statistically significant, the study did show that probability of these results occurring by chance was greater in the analysis of the effect of teacher certification status on student reading achievement scores than the relationship between teaching style and student achievement. Therefore, the answer to the research question is that there appears to be no need for the NCLB Act to require certification for Arizona charter school teachers because this study showed that teacher certification status had no significant effect on student reading achievement. Furthermore, the variable of teaching style was also not significantly related to student reading achievement.

Relationship of Findings to Prior Research

The results described above imply that charter school principals might have additional evidence to support a decision to follow Arizona state charter law and hire teachers on criteria other than teacher certification. This position, with regard to no significant effect of teacher certification status on student achievement is supported by a report developed by the Abell Foundation as well as Goldhaber and Brewer’s research. The Abell Foundation’s report, “Teacher Certification Reconsidered,” concluded that much of the research, which Darling-Hammond used to support a correlation between teacher certification and student achievement, was seriously flawed (Abell Foundation, 2001). For example, according to the Abell Foundation, Darling-Hammond cited research conducted by Wilson, 2001, which claimed value in teacher certification, had three subjects (Abell Foundation, 2001). In addition, The Abell Foundation noted Darling-
Hammond cited studies, such as the 1997 study by The Council on School Performance as support for teacher certification, which did not control for poverty (Abell Foundation, 2001). Goldhaber and Brewer’s empirical research concluded that mathematics and science students who had teachers with emergency credentials did no worse than students whose teachers had standard teaching credentials (Goldhaber & Brewer, 2000).

Despite supportive research indicating teacher certification does not have an effect on student achievement, the NCLB Act mandates that all public school teachers, including charter school teachers, hold full state certification. However, because state charter law supersedes the NCLB mandate, Arizona’s charter school teachers need not become certified. Despite the protection of Arizona charter school law, some principals in this study voiced concern regarding teacher certification and the federal mandate, and indicated plans to commence hiring only certified teachers. Considering that charter schools were established with the promise of regulations lifted for student achievement, it might be considered a regressive step should charter school principals begin to conform to bureaucratic regulations, especially in an area where state charter law protects said principals from teacher certification regulations.

The results also suggest that charter school administrators need not favor one teaching style over another teaching style. To support this study’s findings that teaching style had no significant relationship, Howell and Erickson found that there was no significant difference in achievement between students non-systematically assigned in structured versus open classroom (Howell & Erickson, 1978).

The SAT9 class average reading percentile scores gathered for this study ranged from the 15th percentile to the 85th percentile. Considering the scores represented class
averages, one might consider many of the reading percentile scores low. Neville Bennett’s work found that formal teaching styles were more closely associated with student achievement in basic skills than were informal styles (Bennett, 1976). Therefore, one might conclude that if more of the charter school teachers in this study began using Expert and Formal Authority teaching styles, SAT9 class average reading percentile scores might improve. However, Gayle’s theory concluded that a teacher’s personality was a strong, if not the first, contributing factor of a teacher’s teaching style (Gayle, 1994). This theory provides inference that changing to a more formal teaching style would not easily be achieved if that were not one’s predominate style. Grasha and Yangarber-Hicks also theorized that teaching style was part of one’s personal make-up and instructional processes that attempted to change one’s teaching style might in fact reinforce a preferred style (Grasha & Yangarber-Hicks, 2000). Therefore, the notion of changing one’s teaching style might not be realistic.

Although a single study cannot provide a sound basis for the elimination of state teacher certification, it does enlighten educators, policy makers, and other publics that teacher certification might not ensure student achievement. In addition, the Department of Education Office of Postsecondary Education revealed vast ranges on cut scores, or passing scores, among states on state professional skill examinations. Allowing such a discrepancy in each state’s determination of what constitutes proficiency in a selected skill area as part of a teacher’s certification process perceivably devalues the worth of teacher certification. As this study suggests, the answer to improved student achievement does not lay in such variables as teacher certification or teaching style.
Perhaps the ideas suggested in the International Reading Association’s (IRA) recent position statement hold the key to increased student reading achievement. The IRA stated that too much variability exists in teacher preparation programs and calls for major national investment in teacher preparation to ensure that every beginning teacher is competent to teach reading (International Reading Association, 2003). The IRA referenced Hoffman & Roller’s 2001 conclusion that some beginning teachers have up to 24 semester hours in reading and other teacher preparation programs require 3 semester hours of reading (International Reading Association, 2003). The NCLB mandates that schools use only researched-based programs, such as Put Reading First. Therefore, perhaps teacher preparation programs should focus upon developing highly qualified reading teachers. Such teachers would more likely understand the foundations of reading, instructional strategies, methods to assess students’ needs and development, as well as techniques to instill a love for reading among students (International Reading Association, 2003).

Recommendations for Future Research

As previously mentioned, NCLB requires full state certification of public school teachers by the beginning of the 2005-2006 school year. Therefore, additional research seems needed on the effect of teacher certification on student achievement. A future study might rank levels of education with regard to teacher certification, as this might provide more insight to the relationship. Instead of using teacher certification status as nominal data, it is suggested that researchers use ordinal data by ranking teacher’s educational levels such as High School Diploma, Associates Degree, Bachelor’s Degree
in another field, Bachelor’s Degree in Education, certification in another state, or full Arizona state certification.

A second and third suggestion for future research is to repeat this exact study with a larger population in order to increase generalizability. Repeating the study using a greater population of Arizona charter school teachers would be one suggestion as well as repeating the study in another state that has different charter laws.

A correlational study between teaching style and individual student SAT9 reading percentile scores would be a fourth suggestion for future research. This study did not find significance when correlating teaching style and teachers’ class average SAT9 reading percentile scores. However, when using individual student’s percentile scores in reading, one might find different results.

Conclusion

Public schools, including charter schools, across the country are in process of meeting the requirements of the NCLB Act or risk losing federal monies. School administrators are determining how to make sure teachers meet the highly qualified criteria of NCLB. Approximately half of Arizona’s charter school teachers possess teacher certification, yet those without Arizona teacher certification are not required to do so due to prior state charter law. This study has the potential to support charter school principals in hiring a teacher who does not possess Arizona teacher certification as this study showed no significant effect of teacher certification status on student reading achievement. In addition, this study provided data that indicated no significant relationship between teaching style and student reading achievement. Therefore, as charter school principals determine how to ensure growth in student achievement scores,
as required by NCLB, variables other than teacher certification status and teaching style should be considered.

The launch of Sputnik stimulated interest in improving student achievement and encouraged research, debate, and the implementation of numerous new strategies. This trend continued after the publication of A Nation at Risk. The restructuring phase of America's public schools produced a new form of school choice known as charter schools and although charter schools were free from regulations in exchange for accountability in the area of student achievement growth, charter schools must now face regulations mandated by NCLB or risk losing federal monies. Therefore, as Arizona's charter school principals begin to search for highly qualified teachers and determine methods to ensure student achievement growth, this quantitative study might provide an alternative direction for charter school administrators. It must be taken into consideration that this study relied on convenience sampling, demographics of sample schools, and the persona of volunteering teacher-subjects when evaluating the results. However, based upon this study's results, there appears to be no need for the NCLB Act to require certification for Arizona charter school teachers because this study showed that teacher certification status had no significant effect on student reading achievement. Furthermore, the variable of teaching style was also not significantly related to student reading achievement. Therefore, educators must rely upon identifying variables other than teacher certification status or teaching style when searching for the key to improved student achievement.
References


Stevens, A. (2004, January 21). Horne promises to continue ‘raising the bar’ for state school system. The Fountain Hills Times, p5A


Appendix A

Permission to use Teaching Style Inventory

Hello Jill Andrews:

Thanks for the information you sent. I appreciate it. Unfortunately the web has turned into a "free for all" and any information that is in an electronic format can be posted with our without the author's position. I understand the norms currently in existence and basically am curious about where people have come in contact with the instrument more than anything else. Very little one can do to stop someone from posting it so I basically monitor things to make sure no one is selling it online.

I've never sold any of the instruments I've developed. They are available to use for free of charge and all that I've asked is that people give me a summary of the outcome of their study. My work is done not only for my personal curiosity as a psychologist but it's "for the people." I see no need to set up barriers to people using it.

I am familiar with the Glenda Short dissertation and had several communications with her. There's a lot of interest in the concepts outside the US including thesis work in the Philippines, Turkey, Spain, Malaysia, Singapore, Hong Kong, Australia, Thailand, and other places. As I tell people, the instrument is a work in process and the underlying model and concepts benefit from what people do with it. I am just delighted that others are interested.

If you want to use the TSI in your study, you certainly have my permission to make copies and do so. Just send me a summary of your outcomes.

Take care,

Tony Grasha
Appendix B

Grasha’s Teaching Style Inventory

Teaching Styles Inventory: Version 3.0
Copyright © 1991, 1994, 1997 by Anthony F. Grasha, Ph.D.

Respond to each of the items below in terms of how they apply to each of the two courses you listed on the first page of this questionnaire. Try to answer as honestly and as objectively as you can. Resist the temptation to respond as you believe you “should” or ought to think or behave or in terms of what you believe is the “expected or proper thing to do.” Use the following rating scale when responding to each item:

<table>
<thead>
<tr>
<th>Strongly</th>
<th>Somewhat</th>
<th>Neither</th>
<th>Somewhat</th>
<th>Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>Disagree</td>
<td>Agree or Agree</td>
<td>Disagree</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Very, Unimportant

Aspect of My Approach to Teaching this Course

Very Important

Aspect of My Approach to Teaching this Course

<table>
<thead>
<tr>
<th>Class</th>
<th>Course 1</th>
<th>Course 2</th>
</tr>
</thead>
</table>

01. Facts, concepts, and principles are the most important things that students should acquire.
02. I set high standards for students in this class.
03. What I say and do models appropriate ways for students to think about issues in the content.
04. My teaching goals and methods address a variety of student learning styles.
05. Students typically work on course projects alone with little supervision from me.
06. Sharing my knowledge and expertise with students is very important to me.
07. I give students negative feedback when their performance is unsatisfactory.
08. Students are encouraged to emulate the example I provide.
09. I spend time consulting with students on how to improve their work on individual and/or group projects.
10. Activities in this class encourage students to develop their own ideas about content issues.
11. What I have to say about a topic is important for students to acquire a broader perspective on the issues in that area.
12. Students would describe my standards and expectations as somewhat strict and rigid.
Use the following rating scale when responding to each item:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither</td>
<td>Somewhat Agree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very, Unimportant</td>
<td>Aspect of My Approach to Teaching this Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Classes

Course 1/Course 2

13. I typically show students how and what to do in order to master course content.
14. Small group discussions are employed to help students develop their ability to think critically.
15. Students design one or more self-directed learning experiences.
16. I want students to leave this course well prepared for further work in this area.
17. It is my responsibility to define what students must learn and how they should learn it.
18. Examples from my personal experiences are used to illustrate points about the material.
19. I guide students' work on course projects by asking questions, exploring options, and suggesting alternative ways to do things.
20. Developing the ability of students to think and work independently is an important goal.
21. Lecturing is a significant part of how I teach each of the class sessions.
22. I provide very clear guidelines for how I want tasks completed in this course.
23. I often show students how they can use various principles and concepts.
24. Course activities encourage students to take initiative and responsibility for their learning.
25. Students take responsibility for teaching part of the class sessions.
26. My expertise is typically used to resolve disagreements about content issues.
Teaching Styles Inventory: Version 3.0

Use the following rating scale when responding to each item:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Somewhat Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neither</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Very Unimportant
Aspect of My Approach to Teaching
this Course

Very Important
Aspect of My Approach to Teaching
this Course

<table>
<thead>
<tr>
<th>Item</th>
<th>Course 1:</th>
<th>Course 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. This course has very specific goals and objectives that I want to accomplish.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Students receive frequent verbal and/or written comments on their performance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. I solicit student advice about how and what to teach in this course.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Students set their own goals for completing independent and/or group projects.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Students might describe me as a &quot;storehouse of knowledge&quot; who dispenses the facts, principles, and concepts they need.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. My expectations for what I want students to do in this class are clearly stated in the syllabus.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Eventually, many students begin to think like me about course content.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Students can make choices among activities in order to complete course requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. My approach to teaching is similar to a manager of a work group who delegates tasks and responsibilities to subordinates.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. There is more material in this course than I have time available to cover it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. My standards and expectations help students develop the discipline they need to learn.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. Students might describe me as a &quot;coach&quot; who works closely with someone to correct problems in how they think and behave.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. I give students a lot of personal support and encouragement to do well in this course.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. I assume the role of a resource person who is available to students whenever they need help.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

Teaching Style Inventory Score Sheet

<table>
<thead>
<tr>
<th>Teaching Styles Inventory: Version 3.0</th>
<th>Page 3</th>
</tr>
</thead>
</table>

1. Copy the ratings you assigned to each item in the spaces provided below.

<table>
<thead>
<tr>
<th>Course #1</th>
<th>Course #2</th>
<th>Course #1</th>
<th>Course #2</th>
<th>Course #1</th>
<th>Course #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>02</td>
<td>03</td>
<td>04</td>
<td>05</td>
<td>06</td>
</tr>
<tr>
<td>06</td>
<td>07</td>
<td>08</td>
<td>09</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>30</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
</tbody>
</table>

2. Sum the ratings for each column and place the total in the spaces below.

3. Divide each column score above by 8 to obtain the average numerical rating you assigned to the items associated with each teaching style. Place your average rating to the nearest decimal point in the spaces below.

<table>
<thead>
<tr>
<th>Expert</th>
<th>Formal Authority</th>
<th>Personal Model</th>
<th>Facilitator</th>
<th>Delegator</th>
</tr>
</thead>
</table>

4. The teaching styles that correspond to each pair of columns are shown above.

5. Range of low, moderate, and high scores for each style based on the test norms:

<table>
<thead>
<tr>
<th>Low Scores</th>
<th>Moderate Scores</th>
<th>High Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert</td>
<td>Formal Authority</td>
<td>Personal Model</td>
</tr>
<tr>
<td>1.0-5.0</td>
<td>1.0-4.0</td>
<td>1.0-4.0</td>
</tr>
<tr>
<td>2.0-6.0</td>
<td>2.0-5.0</td>
<td>2.0-5.0</td>
</tr>
<tr>
<td>3.0-7.0</td>
<td>3.0-6.0</td>
<td>3.0-6.0</td>
</tr>
<tr>
<td>4.0-7.0</td>
<td>4.0-6.0</td>
<td>4.0-6.0</td>
</tr>
<tr>
<td>5.0-7.0</td>
<td>5.0-6.0</td>
<td>5.0-6.0</td>
</tr>
</tbody>
</table>
Appendix D

Analyzing Teaching Style Inventory

In order to respond to this activity, first complete the Teaching Styles Inventory.

Recording Your Responses to the Teaching Styles Inventory

1] Compute your average score on each of the styles using the scoring key

provided on page 164. Use your average scores on each style to rank order

their occurrence in each of the two classes you rated. Use a rank of 1 for the

teaching style with the highest average score and a 5 for the one with the

lowest score. Rank order the others accordingly. If you had a tie score on

two styles, assign both the same rank. Place the ranks you obtained for

each style on the appropriate lines below:

<table>
<thead>
<tr>
<th>Course #1</th>
<th>Course #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert</td>
<td></td>
</tr>
<tr>
<td>Formal Authority</td>
<td></td>
</tr>
<tr>
<td>Personal Model</td>
<td></td>
</tr>
<tr>
<td>Facilitator</td>
<td></td>
</tr>
<tr>
<td>Delegator</td>
<td></td>
</tr>
</tbody>
</table>

2] Use the norms for the test in the scoring key on page 164 to determine whether

each score is low, moderate, or high. Place an L to indicate low score. M for

moderate, and H for a high score in each of the brackets shown above.

A Few Moments of Private Reflection

1] Examine the rank ordering of each style and the magnitude of the scores for

each class. In what ways are your teaching styles similar and different in

each course?

2] If the occurrence of the styles are similar in each class, is this appropriate?

That is, given the nature of the content, the level of each course, the types

of students, and your personal beliefs about education—should your style

of teaching in each class be the same?

3] Did you answer #2 to the last question? If so, what teaching style[s] ought

to be emphasized that currently are not prominent in how you teach?

4] Was the distribution of teaching styles for each course different? If it was,

how did the content, the level of each class, the types of students, and your

beliefs about education influence the styles you used?

5] What additional factors affected the teaching styles you used?

6] Compare your scores to the information reported on a national sample of

faculty on pages 165-168. This data shows how teaching styles vary with a

teacher’s rank, course level, gender, and academic discipline. In what ways

are your styles similar and different from the national sample?
Appendix E

Informed Consent Agreement

Teacher Certification, Teaching Style, and Student Achievement in Arizona Charter Schools

Please read this consent agreement carefully before you decide to participate in the study. You will receive a copy of this agreement.

Purpose of the research study: The purpose of the study is...to determine if there is a correlation between a teacher’s certification status and his/her students’ reading achievement scores as compared with the same teacher’s teaching style and his/her students’ reading achievement scores.

What will you do in the study: Answer a 40, forced answer, teaching style inventory. Also, inform the researcher whether or not you possess a valid Arizona teaching certificate, if this information is not in the charter school’s office.

Time required: You will spend about 30 minutes in the session. The total time required is about 30 minutes.

Benefits: There is no guarantee of direct benefits to you in participating in this study. The study may help us understand...if teacher certification correlates with students’ reading achievement test scores. Or, if there a greater correlation between a teacher’s teaching style and his/her students’ reading achievement test scores. You may benefit by...knowing if teacher certification has a correlation, or not as great a correlation, with student reading achievement as compared with teaching style.

Confidentiality: (Explain confidentiality procedure, for example:)

The information that you give in this study will be handled confidentially. Your information will be assigned a code number. The list connecting your name to this number will be kept in a locked file, located off this school’s property. When the study is completed and that data have been analyzed, this list will be destroyed.

Voluntary Participation: Your participation in the study is completely voluntary, but is greatly appreciated. If you choose to participate, your name will be entered in a drawing and one of the 30+ teacher participants will receive a $100 gift certificate to Learning is Fun.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.
How to withdraw from the study: If you wish to withdraw from the study you should notify this researcher, Jill Andrews, in writing. Send notification to withdraw to her home:

Jill Andrews  
9415 N. Summer Hill Blvd.  
Fountain Hills, Arizona 85268 ... There is no penalty for withdrawing.

Payment: You will receive no payment for participating in the study. (If any payment is offered describe it here.) Of those who participate, the researcher will select one teacher at random; to receive a $100 gift certificate at Learning is Fun.

Who to contact if you have questions about the study: Jill Andrews (480) 837-1171

Who to contact about your rights in the study: Dr. Randall Davy, Chairman, Institutional Review Board, Liberty University, Lynchburg, VA 24502. Telephone (804) 582-2440

Agreement: The study described above has been explained to me. I voluntarily consent to participate in this activity. I have had an opportunity to ask questions. I understand that future questions I may have about the research or about my rights, as a subject will be answered by one of the investigators listed above. I hereby release and agree to indemnify and hold harmless Liberty University, its agents, employees, successors and assigns, from any liability for any claims that may arise as a result of this research study and/or my participation therein, and in consideration of the benefits derived by me from this research study. I also hereby agree not to sue or otherwise assert any claim against Liberty University, its agent or employees for any cause of action arising out of the research study referenced above.

Signature of Subject:

________________________________________

Date:

________________________________________
## Appendix F

### History of School Contacts

<table>
<thead>
<tr>
<th>School Code</th>
<th>Number tested</th>
<th>Number qualified</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 12003</td>
<td>4</td>
<td>2/4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Two subjects were not qualified who principal said were.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 22003</td>
<td>6</td>
<td>3/3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>One subject had no SAT9 class average reading score. Two subjects obtained Arizona teaching certification mid year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. 32003</td>
<td>10</td>
<td>6/10</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>One subject omitted page two on the teaching style inventory. Three subjects did not return the teaching style inventory.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 42004</td>
<td>5</td>
<td>4/5</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>One teacher taught 3rd grade this year, but 2nd last year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. 52003</td>
<td>0</td>
<td>0/0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Principal sent email stating no interest in participation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. 62003</td>
<td>0</td>
<td>0/0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Principal would not return phone calls.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 72003</td>
<td>13</td>
<td>1/13</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Twelve teachers did not return teaching style inventory.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. 82003</td>
<td>2</td>
<td>2/2</td>
<td>2</td>
</tr>
<tr>
<td>9. 92003</td>
<td>1</td>
<td>1/1</td>
<td>1</td>
</tr>
<tr>
<td>10. 102003</td>
<td>3</td>
<td>1/3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>One subject did not return teaching style inventory. One subject had no SAT9 class average reading score.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. 112003</td>
<td>3</td>
<td>3/3</td>
<td>3</td>
</tr>
<tr>
<td>12. 122003</td>
<td>1</td>
<td>0/0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>One subject did not return teaching style inventory.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. 132003</td>
<td>7</td>
<td>7/7</td>
<td>7</td>
</tr>
<tr>
<td>14. 142003</td>
<td>6</td>
<td>5/6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>One subject would not sign Informed Consent Agreement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. 152003</td>
<td>1</td>
<td>0/0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>One subject did not return teaching style inventory.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. 162003</td>
<td>1</td>
<td>1/1</td>
<td>1</td>
</tr>
<tr>
<td>17. 172003</td>
<td>0</td>
<td>0/0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Principal would not return phone calls.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. 182003</td>
<td>3</td>
<td>3/3</td>
<td>3</td>
</tr>
<tr>
<td>19. 192003</td>
<td>0</td>
<td>0/0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>a. Principal would not return phone calls.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

66 Teaching Style Inventories distributed 39 Returned and qualified
Appendix G

Thank You Note Sent to Principals

Dear __________,

I want to thank you for helping me secure data for my dissertational research.

Your teachers were most cooperative and your patience, as we determined the Stanford 9 scores, was greatly appreciated.

When I have a minimum of 30 teaching style inventories completed, I will draw one teacher to win the $100 gift certificate at Learning is Fun. I will let you know who wins – it might be one of your teachers!

Thank you again,

Sincerely,

Jill Andrews, Ed.D Candidate
Appendix H

Letter to Announce Gift Certificate Winner

January 12, 2004

Dear ______________,

I again want to thank you and your teachers for participating in my research study. The data gathering stage of this dissertation is complete and as you may recall, an incentive for the teachers to complete the teaching style inventory was a chance to be the winner of a $100.00 gift certificate at Learning is Fun.

The drawing occurred Saturday, January 10, 2004 and the winner was a 3rd grade teacher from a Tempe Charter School. She was presented with the $100 Learning is Fun gift certificate today, Monday, January 12, 2004.

Due to the confidentially clause in the Informed Consent Agreement, which each subject signed, I am not at liberty to share the name of the winner or her school. However, I can assure you, she was thrilled!

Your help has been greatly appreciated.

Sincerely,
Jill Andrews, Ed.D Candidate