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IMPACT OF THE EDUCATION LEVEL OF VOLUNTARY
PREKINDERGARTEN TEACHERS UPON KINDERGARTEN
STUDENT READINESS RATES

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the Department of Teaching, Learning, and Leadership
in the College of Education
at the University of Central Florida
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ABSTRACT

This study addressed the problem of insufficient information concerning the impact of variability in requirements and credentials for Florida Voluntary Prekindergarten (VPK) teachers statewide on VPK program quality. This study examined the variance in the professional credentials of VPK lead instructors in Florida school districts and whether or not this variability makes a significant difference in program quality as measured by VPK Provider Kindergarten Readiness Rates.

Analysis of variance (ANOVA) and analysis of covariance (ANCOVA) statistical tests were conducted, as appropriate, for each of four research questions. Research findings indicated there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates based on the professional credentials for VPK lead instructors when controlling for the socio-economic status of the children enrolled at each site.

Recommendations were made for future research to replicate the study using a different indicator of program quality, perhaps a measure of student progress throughout the school year. Also, the first groups of students to participate in Florida's voluntary prekindergarten (VPK) program are now enrolled in upper elementary grades making a longitudinal study both feasible and worthwhile in evaluating the effectiveness of a large-scale preschool program. The researcher further recommended that the idea of improving the qualifications of the prekindergarten workforce must persist, supported by continued research and adequate funding.

This dissertation is dedicated to my husband, Randy, whose unwavering support and encouragement make my personal and professional endeavors possible; my sons, Kyle and Eric, who are a source of great joy, pride and inspiration; and my parents, Annette and George, who taught me to embrace learning and believe that anything is possible through determination and a strong work ethic.

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TABLE OF CONTENTS

LIST OF TABLES	xi
LIST OF ABBREVIATIONS.....	xii
CHAPTER ONE: INTRODUCTION.....	1
Purpose of the Study	6
Statement of the Problem.....	7
Research Questions and Hypotheses	8
Delimitations.....	9
Limitations	12
Definition of Terms.....	13
Conceptual Framework.....	17
Methodology	21
Research Design.....	21
Population	22
Sample.....	23
Data Collection and Analysis.....	23
Summary.....	26
Organization of the Study	26

CHAPTER TWO: LITERATURE REVIEW	28
Preschool Education in the United States	29
Head Start.....	31
Preschool Mandated Through Litigation	33
State-Funded Universal Prekindergarten Programs.....	35
Current Status of Preschool Education	39
Prekindergarten Program Quality	42
NIEER Program Standards	42
Measures of Kindergarten Readiness.....	47
Prekindergarten Effectiveness Studies.....	50
High/Scope Perry Preschool Study.....	51
Chicago Longitudinal Study	52
Abecedarian Project	54
Head Start Impact Study	56
Prekindergarten Teacher Education Level and Professional Qualifications.....	57
Credentials for Florida Voluntary Prekindergarten Teachers	64
Strengthening the Prekindergarten Workforce	66
Studies Related to Education Level of the Teacher	68

New Jersey Abbott Preschools.....	69
Meta-analysis of Prekindergarten Programs	71
Tulsa Prekindergarten Study.....	74
Florida Voluntary Prekindergarten Program Studies.....	75
Relation of Literature to the Method of Study	80
Summary	82
CHAPTER THREE: METHODOLOGY	84
Statement of the Problem.....	87
Research Questions and Hypotheses	88
Research Design.....	90
Population	92
Sample.....	92
Data Collection	93
Data Analysis	96
Summary	101
CHAPTER FOUR: ANALYSIS OF DATA.....	102
Descriptive Statistics.....	103
Population	103

Samples	108
Findings.....	110
Research Question One.....	111
Research Question Two	112
Research Question Three	117
Research Question Four.....	121
Summary	125
CHAPTER FIVE: FINDINGS AND RECOMMENDATIONS	128
Summary of Results	131
Research Question One.....	131
Research Question Two	132
Research Question Three	134
Research Question Four.....	136
Discussion of the Findings.....	137
Implications for Policy and Practice	144
Recommendations for Future Research	147
Conclusion	151
APPENDIX: IRB APPROVAL LETTER.....	155

LIST OF REFERENCES 157

LIST OF TABLES

Table 1: Questions, Variables, Data and Analysis Methodology	25
Table 2: NIEER Quality Standards Checklist Summary	45
Table 3: Independent Variables-Professional Qualifications	95
Table 4: Study Population-Public School Voluntary Prekindergarten Programs	105
Table 5: Study Population-Lead Instructor Education Level	106
Table 6: Study Population-Instructor Certification Credentials	107
Table 7: Study Population-Instructor Certification Status.....	108
Table 8: ANOVA Results-Mean Readiness Rates Based on Minimum Instructor Education Level	112
Table 9: ANCOVA Results-Readiness Rates and Instructor Education Level	115
Table 10: Readiness Rates Means and Standard Deviations by Education Level.....	116
Table 11: Differences in Readiness Rates by Instructor Education Level.....	117
Table 12: ANCOVA Results-Readiness Rates and Instructor Certification Credential	120
Table 13: Readiness Rates Means and Standard Deviations by Instructor Certification Credential	120
Table 14: Differences in Readiness Rates by Instructor Certification Credential	121
Table 15: ANCOVA Results-Readiness Rates and Instructor Certification Status.....	124
Table 16: Readiness Rates Means and Standard Deviations by Instructor Certification Status.....	124
Table 17: Differences in Readiness Rates by Instructor Certification Status	125

LIST OF ABBREVIATIONS

CDA	Child Development Associate
ECHOS	Early Childhood Observation System
FAIR	Florida Assessments for Instruction in Reading
FCCPC	Florida Child Care Professional Credential
FDOE	Florida Department of Education
FDOE OEL	Florida Department of Education Office of Early Learning
FLKRS	Florida Kindergarten Readiness Screener
NAEYC	National Association for the Education of Young Children
NECC	National Early Childhood Certificate
NIEER	National Institute for Early Education Research
OPPAGA	Office of Program Policy Analysis and Government Accountability
UPK	Universal Prekindergarten
USED	United States Education Department
VPK	Voluntary Prekindergarten

CHAPTER ONE: INTRODUCTION

In recent years, the importance of a quality prekindergarten experience has moved to the forefront of national attention. The passage of the American Recovery and Reinvestment Act (ARRA) provided momentum for expanding preschool opportunities for the nation's youngest citizens (H.R. 1--111th Congress, 2009). Guidance on the use of Title I ARRA funds recommended that the money be used to "expand high-quality early childhood educational services" (U. S. Department of Education, 2009, Uses of Title I Part A Funds, para. 3). The commitment to early childhood education from a national level is further illustrated by President Obama's Zero to Five Initiative introduced as part of his budget request for the 2010 fiscal year. This initiative placed a strong focus on early childhood and earmarked funds to be distributed to states through competitive grants to develop plans and the infrastructure necessary to raise the quality of publicly-funded early learning programs (Democratic Policy Committee, 2009, Early Education, para. 1). The Early Learning Challenge Fund was introduced as part of the Race to the Top legislation and approximately \$500 million dollars was committed to the grant program for Fiscal Year 2011 (Turner, 2011, para. 1). The intent of this funding was to equalize the early childhood offerings within states and across the nation to provide children, especially those from low income families, with increased access to high-quality preschool programs.

According to the National Institute for Early Education Research (Barnett et al., 2011), 39 states funded preschool programs for the 2010-11 program year. The number

of states financing some type of prekindergarten program is reflective of the national attention to the significance of early childhood education in preparing students for later school success. The National Association for the Education of Young Children (NAEYC, 2009) emphasized that this expansion of prekindergarten programs and the increased educational accountability of No Child Left Behind legislation have led to an increased recognition of preschool's educational purpose and potential for supporting K-20 education goals. There is a "blurring of the preschool-elementary boundary" and preschool teachers are being asked to "help prepare students to demonstrate the required proficiencies" necessary for mandated accountability obligations in later grades (p. 3).

In 2002, Florida voters passed into law the provision for a state funded preschool program to be implemented by the 2005-06 school year. As a result, all four year old children in Florida are eligible for a free, publicly funded preschool program called Voluntary Prekindergarten (VPK). The intent of the program is to prepare children for kindergarten by providing quality instruction that facilitates the development of skills necessary to become thriving students. By Florida Statute, both public school districts and private prekindergarten providers may offer VPK if they adhere to all of the requirements outlined in the law. Some of the requirements defined in the statute include entry age for students, number of instructional hours, instructor credentials and performance standards.

The Florida Voluntary Prekindergarten (VPK) law introduced a level of accountability not previously present in early childhood education by requiring the establishment of a statewide kindergarten screening that assesses each student's readiness

for kindergarten based on the VPK education standards adopted by the Florida Department of Education. The results of this screening are used to calculate a kindergarten readiness rate for each VPK provider. When looking at the variance in readiness rates among VPK providers across the state, stakeholders may begin to question what factors impact program quality. Perhaps one factor creating a variance in program quality is the education level of the lead instructor. Currently, the qualifications for the lead instructor for a VPK class range from those with a high school education and a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC) to certified teachers with a bachelor's degree or higher. The FCCPC is a credential training program approved by the Florida Department of Children and Families. The program consists of specific requirements including 120 hours of training in early childhood instruction and 480 contact hours with young children (Florida Department of Children and Families, 2012). A Child Development Associate (CDA) credential requires a high school diploma and has training requirements similar to the FCCPC. Persons with a CDA qualify for a National Early Childhood Certificate.

In the 2005 National Prekindergarten Study, researchers found it is not uncommon for preschool teachers to lack basic educational credentials (Gillman, 2005). Although the study highlights research on teacher education that “has shown that preschoolers learn best in classes taught by well-trained teachers” fewer than 50% of preschool teachers across the United States reported having a bachelor's degree (Gillman, 2005, p. 4). Gillman's study involved a survey of 3,898 prekindergarten teachers from 52 statewide prekindergarten programs operated in 40 states. Approximately 13% of those

surveyed reported having a high school diploma or GED as their highest degree. “14% had an associate’s degree (A.A.), 49.4% had a bachelor’s degree (B.A.), and 23.6% had obtained a master’s degree or higher (M.A.+)” (p. 4). According to the study’s findings, 34.6% of all preschool teachers work in one of the eight states that require no college degree or formal credential for prekindergarten instructors.

A 2009 position statement by the National Association for the Education of Young Children (NAEYC) recognized the teacher as being central to high-quality early education and emphasized that instructor quality and effectiveness should be a top priority, especially in the current climate of expanding publicly funded preschool programs. Early childhood education requires specialized skills that address the unique learning needs of young children. “Children benefit most from teachers who have the skills, knowledge, and judgment to make good decisions and are given the opportunity to use them” (NAEYC, 2009, p. 5).

The National Institute for Early Education Research (NIEER) identifies teacher qualifications as a measurable quality standard used to evaluate state funded preschool programs. The NIEER benchmark for program instructors is a bachelor’s degree. This standard is in line with imminent changes to state and federal requirements for instructors in public prekindergarten programs. The federal laws regarding credentialing requirements for Head Start teaching staff are changing to require a college education for teachers employed by the program. By September, 2013, the requirement will be that at least 50% of Head Start teachers have a bachelor’s or advanced degree in early childhood or a degree in any subject with appropriate coursework in early childhood and experience

working with preschool children (Early Childhood Learning & Knowledge Center, 2011). At the same time, instructional assistants will be required to have a Child Development Associate (CDA) credential as a minimum requirement to be employed by Head Start.

Florida Statute 1002.65(1) proclaims, “. . . there is a strong relationship between the skills and preparation of prekindergarten instructors and the educational outcomes of students in the voluntary prekindergarten education program” (Voluntary Prekindergarten Education Program, 2011). A stated *aspirational goal* of the Florida Legislature is that all prekindergarten instructors hold at least a bachelor’s degree in early childhood or child development by the 2013-14 school year. The present minimum requirement for voluntary prekindergarten (VPK) instructors is a high school diploma and a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate, which can be issued to a person with a Child Development Associate (CDA) credential. Since Florida law does not currently require a bachelor’s degree for VPK instructors, the impact of an instructor’s education level on program quality must be studied.

In their review of research regarding a possible link between teacher credentials and student achievement, Guarino, Hamilton, Lockwood, Rathbun, and Hausken (2006) found “research literature devoted to detecting the effects of specific teacher qualifications is inconsistent and sparse” (p. 3). Therefore, research designed to study the impact of teacher qualifications is pertinent, especially in the field of early childhood education. The new credentialing requirements for Head Start teachers and the Florida Legislature’s aspirational goal of having degreed teachers for voluntary prekindergarten (VPK) provide evidence that a study to investigate whether or not the professional

credentials of VPK instructors make a difference in program quality was both noteworthy and timely. Research on this topic was significant especially when the additional costs required to hire degreed teachers as preschool instructors may be questioned by school district leaders if they don't see the value in having a highly qualified staff for prekindergarten. For school districts that currently require certified or degreed teachers for the VPK program, the additional funding required to do so could be questioned in the current budget climate. The findings of this study may provide insight for decision makers who suggest that school districts employ non-degreed instructors as a cost saving measure. The information may also prove beneficial for school districts considering raising the credentialing standards for VPK teachers in an effort to meet the state's aspirational goal and impending changes to federal rules.

Purpose of the Study

Florida statutory language recognizes the link between having well trained teachers in preschool classrooms and program quality (Voluntary Prekindergarten Education Program, 2011). The purpose of this study was to investigate the impact of an instructor's education level and credentials on program quality as indicated by the Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates and add to the body of knowledge on promoting quality prekindergarten programs. The desired outcome of the study was to provide information for VPK stakeholders, including parents, teachers, administrators, and lawmakers regarding the role of teacher education

level and credentials in providing high-quality preschool experiences for Florida's children.

Statement of the Problem

Prior to initiating this study, there was insufficient information concerning the impact of variability in requirements and credentials for Florida Voluntary Prekindergarten (VPK) teachers statewide on VPK program quality. The available data focused on a subset of state VPK programs and does not differentiate public school VPK programs from private providers. As stated in the introduction, the current minimum requirement for a Florida VPK lead instructor is a high school education and a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC). However, some public school VPK providers require more advanced credentials for instructors such as a bachelor's degree in early childhood and/or the appropriate state teacher certification. This study provided answers as to whether or not the variability in credentialing requirements for VPK instructors made a difference in program quality. For the purpose of this study, program quality was defined using the VPK Provider Kindergarten Readiness Rate calculated for each program site by the Florida Department of Education/State Board of Education.

Research Questions and Hypotheses

1. To what extent does the mean VPK Provider Kindergarten Readiness Rate for each public school district differ based on the minimum education level required for a lead instructor in the program?

H_{01} : There is no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rate for each public school district based on the minimum education level required for a lead instructor in the program.

2. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program?

H_{02} : There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program.

3. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the certification credential of the

lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.S. or A.A. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program?

H₀₃: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the certification credential of the lead instructor (Florida Child Care Credential or National Early Childhood Certificate, A.S. or A.A. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program.

4. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program?

H₀₄: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program.

Delimitations

This study was delimited by parameters set by the researcher. Those delimitations are defined and listed as follows:

1. The only voluntary prekindergarten (VPK) programs considered for the study were those with a VPK Provider Kindergarten Readiness Rate calculated by the Florida Department of Education/State Board of Education for 2010-11.
2. Only those VPK programs operated in during the regular school year were included in the study. Summer VPK programs were not part of the population for the study.
3. The only program sites included in the study were those operating a voluntary prekindergarten (VPK) program in a Florida public school.
4. The only VPK programs under study were those with a reported socio-economic status, or the percentage of students participating in the federal free or reduced-price lunch program. A program must have at least 10 students receiving free or reduced-price lunches to have a poverty level recorded.
5. This study was delimited to researching the education level of the lead instructor only with no consideration for the assistant's credentials. The typical VPK class has two adults working with the students, a lead instructor and an instructional assistant (the state refers to this person as the "second adult").
6. The VPK Provider Kindergarten Readiness Rate for each school is an average and not reported for each classroom; therefore, the study was delimited by the inability to determine each individual instructor's specific impact on a program's readiness rate.

7. A further delimitation associated with the individual VPK provider readiness rates being applied to all classes at a program site is the variance in the credentials of the instructors is not accounted for as it relates to the readiness rate. Although the site may have received a high readiness rate, it was correlated to each instructor equally, regardless of the performance of their individual classes.
8. The study was delimited by defining program quality with a single indicator, the Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate. This readiness rate serves as an indicator of how well a VPK provider has prepared students to be ready for kindergarten and is based on the state education standards for four-year old children.
9. The study did not address other measures of program quality such as environmental rating scales or individual student achievement.
10. The study was delimited by using the reported percentage of children in each program receiving free or reduced priced lunches as the poverty level for each program site. This statistic was the only information available to the researcher for the purpose of indicating a socio-economic status indicator for each program site.
11. The study was delimited by the exclusion of other variables such as the impact of parent income, education level, and home language on readiness rates. These delimitations mean that the findings of the study are not generalized to other preschool settings, including private providers of VPK.

Limitations

This study was limited by the following assumptions and expectations:

1. All teachers employed in a public school voluntary prekindergarten (VPK) program meet the minimum qualifications required by law (high school education and a Florida Child Care Professional Credential or National Early Childhood Certificate).
2. The VPK Provider Kindergarten Readiness Rates reported on the Florida Department of Education website were accurate.
3. The reported poverty level or percentage rate of students receiving free or reduced price lunches as part of the National School Lunch Program indicated for each school on the VPK Provider Kindergarten Readiness Rate website was accurate.
4. The readiness rate and poverty level data were reported by program site, rather than by classroom. For the purposes of this study, this data was matched to each classroom at the site although the actual readiness rate or poverty level for the individual class may be higher or lower than reported. The study is limited by an inability to determine the actual readiness rate and poverty level for individual classes.
5. The teacher education level or credential posted for each VPK provider by the Florida Department of Education Office of Early Learning was accurate and up to date.

6. The scope of this study was limited to the information and data that were available to the researcher through publicly available sources.

Definition of Terms

1. Bachelor's Degree in Child Development: A four year college degree that generally does not lead to teacher certification. Persons with a child development degree engage in studies of young children from birth through kindergarten age. The emphasis is on providing education in a safe, nurturing environment, utilizing developmentally appropriate practices, and collaborating with families (University of Central Florida, 2011).
2. Bachelor's Degree in Early Childhood: A four year college degree that leads to certification in Pre-K-Primary Education (PK-3) and emphasizes educating children between the ages of 3 and 8 years old in a variety of settings to include public and private schools, preschools, and Head Start programs (University of Central Florida, 2011)..
3. Certified teacher: A person who holds a valid teaching certificate from the state Department of Education. In Florida, the teacher certificate is referred to as a Florida Professional Teaching Certificate and is issued according to state criteria including specific education and testing requirements.
4. Child Development Associate (CDA): A credential held by preschool instructors who have completed specific training requirements. Earning a CDA credential qualifies a person for the National Early Childhood

Certificate, the minimum credential allowable for Florida voluntary prekindergarten (VPK) instructors and not equivalent to a college degree.

5. Certification Credential: The official documentation that qualifies a person to be a lead instructor for a VPK class. Providers must use one of the categories listed to report the credentials of VPK instructors. The credential categories include Florida Child Care Professional Credential (FCCPC), National Early Childhood Certificate, Associate of Arts or Science, Bachelor of Arts or Science, Master of Arts or Science, or a doctorate degree.
6. Early Learning Coalition: A public entity under the guidance of the state Office of Early Learning that administers the operational requirements of VPK at the local level, including programs operated by school districts.
7. Education level: The highest degree listed for a VPK instructor. The categories used for reporting to the state include HS (completed high school), TECH (received a technical certificate), AA (received an Associate of Arts or Science degree), BA (received a Bachelor of Arts or Science degree), MA (received a Masters of Arts or Science degree), or PhD (received a doctoral degree of any kind).
8. Florida Child Care Professional Credential (FCCPC): A state approved training program that provides child care providers with the training necessary to be an approved voluntary prekindergarten instructor. The training requires 120 hours of instruction in early childhood and 480 contact hours with young children.

9. Florida Voluntary Prekindergarten (VPK): A voluntary prekindergarten program funded by the state of Florida for students who will be four years old on or before September 1st of the school year.
10. Florida Voluntary Prekindergarten (VPK) Education Standards: The VPK Standards describe what four-year-old children should know and be able to do by the end of the Florida VPK experience.
11. Florida Voluntary Prekindergarten (VPK) Provider: A prekindergarten program can only be designated as a Florida VPK provider if specific state requirements have been met.
12. Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate: The Florida Department of Education is required by law to calculate a kindergarten readiness rate every year for each private or public school VPK Provider. The Florida VPK Provider Kindergarten Readiness Rate measures how well a VPK provider prepares four-year-olds to be ready for kindergarten based on Florida's VPK Education Standards.
13. Head Start: A national, federally funded program that provides comprehensive child development services for disadvantaged children and their families. Head Start preschool programs focus on providing students with the support necessary to build early reading and math skills (U.S. Department of Health & Human Services, 2011).
14. Lead Instructor: Florida VPK programs allow a maximum class size of 20 with two adults in the classroom. The lead instructor is the person with the

primary instructional responsibilities and must meet specific credentialing requirements set forth in state statute.

15. National Early Childhood Certificate (NECC): A state approved credential that can be used to qualify a person to work as a lead instructor in a Florida VPK program. A Child Development Associate (CDA) credential is one of the credentials that qualify a person for a NECC.
16. Pre-K: Commonly used abbreviation for prekindergarten that is used interchangeably with the term preschool.
17. Prekindergarten: Used interchangeably with the terms preschool and pre-K to refer to education programs for children three and four years of age in the years prior to formal kindergarten. The age for kindergarten entry in most states is 5-years-old.
18. Preschool: Used interchangeably with the terms prekindergarten and pre-K to refer to education programs for children three and four years of age in the years prior to formal kindergarten. The age for kindergarten entry in most states is 5-years-old.
19. Poverty level: The percentage of students in a VPK program receiving free or reduced priced lunches through the National School Lunch Program.
20. Public preschool: Programs that are funded using public money and generally available to all preschool age children. There may be specific eligibility requirements, such as family income level, for participation in some public preschool programs.

21. Public school VPK provider: This program has met the state requirements to operate a VPK program in a public school setting in agreement with the local Early Learning Coalition.
22. Targeted prekindergarten programs: These programs are reserved for preschool students at greatest risk of school failure and have specific eligibility requirements such as economic disadvantage, disabilities or other special needs. Head Start is an example of a targeted prekindergarten program because of the emphasis on providing preschool for children living below the federal poverty level.
23. Universal Prekindergarten (UPK): Voluntary prekindergarten program that is generally available to all preschoolers. Although many UPK programs may have age restrictions, the programs serve a wide range of the preschool population. For example, all four year old children in Florida are eligible for a free, publicly funded universal prekindergarten program called Voluntary Prekindergarten (VPK).

Conceptual Framework

The fundamental idea of this study was that teacher qualifications play a significant role in the quality of preschool programs. Dewey (1902) and Shulman (1987) have established the importance of providing teachers with the education and support necessary to develop the specialized craft of teaching. The debate over whether or not preschool teachers should be held to the same credentialing requirements as public school

teachers working in grades K-12 continues in an age of increased accountability for all publicly funded school programs. Bloom (1981) recognized the need for specialized training for prekindergarten teachers when he wrote “preschool education is an exceedingly complex process and the teachers at this stage must be well prepared for this very important task” (p. 70).

In his classic work, *The Child and the Curriculum*, John Dewey (1902) identified the teacher as being central to facilitating a child’s understanding of content. Dewey saw subject-matter as “purely formal and symbolic” if it is not “psychologized” and experienced by the learner (p. 8). The teacher plays the critical role of catalyst by assuring the transition of basic subject matter into a meaningful experience for the child, and it is this experience that leads to student learning. Dewey emphasized “the necessity of adequate training and scholarship on the part of the teacher” to assure subject matter becomes useful and significant for students (p. 4).

Shulman (1987) built on the work of Dewey to create his theory of pedagogical content knowledge which evolved from his longitudinal observations of beginning teachers. This study coincided with his work in assisting with the development of a national board assessment for the teaching profession. Shulman and his colleagues wanted to develop an instrument that would not only measure content knowledge and education foundations, but would also capture the specialized teacher knowledge required of highly effective instructors. Shulman believes that teachers must have both a knowledge base for teaching and a process of pedagogical reasoning and action within

which this specialized teacher knowledge is put to use for the benefit of student learning (p. 5).

According to Shulman (1987), the knowledge base for teaching comes from four sources: (1) learning subject matter, (2) understanding educational materials and structures, (3) formal educational research and learning, and (4) “the wisdom of the practice itself” (p. 8). Teachers gain the skills necessary to engage in effective practice through a combination of these knowledge sources. Shulman emphasizes that the knowledge base is never complete but always evolving as a result of ongoing research, learning, and working with more experienced practitioners.

In addition to a knowledge base for teaching, the teacher must also engage in a process of pedagogical reasoning and action. Shulman’s (1987) model for this process is outlined below:

1. Comprehension - understanding the subject matter to be taught;
2. Transformation – the preparation of subject matter for presentation to students that includes decisions concerning the representation, selection of teaching modes, and adaptation for unique needs and interests of the students;
3. Instruction – observable forms of classroom teaching, including managing presentations, interactions, discipline, and group work;
4. Reflection – being able to critically reflect on one’s own practice, and that of the students to guide decisions regarding improvement;
5. New comprehension – being able to gain from the model some useful insights regarding teaching, referred to as “aha moments” (p. 19).

The processes in this model are not intended to occur sequentially in practice, and some may not occur as frequently as others. The intent of Shulman's model is to emphasize the complexity of teaching and draw attention to the succinct pedagogical knowledge and practice that is necessary for the profession.

Shulman (1987) maintains that "teaching is trivialized, its complexities ignored, and its demands diminished" because of the traditional manner that competency for teaching has been assessed (p. 6). Typically, there is a test of basic skills and proficiency in subject matter and occasionally an assessment of general teaching skills. However, the transformation of subject matter from the knowledge of the teacher into the content of instruction to what students come to know and understand happens as a result of the teacher's pedagogical content knowledge (Shulman, 1986, p. 6). Pedagogical content knowledge represents both the specialized understanding of subject matter and the nuances of effective instruction required for teaching.

Often, prekindergarten teachers begin teaching without the benefit of the pedagogical content knowledge as defined by Shulman (2008). Perhaps the lack of an emphasis on the importance of having college-educated early childhood instructors is derived from too much of a focus on subject matter knowledge as the only essential requirement for teachers. The demands of the 21st century, what we know concerning brain development, and the understanding of young children's capacity to learn has led to a more standards-driven curriculum that requires an extensive range of teacher pedagogical content knowledge (Bowman, 2011). Since preschool curriculum content is quite basic, there may be an assumption that additional education is not necessary to gain

the appropriate knowledge base and expertise necessary to provide a high quality early childhood experience for children. Bowman (2011) asserts, “Although most adults have an operational knowledge of early childhood curricula, many do not fully understand the underlying concepts that affect children’s learning” (p.57). In other words, adults may have knowledge of the alphabet and sounds but may not fully understand the most effective way to introduce and teach these concepts to children.

Although much of Shulman’s work was based on his observations of teachers in secondary schools, his pedagogical content knowledge theory provided the conceptual framework for this study of whether or not a prekindergarten teacher’s professional preparation makes a difference in program quality. The Committee on Early Childhood Pedagogy of the National Research Council emphasizes the significance of pedagogical content knowledge for preschool teachers who need “specialized education in child development and the education of young children” (Bowman et al., 2001, p. 276). This foundational knowledge is critical if preschool teachers are to meet the demands of teaching a standards-driven curriculum to a more diverse population than ever before.

Methodology

Research Design

This quantitative, ex-post facto, non-experimental study was designed to examine whether there is a significant difference in Voluntary Prekindergarten (VPK)

Provider Kindergarten Readiness Rates based on teacher qualifications. Statistical analysis was conducted using publicly available data accessible through a report posted on the Florida Department of Education (FDOE) VPK Provider Kindergarten Readiness Rate website. Data related to the education and certification credential for each VPK teacher was also publicly available and provided by the Florida Department of Education Office of Early Learning. These data sources were easily converted to a Microsoft Excel spreadsheet that simplified the data collection process. The final data used for the study was placed into the software program Statistical Package for the Social Sciences (SPSS), Version 18.0, to conduct the statistical analysis.

Population

The population for the study included voluntary prekindergarten (VPK) school year programs provided by public schools that were assigned a readiness rate for 2010-11 school year programs. Programs with no poverty level data reported were excluded from the population. Poverty level refers to the percentage of students receiving free or reduced priced lunches through the National School Lunch program.

The study population for each research question was defined by the dependent variable. For the first question, the study population included the 55 Florida public school districts that operated programs with a reported VPK Provider Kindergarten Readiness Rate for 2010-11. For question two, the study population was divided into six groups based on the education level of the lead instructor for each VPK class operated in a public school. The dependent variable for question three was the certification

credential of the lead instructor, so the study population was divided into five groups. Finally, the dependent variable for question four was the certification status of the lead instructor, so the study population was divided into two groups.

Sample

A population sample consisting of Florida school districts operating a VPK program with a reported readiness rate for 2010-11 was used for question one. For the remaining research questions, stratified random samples were selected from each of the groups created based on the credentials, education level, and certification status of the lead instructor for each of the voluntary prekindergarten (VPK) classes operated in public schools. The size of each group in the individual samples was kept constant to reduce the extent of any problems with assumption violations for different analysis of variance (ANOVA) models (Lomax, 2007, p. 212).

Data Collection and Analysis

Data collection for the study involved gathering information from the Florida Department of Education (FDOE) Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate website and the FDOE Office of Early Learning. The FDOE VPK Provider Kindergarten Readiness Rate website provided the readiness rate and percentage of students participating in the free or reduced price lunch program for each school year program operated in a public school. For each VPK class operated in a Florida public school, data collected from the FDOE Office of Early Learning included

the credential that qualified the instructor to teach VPK, the education level of the instructor, and whether or not the person is a certified teacher. The credential, education level, and certification status of the lead instructor for each VPK class were recorded in a chart and matched to the readiness rate for the program. Collecting and recording the data in this manner allowed the researcher to systematically analyze the information.

The VPK Provider Kindergarten Readiness Rate, reported as interval data, was the dependent variable in the study. The independent variables included each VPK instructor's education level and type of credential and whether or not the person is a certified teacher by the state of Florida. The covariate used in the study was the reported poverty level for each VPK program operated in a Florida public school. This statistic represented the percentage of students in a program reported as participating in the free or reduced price lunch program.

A one-way Analysis of Variance (ANOVA) was used to determine if there are statistically significant mean differences in the VPK Provider Kindergarten Readiness Rates based on the minimum education level required by school districts for a lead instructor in a program. The Analysis of Covariance (ANCOVA) statistical test was applied to analyze the extent of the mean differences in readiness rates based on the credential, education level, and certification level of the lead instructor while controlling for the possible interaction effect of poverty level on the independent variables.

Table 1, Research Questions, Variables, Data, and Analysis Methodology provides a summary of the variables, data sources, and analysis method used to answer each of the four research questions.

Table 1: Research Questions, Variables, Data and Analysis Methodology

Research Questions	Variables	Data Source	Analysis Method
1. To what extent does the mean VPK Provider Kindergarten Readiness Rate for each public school district differ based on the minimum education level required for a lead instructor in the program?	<u>Dependent:</u> VPK readiness rate <u>Independent:</u> Minimum education level required by district	VPK Readiness Rate website FDOE VPK instructor data base	ANOVA
2. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program?	<u>Dependent:</u> VPK readiness rate <u>Independent:</u> Education level of lead instructor <u>Covariate:</u> Poverty level	VPK Readiness Rate website FDOE VPK instructor data base	ANCOVA
3. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.S. or A.A. degree, B.A. or B.S. degree, M.A. or M.S. or doctorate) when controlling for the poverty level of the program?	<u>Dependent:</u> VPK readiness rate <u>Independent:</u> Credential of lead instructor <u>Covariate:</u> Poverty Level	VPK Readiness Rate website FDOE VPK instructor data base	ANCOVA
4. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program?	<u>Dependent:</u> VPK readiness rate <u>Independent:</u> Certification status of lead instructor <u>Covariate:</u> Poverty level	VPK Readiness Rate website FDOE VPK instructor data base	ANCOVA

Publicly available data that does not involve individuals was used for the study; therefore, a request for exemption from the University of Central Florida (UCF) Institutional Review Board (IRB) was submitted and approved based on the rules for research involving the collection of existing data. A copy of this letter of exemption appears in the Appendix.

Summary

Early childhood educators have struggled for decades to gain the acknowledgment and respect the profession deserves. The reluctance to provide preschool teachers the same reverence and recognition afforded those working in elementary and secondary education is perhaps embedded in the lack of consistent credentialing requirements coupled with a failure of the general public to understand the significance of working with young children. Bowman (2011) states, “Many believe that because early childhood teachers do not generally teach academic subjects in a formal way, they need little preparation for teaching” (p. 54). The information provided in this chapter established the need for a study to investigate the possible difference in preschool program quality based on the credentials of the lead instructor in a voluntary prekindergarten classroom.

Organization of the Study

The introduction to the study was provided in Chapter 1 along with a statement of the problem, research questions and their related hypotheses, the delimitations and limitations of the study, a definition of key terms, the conceptual framework for the

study, and an overview of the research methodology that was used during the study.

Chapter 2 provided a literature review of research and information pertinent to the problem being studied. The methodology planned for the study was explained in Chapter 3. This explanation included a review of the research questions and hypotheses as well as the research design, including descriptions of the population, the sample, data collection and analysis procedures, and a summary. Chapter 4 provided a discussion of the results based on the statistical tests and analysis. The study concluded in Chapter 5 with a presentation of the research findings. This final chapter also included implications of the research along with recommendations for further research on the topic.

CHAPTER TWO: LITERATURE REVIEW

The importance of high quality early childhood programs for children is an issue that continues to be promoted by educators, researchers and policymakers. As referenced in Chapter 1 of this dissertation, The 2011 Early Learning Challenge Fund offered as part of the Race to the Top grant program is an example of how the advocacy for early childhood education has risen to the national stage, supported by the federal government. The grant focused on alignment of early childhood programs by improving standards and assessments. The fund also called into question overall program quality, with specific attention being given to improving the qualifications of early childhood teachers working with our youngest students nationwide.

In *The Big Picture*, an article in the August, 2009 issue of *Phi Delta Kappan*, James E. Ryan, a law professor at the University of Virginia, highlights five legal issues that are changing the face of public education in the United States. The issues identified as impacting schools and school districts are desegregation, school finance, school choice, No Child Left Behind, and publicly funded preschool. Of these five issues, publicly funded preschool is perhaps the newest issue, with an accelerated implementation of such programs occurring during the past 15 years. Ryan notes that publicly funded prekindergarten programs exist in over half of the states and in the District of Columbia. With the expansion of prekindergarten offerings for children it becomes paramount that the quality of such programs in terms of student outcomes are researched and well documented.

This review of literature established the rationale for conducting research regarding the possible difference in preschool program quality based on teacher education level by examining five key areas. First, the evolution of preschool programs since the inception of Head Start in 1965 until the current emphasis on providing universal access was discussed in the context of how programs have evolved during the past five decades from simply providing childcare to being an integral part of preparing children for overall school success. The use of the courts and legislative action to advance preschool programs was included in the discussion. Second, a comprehensive overview of the status of preschool education in the United States was included to provide a snapshot of the prevalence and of condition of programs currently being offered to children. This section also included a discussion on indicators of program quality. Third, prekindergarten effectiveness studies related to the impact of teacher qualifications on preschool program quality were reviewed to establish a research background for the study. Fourth, the debate surrounding the preparation of early childhood professionals was discussed with information from both advocates and opponents of requiring a college degree for preschool teachers. Finally, the review of literature concludes with a discussion of the relation of the information to the method of study used for this research.

Preschool Education in the United States

During the past five decades preschool education in the United States has evolved from simply providing childcare to being considered an integral part of early child

development. The interest in high quality preschool extends into all facets of society and the idea of providing universal prekindergarten is both accepted and advocated by politicians and the general public.

The authors of *Ready or Not Leadership Choices in Early Care and Education* write that prior to 2000, it was assumed that “children follow a natural developmental trajectory that is enhanced by a nurturing and supportive learning environment” (Goffin & Washington, 2007, p. 60). Early childhood programs focused on developing social, emotional, cognitive and motor skills and basically provided daycare options for working parents.

The designation of “all children will enter school ready to learn” as one of the 10 goals in *Goals 2000: Educate America Act* created a shift in the views on early learning (Goffin & Washington, 2007, p. 20). Since 2000, there has been a renewed attention to the importance of quality early experiences for predicting future success and the realization that young children are capable of learning much more than previously thought possible. Current early childhood programs focus on school readiness, closing the achievement gap and preparing students for success in a global economy (p.60). According to Ryan (2006), factors that have contributed to an amplified interest in providing more universal access to preschool include advancements in brain research, solid evidence on the benefits of preschool, an increased need for childcare among working parents, and the appeal of young children. Scientists have now established that enriching a child’s development during the first three years of life is critical to maximizing cognitive growth. Although preschool education generally begins at age

three or four, the research advocating the importance of early enrichment is being used to establish the need for universal access to preschool.

Head Start

Head Start, which began in 1965, is the largest federal program for preschool children and attempts to fill the early childhood program void for impoverished children and their families. The program was developed as a means of compensating for the negative impact that poverty has on the ability of families and communities to adequately support the development of young children. Head Start eligibility is restricted to children in families who qualify for public assistance or whose income is below the federal poverty line. According to an annual report published by the National Institute for Early Education Research, the total federal Head Start enrollment for children ages 3 and 4 was 755,765 in 2010-11 with an additional 16,182 children being enrolled in state-funded Head Start programs (Barnett et al., 2011, p. 6). State-funded Head Start programs are those that received state supplements in addition to federal funds. Some Head Start programs are operated within public school systems.

The program provides comprehensive services to children and their families, including health, community engagement, child development and school readiness. Barnett (2011) explains that Head Start “has extensive performance standards, administrative structures, requirements for specialized training in early childhood and supports for professional development” (p. 53). Head start programs maintain small class sizes, with a teacher and assistant for each class. Head Start teachers are not required to

have a degree, although current guidelines dictate that by September 2013, 50% of those teaching in the program will need to have as a minimum, a bachelor's degree in early childhood or a degree in any subject with appropriate coursework in early childhood (Early Childhood Learning & Knowledge Center, 2011).

In addition to Head Start, many states now have some type of publicly funded universal prekindergarten (UPK) program. According to the National Institute for Early Education Research, when combining general and special education enrollments, 31 percent of children attended a state-funded program in the 2009-2010 program year. This figure, coupled with Head Start enrollment of 11 percent, meant that at least 42 percent of 4 year old children in the United States were attending some type of publicly funded preschool program during that program year. These early education programs are touted as a means to reduce the achievement gap by providing opportunities and experiences for students that will positively impact and increase school readiness. Other positive outcomes of the universal prekindergarten (UPK) movement are increased services to families, improved program quality, and improved teacher qualifications (Committee for Economic Development, 2006).

Apple (2007) writes of the early childhood "trilemma" that encompasses program affordability, quality and accessibility. Apple further explains that the affordability issue becomes paramount because "there is a delicate balance between charging what families can afford to pay and charging a rate that funds program quality" (p. 607). Thus, the argument for universal prekindergarten (UPK) revolves around providing state funding so that children have access to quality programs.

Legal teams across the nation have brought forth challenges to school funding formulas and decisions by state courts have led to equalizing unequal or inadequate funding of low-income schools (NIEER, 2005). Over time, more lawyers are including preschool education as part of these legal claims and some plaintiffs have been able to successfully argue that preschool is a necessary provision under a state's constitution.

Preschool Mandated Through Litigation

Ryan (2006) notes a trend among early childhood education advocates utilizing the courts to “consider whether children have a right to publicly funded preschool” (p. 51). High-quality preschool programs are viewed as being a necessary component of schooling if students are going to be able to achieve states' educational standards at the levels prescribed by current legislation. Although preschool is not part of No Child Left Behind (NCLB), the high standards required by the law basically implies the supposition that children come to school ready to learn. “Some plaintiffs have argued-and some courts have agreed-that the state's own learning standards, often adopted in response to the federal law, amount to the definition of a constitutional adequate education” (NIEER, 2005, p.2).

In a series of court cases that began with *Abbott v. Burke*, the New Jersey Supreme Court did something that courts in the past had been reluctant to do. “State-funded preschool was mandated for children in the poorest school districts in the state (Abbott districts) once the legislature failed to follow three previous directives to correct an unconstitutional funding system” (NIEER, 2005, p. 1). The Court attempted to make

certain that the children in the state's 28 poorest school districts were privy to an improved education system by requiring these districts to implement high quality, intensive early childhood programs for their 3- and 4-year-old children by September, 1999, just 16 months following the release of the decision (*Abbott v. Burke*, 1998). *Abbott V*, as the case became known, "recognized the critical link between a quality early education and the development of language skills and the discipline necessary for children to succeed in school" (Lauter & Rice, 2008). In this landmark case, the Supreme Court of New Jersey recognized the link between quality programs and adequate funding.

In the *Abbott V* ruling, the New Jersey Supreme Court remanded the case to a lower court who was authorized to direct the New Jersey State Department of Education (NJDOE) to define what "high quality, intensive" preschool should include. However, in the two years that followed the 1998 decision, the NJDOE failed to provide this definition resulting in inequities in the quality of early childhood programs within school districts. Therefore, in 2000, the Justices defined the components of a "high quality, intensive" preschool in the *Abbott VI* decision since the Education Commissioner did not succeed in doing so in a timely manner (*Abbott v. Burke*, 2000).

Abbott V could be viewed as the most significant court case on funding for prekindergarten programs to date. *Abbott VI* perhaps qualifies as the most comprehensive ruling in regards to setting policy for prekindergarten that impacts funding, accessibility and program quality. These landmark rulings established a set of education programs and reforms widely recognized to be the most fair and just in the nation (Education Law Center, 2009). These reforms were as follows:

- Rigorous content standards-based education, supported by funding equal to spending in successful suburban schools.
- Universal, high quality preschool education for all 3- and 4-year-olds with class sizes of 15 with one certified teacher and an instructional assistant.
- New and rehabilitated facilities, with adequate housing for all programs and elimination of health and safety concerns.
- State accountability for effective and timely management.

State-Funded Universal Prekindergarten Programs

According to the National Institute for Early Education Research (Barnett et al., 2011), there are 51 programs in 39 states that offer some form of universal access to a preschool program. Georgia, New York, Oklahoma, and Florida were among the first states to make universal access to early childhood programs a funding priority.

Georgia Pre-K Program

Georgia was the first state in the nation to extend eligibility for a publicly funded, universal prekindergarten program to all 4-year-olds in the state. The Georgia initiative began as a gubernatorial campaign promise and later evolved into a lottery-funded program through a constitutional amendment. Research showing positive results for early academic skills provided the catalyst for public support of expanding the Georgia prekindergarten program (Ackerman, Barnett, Hawkinson, Brown, & McGonigle, 2009).

The hours of operation for the program are 6.5 hours a day, 5 days a week, and follow the academic year calendar. All school districts in Georgia offer the program and the total state program enrollment for 2010-11 was 82,608 students.

Beginning with the 2010-11 program year, Georgia Pre-K Program teachers are required to have a bachelor's degree although a waiver program was instituted to provide additional time for current teachers to transition to this new requirement. Assistant teachers in the Georgia program are required to have a Child Development Associate (CDA) credential, a requirement that has been in place since the 2008-09 program year.

Oklahoma Early Childhood Four-Year-Old Program

Universal prekindergarten in Oklahoma began as part of a larger education reform package that established preschool as part of the state funding formula for education.

Although the first programs were targeted for specific populations, in 1998, Oklahoma became the second state in the nation to offer free, universal access to preschool for all 4-year-olds. The Oklahoma universal prekindergarten program is considered one of the most accessible in the country with an enrollment of 38,441 and 98% of the state's school districts offering the Early Childhood Four-Year-Old program (Barnett et al., 2011).

Like Georgia, the program operates according to the academic year calendar. Families may choose between half- or full-day programs offered 5 days a week. Teachers in the Oklahoma state funded prekindergarten program must have a bachelor's degree. Unlike many states, Oklahoma requires the assistant teacher to meet the federal requirements to be classified as highly qualified according to No Child Left Behind (Barnett et al., 2011).

In Oklahoma, this provision for teaching assistants is met with a two year degree, 48 credit hours of college coursework, or a passing score on a state-approved test. Research on the Tulsa, Oklahoma prekindergarten program is favorable and is discussed in a later section of this chapter.

New York Universal Prekindergarten Program

Like Oklahoma, legislation for universal prekindergarten (UPK) in New York started as part of a broader reform and funding plan that promoted full-day kindergarten along with other important program elements such as smaller class sizes in the primary grades and teacher training. Advocates for early childhood education transformation used findings of research emphasizing the importance of learning between the ages of 3 and 10 (Ackerman, Barnett, Hawkinson, Brown, & McGonigle, 2009). Although UPK in New York is intended to be universal, insufficient funding has made this an unattainable goal. Currently, only 66% of school districts offer the state UPK program due to funding limitations (Barnett et al., 2011). This provides enrollment for 103,466 children, or approximately 43 percent of the state's four-year-olds. Parents have the option of a half- or full-day for their child and the program operates according to the academic calendar year. New York requires universal prekindergarten (UPK) teachers to have a bachelor's degree and state certification, regardless of whether they are employed in a public or nonpublic setting. By January 2013, all UPK teachers in the state of New York must have early childhood certification (Barnett et al., 2011).

Florida Voluntary Prekindergarten Program

When funding for preschool programs is not attained through litigation or legislative action, it can be achieved through the approval of the state's voters. In 2002, Florida became the first state in the nation to grant four-year-old children "an explicit state constitutional right to a high-quality preschool education" (Ryan, 2006, p.55). A constitutional amendment established that all four year old children in Florida are eligible for Voluntary Prekindergarten (VPK), a free, publicly funded preschool program. The program was implemented in 2005 with the intent of preparing children for kindergarten by providing quality instructional experiences that lead to the development of skills necessary to become successful students.

The Florida Department of Education Office of Early Learning (FDOE OEL) reports that 152,356 children were enrolled in voluntary prekindergarten (VPK) for the 2010-11 program year and this number represented 93% of the eligible children in the state (2011). Early learning coalitions under the guidance of the FDOE OEL administer the operational requirements of VPK at the local level. Public schools and private prekindergarten providers are eligible to contract with an early learning coalition to provide VPK. Florida Statute 1002.55 (3) (a) defines eligible private VPK providers as one of the following: (1) licensed child care facility, (2) licensed family day care home, (3) nonpublic school exempt from licensure, or (4) faith-based child care provider exempt from licensure (Voluntary Prekindergarten Education Program, 2011). Public school VPK providers managed by local school districts and offered in a public school setting must also contract with the local early learning coalition to offer the program. The

minimum credential that qualifies a lead instructor to teach in any of these settings is a high school education with a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC) although some VPK providers require teachers to have at least a bachelor's degree. The state of Florida offers both a school year and summer VPK program. The school year program must be offered for a minimum of 540 hours and the summer program is 300 hours. The hours of operation for the program are determined by each VPK provider.

Current Status of Preschool Education

In its annual publication, *The State of Preschool*, the National Institute for Early Education Research (NIEER) provided a comprehensive report of findings from research conducted in state-funded preschool programs across the United States. The key dimensions evaluated annually by NIEER and reported in the yearbook include access, quality standards, and resources. A review of this data provided a snapshot of the current status of prekindergarten programs in the United States in meeting established standards of quality. *The State of Preschool* yearbook focused on state-funded prekindergarten programs meeting the following criteria:

- Funded, controlled, and directed by the state;
- Serves preschool age children (typically 3 and/or 4-years-old);
- Focus is on early childhood education rather than parent education programs;
- Program offered in a group setting a minimum of two days a week;

- Distinct initiative from state subsidized childcare (although the initiative can be coordinated and integrated with the childcare subsidy system);
- Primarily designed to serve children without disabilities, but services may be offered to students with disabilities; and
- Head Start programs are included if they substantially expand the number of students being served and the state assumes some administrative responsibility for the program (Barnett et al., 2011, p. 21).

Enrollment in state prekindergarten programs for general education students rose by two percentage points to 28 percent at age 4, meaning that now approximately one of every four children attends a state funded universal preschool program. The total preschool enrollment for 3- and 4-year-olds in the United States increased by 30,818 children with more than 1.3 million attending stated-funded programs during the 2010-11 program year.

Barnett et al. (2011) declare state-funded preschool programs as “education’s biggest success story” during the past decade despite a decrease in state funding for prekindergarten by almost \$60 million in 2010-11 when adjusted for inflation (p. 4). Annual state funding for prekindergarten ranged from zero in 11 states to more than \$843 million in Texas. Connecticut, New Jersey, and Oregon spend more than \$8,000 per child for state-funded prekindergarten while Maine, Nebraska, and South Carolina commit fewer than \$2,000 per child annually.

Although many states showed an increase in the enrollment of preschool children, funding cuts resulted in the national per-child spending being reduced by \$145 from the

previous year. According to Barnett et al. (2011), state prekindergarten spending per child decreased slightly from \$4,212 to \$4,151 for the 2010-11 program year. This amount represents funding to cover the costs associated with operating prekindergarten programs, including teacher salaries. Barnett and his researchers point out that the reduction in funding coupled with enrollment increases contribute to eroding program quality. Programs with less funding may compromise on standards such as staff qualifications when costs attributed to hiring qualified teachers exceeds available funds. The *State of Preschool 2011* report revealed that 43 percent of the population of children enrolled in state funded prekindergarten attended programs that met fewer than half of the quality standards benchmarks defined by the National Institute for Early Education Research (Barnett et al., 2011).

For the first time ever, Florida, with 76% of 4 year-olds enrolled in state-funded prekindergarten, lead the nation for preschool enrollment at age 4 followed by Oklahoma (73.5%) and Vermont (66.9%). Although this achievement is impressive, a press release by the National Institute for Early Education Research (NIEER) identified Florida as “a paradox when it comes to public preschool education” (NIEER, 2012, para 1). This contradiction stems from the noteworthy provision of universal access to preschool, but a poor ranking when considering NIEER benchmarks for program quality. Florida also ranked last for per-child spending when considering all funding sources.

Prekindergarten Program Quality

“The educational quality of a preschool program is one of the most important factors in predicting its effectiveness, as quality is linked to effects on children’s development, academic success over time, and other outcomes that yield economic benefits to society”(Barnett et al., 2009, p. 11). Researchers use a variety of measures to assess overall program quality including classroom environment ratings and standardized measures of student achievement outcomes. Perhaps the most useful determinations of preschool quality are those that provide a comprehensive assessment of program standards.

NIEER Program Standards

The National Institute for Early Education Research (NIEER) uses a checklist of 10 research-based standards benchmarks to evaluate the quality of prekindergarten programs in each state. These program quality indicators include the assessment of factors related to learning standards, staff qualifications and training, class size, screening and referral processes, provision of meals, and program monitoring.

For the first time since the National Institute for Early Education Research (NIEER) began reporting program quality based on established standards in 2002, six states had programs meeting all benchmarks and eleven programs met nine out of 10. Georgia and New York were the only two states with changes that resulted in meeting additional benchmarks in 2011. Both of these states now require a bachelor’s degree for

all teachers and New York adopted early learning standards for their state prekindergarten programs. The change in the education level required for prekindergarten teachers in Georgia resulted in the state meeting all 10 benchmarks.

Even with an increase in the number of states achieving all benchmarks, the authors of *The State of Preschool 2011* remain concerned with the quality of preschool programs in the United States. Barnett et al. (2011) writes, “Since 2009-2010, there has been no change in the number of states meeting five of the benchmarks, including those for teacher specialization and assistant teacher qualifications” (p. 10). Five states had programs that met fewer than half of the National Institute for Early Education Research (NIEER) benchmarks for quality standards. The states failing to meet most benchmarks include Texas and Vermont with four, California and Florida with three and Ohio with two. Florida, Vermont, and Texas represent states with enrollment above 50%, indicating a real need for a focus on the quality of programs being offered to students in universal prekindergarten programs. The impact of teacher and assistant teacher qualifications merit concern since most states failed to meet the NIEER benchmarks in these areas.

When the National Institute for Early Education Research (NIEER) reviews programs, daily operation schedules are taken into consideration because of the potential impact on access to the programs. Half-day programs represent those that are partially funded by the state. For example, in Florida, the state provides for three hours of instruction in the voluntary prekindergarten (VPK) program. The cost to extend the program must be covered by the VPK provider. Often, this additional cost is passed on to

families and can present a limitation for those unable to pay for the additional hours of preschool.

Table 2, NIEER Quality Standards Checklist Summary, provides a national overview by indicating the number of state-funded prekindergarten programs in the nation that meet each NIEER benchmark for quality.

Table 2: NIEER Quality Standards Checklist Summary

Policy	Benchmark	NUMBER OF STATE-FUNDED PRE-K PROGRAMS (51) MEETING BENCHMARKS
Early learning standards	Comprehensive	49
Teacher degree	BA	29
Teacher specialized training	Specializing in pre-K	45
Assistant teacher degree	CDA or equivalent	16
Teacher in-service	At least 15 hours/year	43
Maximum class size 3-year-olds 4-year-olds	20 or lower	45
Staff-child ratio 3-year-olds 4-year-olds	1:10 or better	45
Screening/referral	Vision, hearing, health; and at least 1 support service	37
Meals	At least 1/day	24
Monitoring	Site Visits	35

Note: Barnett, W. S., Carolan, M. E., Fitzgerald, J., & Squires, J. H. (2011). *The state of preschool 2011*. New Brunswick, NJ: National Institute for Early Education Research.

NIEER Standards Ranking for Florida Voluntary Prekindergarten (VPK)

Although Florida ranked first in terms of access to state-funded preschool for four-year-olds, the state's quality standards checklist total was three, making it one of the poorest performing states in terms of program quality as measured by the National Institute for Early Education Research (NIEER). This dismal quality standards checklist total may be related to Florida's rank as 39th out of 39 states in resources for prekindergarten based on all reported spending. In 2010-11, Florida spent \$2,422 per child enrolled in voluntary prekindergarten (VPK).

The Florida voluntary prekindergarten (VPK) program met the National Institute for Early Education Research (NIEER) benchmarks for having comprehensive early learning standards; requiring site visits for monitoring; and mandating class sizes of 20 or lower. The areas of quality not achieved were related to staff credentials, staff to student ratio, no meals being provided during the school day, and inconsistent referrals for screening and other services. NIEER recognizes a bachelor's degree as the minimum requirement for teachers and a Child Development Associate (CDA) or equivalent credential for assistant teachers in state-funded prekindergarten programs. By contrast, Florida accepts a CDA or equivalent for teachers and 40 clock hours in training for licensed child care providers for assistant teachers. Equivalent credentials to the CDA include a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC). NIEER requires 15 hours or more of teacher training each year, whereas Florida requires 10 hours for VPK instructors. Although Florida meets the NIEER requirement for maximum class size, having a 1:12 teacher to child

ratio during summer VPK programs failed to meet the NIEER standard of 1:10 for staff-child ratios. The level of screening and referral for other services is determined locally in Florida, meaning the NIEER standard of vision, hearing, health and at least one support service was not met. Since Florida's voluntary prekindergarten (VPK) program is not a full day program, meals (including breakfast) are not served. The NIEER standard for this benchmark is one meal served per day.

The information presented in the *State of Preschool 2011* yearbook presents a comprehensive review of the state of universal prekindergarten options available to children in the United States. Although more than half of the states offer some type of program, there is still work to be done to provide adequate funding necessary for quality programs while expanding access for all preschool children enabling them to be better prepared to meet the high expectations in K-12 schooling set by state and national standards.

Measures of Kindergarten Readiness

The concept of kindergarten readiness promotes the idea that in addition to being chronologically old enough to attend kindergarten, children must also exhibit specific behaviors and prerequisite skills that illustrate their preparedness for formal schooling. Kindergarten readiness tests are generally given to students before or shortly following the beginning of kindergarten. According to Ackerman and Barnett (2005), readiness measures of differing types have been used since the early 1900s and there are currently over 35 such tests available to teachers and other education professionals. Generally,

readiness test results are used for different purposes which may include but are not limited to determining class placement, identifying instructional needs, and even perhaps encouraging a parent to wait before enrolling a child in kindergarten even though the child is chronologically eligible. In the age of increased school accountability, some readiness tests are being used to evaluate the effectiveness of preschool programs, such as the Florida Voluntary Prekindergarten (VPK) program.

Florida Voluntary Prekindergarten Provider Kindergarten Readiness Rates

Based on an initial assessment of students entering kindergarten, the Florida Voluntary Prekindergarten Provider (VPK) Kindergarten Readiness Rates provide an indication of the quality of each program. The purpose of VPK Provider Kindergarten Readiness Rates is to evaluate the effectiveness of VPK providers in preparing students for kindergarten. The reporting and monitoring of this indicator holds VPK providers accountable for teaching the standards essential to a quality prekindergarten program. Also, in addition to making VPK providers accountable to taxpayers, the kindergarten readiness rates produced by each provider also give parents of potential students a mechanism for evaluating different options of educational programming for their children.

Florida Voluntary Prekindergarten (VPK) law required the establishment of a statewide kindergarten screening test that assesses each student's readiness for kindergarten. The Florida Kindergarten Readiness Screener (FLKRS) is based on the VPK education standards adopted by the Florida Department of Education. The FLKRS

must be administered to each kindergarten student within the first 30 days of school. Each student's FLKRS results are linked back to the VPK program the child attended enabling the state to use this information to establish a VPK Provider Kindergarten Readiness Rate for each program.

The Florida Kindergarten Readiness Screener (FLKRS) is composed of two parts: a subset of the Early Childhood Observation System (ECHOSTM) and the Broad Screen and Broad Diagnostic Inventory measures from the Florida Assessments for Instruction in Reading (FAIR). The VPK Provider Kindergarten Readiness Rates are calculated by determining the percentage of children who score ready on both sections of FLKRS.

For 2010-11, the Florida State Board of Education determined that the maximum Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate is 100 and the minimum acceptable rate is 70. Those VPK programs not achieving the minimum rate are identified as a "low performing provider". VPK providers identified as "low performing" are required to submit an improvement plan and are monitored closely. Failure to improve the readiness rate in subsequent years may result in the provider being ineligible for VPK funding.

The Florida VPK Provider Kindergarten Readiness Rates are perhaps the most readily available measure of program quality for stakeholders because the information is available to the public through a state website. The intent of the readiness rate calculation is to measure how well the each program prepared students for kindergarten. Lazarus and Ortega (2007) explain, "High quality pre-kindergarten programs expose children to basic language and print concepts, improve listening skills, and develop

additional skills that are precursors to learning to read and write” (p. 60). The Florida VPK Provider Kindergarten Readiness Rates are used as a measure of program quality by indicating whether or not the day-to-day experiences of children enrolled with a particular VPK provider result in positive student outcomes.

Prekindergarten Effectiveness Studies

There is a preponderance of studies that demonstrate the numerous benefits connected to participation in prekindergarten programs. Ryan (2006) makes an interesting point regarding research information used to support preschool education programs when he states, “Most of the evidence about preschool points in one direction and is not contradictory or intensely contested” (p. 50). Researchers generally agree that high-quality programs close the gap in school readiness between poor and more affluent children and significantly reduce grade retention and demand for special education services. Barnett (2008) explains that the evidence from multiple studies conducted in the past 25 years reveals that a high quality preschool program is enough to “reduce by half the school readiness gap between children in poverty and the national average” (p.5). Research evidence also points to an increase in graduation rates and decrease in crime rates indicating that quality preschool programs can actually generate savings that are equivalent to or greater than the cost to operate the program.

Significant research has been conducted in the past to determine the long-term benefits for children attending preschool programs designed for children living in poverty. The available data from three classic studies, the High/Scope Perry Preschool

Study, the Chicago Longitudinal Study, and Abecedarian Project authenticate the idea that high quality preschool experiences for impoverished children facilitate cognitive achievement and positively impact long term personal success as indicated by lower welfare usage and increased wages. The Head Start Impact Study of 2010 illustrates benefits for children from low-income families, but also provides insight to limitations of the program that need to be addressed through recommended reform.

High/Scope Perry Preschool Study

The High/Scope Perry Preschool Study serves as a classic example of the benefits of a high quality preschool education. The Perry Preschool Program began in 1962 and had the goal of providing children who otherwise might not succeed in school the opportunity to participate in a preschool program designed to “improve the intellectual, social and emotional learning and development of young children” (Galinsky, 2006, p. 8). The characteristics of the families the targeted group came from included parents with little education, poor paying jobs or unemployed, and homes with fewer than three rooms per person. The children in the program also had low IQ scores that bordered on mental impairment.

The Perry Preschool was center-based, but located in a public school and included a parenting component that included weekly home visits. Children attended the half-day program according to the regular school calendar beginning at age 3, attending the program until they started kindergarten at age 5. The program employed teachers with bachelor’s degrees who were on the same salary scale as public school teachers.

Galinsky (2006) points out that the preschool teachers were paid a 10 percent bonus for participating in the program. According to Schweinhart (as cited by Galinsky), teachers participated in a “learning community where teachers were studying Piaget and reading other authors to develop their own curricula...that became the High/Scope curriculum during the years of the Perry Preschool Project” (p. 9).

The High/Scope Perry Preschool Study was designed to measure the impact of a preschool program on African-American children from disadvantaged backgrounds. The study tracked Perry Preschool participants along with a control group annually through age 11 and then periodically through high school, early adulthood and at age 40. The results of the study indicate that while the Perry preschoolers experienced an initial boost in IQ, this advantage faded by age eight (Ryan, 2006, p. 58). However, as the subjects progressed through school, they had higher achievement scores and made better grades than the control group. At age 27, the Perry Preschool group was less likely to depend on welfare or engage in criminal activity, but more likely to have higher rates of employment and earnings than the control group. These results remained positive for the Perry Preschoolers when they were studied again at age 40. Ryan reports that “the most recent estimates indicate that the economic return to the public has been nearly \$13 for every \$1 originally invested in the program” (p.59).

Chicago Longitudinal Study

Chicago Public Schools began operating the Child Parent Center (CPC) in the late 1960s using federal Title I funds to provide low-income children with a half-day

preschool program. The basic goal of the program was to “improve the school success of the children, especially school achievement in reading and math” (Galinsky, 2006, p. 15). The programs were located either beside or in the physical plant of an elementary school. Children began attending the program at age 3 and continued until they started kindergarten, providing a smooth transition to school for students and building relationships with families through a parent outreach and support component. Other program components included a mean group size of 18 with a certified teacher and an assistant.

In addition to having a bachelor’s degree, the teachers were also certified in early childhood and compensated the same as the others in the public school system. Classroom teachers taught established learning goals and were provided the opportunity to reflect on instructional practices during staff meetings. A lead teacher and the elementary school principal provided support in selecting curriculum materials and designing learning activities. The association of the program with the public school system provided a “professional development enterprise” (p.16).

Barnett (2008) points out that multiple studies of the Child Parent Center (CPC) program have been conducted and all find positive effects on children’s learning. Long term effects through age 21 have been measured on CPC program participants and the results are encouraging and similar to the findings in the High/Scope Perry Preschool Study. The effects found in the CPC study include positive outcomes for these elements: test scores through middle school, fewer arrests for delinquency and crime, fewer

placements in special education, and increased high school graduation rates (Barnett, p. 12). The researchers also found a significant reduction in grade retention.

Abecedarian Project

The Abecedarian study differs from the Perry Preschool and Chicago Child Parent Center studies because it evaluated the effects of participating in a full day early childhood program from approximately 4 months of age until entry into kindergarten (Barnett, 2008). The goal of the Abecedarian Project was to provide children at risk for school failure with a high quality education throughout early childhood. Children for the program were selected based on family factors such as income, maternal intellectual ability and educational attainment, and history of mental illness or contact with mental health agencies. Children with older siblings experiencing poor school performance were recruited for the program.

The Abecedarian Project was housed in a child development center on a university campus and operated 50 weeks a year, providing children with an 8-hour per day program. Most of the teachers working in the program had a college degree and were paid salaries comparable to the public schools, but on a 12 month contract (Galinsky, 2006, p. 12). In reference to the professional development of the teachers, Galinsky notes, “They were learning all the time, using their own observational data and feedback from others to improve their practice” (p.9).

Using a randomized trial, the Abecedarian study tracked 111 children from the time they entered the program through age 30. The program was found to have large

initial increases in IQ; however, these gains declined over time. Initially, effect sizes were .75 at age 4, but decreased to .33 by age 15. The largest effects of the program were on grade retention and special education with each of these factors being reduced by 23 points for program participants. The latest research results based on the participants at age 30, show that those who participated in the Abecedarian Project in early childhood were four times more likely than those in the control group to earn a college degree – 23 percent are four year-year college graduates as compared to 6 percent in the control group (Frances et al., 2012).

Galinsky (2006) wrote an extensive review of the High/Scope Perry Preschool Study, the Chicago Longitudinal Study, and the Abecedarian Project Study for the purpose of clarifying the specific qualities that made these studies so successful and providing the early childhood education community with clear guidance on the elements of highly effect prekindergarten programs. Based on her findings, Galinsky recommends the following as the “basics” for a quality early childhood program:

- Begin early – two or more years is preferable
- Maintain small class sizes, high teacher-child ratios
- Maintain intense programs through increased contact hours with the child, working with parents, and extending services into the school-age years
- Focus on student learning, not just achievement outcomes
- Provide curriculum activities that emphasize development of the whole child – intellectual, social, emotional, and physical
- Provide a framework for learning combining direct and responsive teachers

- Hire highly qualified teachers, compensate them fairly, and provided ongoing training and support (2006, p. 19-21).

Head Start Impact Study

A challenge for preschool advocates is to replicate a study of model programs such as the Perry Preschool Project on a large scale. Prior to states becoming involved in providing publicly funded preschool, Head Start was the largest such provider in the United States. According to Ryan (2006), enrollment in state programs now almost matches enrollment in federal Head Start programs (p.54). Due to its size and amount of federal funding, Head Start has often been the subject of effectiveness studies. However, the research has been problematic and prior to 2006, there had never been a “long-term, large-scale, randomized trial of a typical Head Start program” (p.61). The answer to this research dilemma is the Head Start Impact Study mandated by congress in the 1998 reauthorization of the program. The study was developed to establish, on a national level, whether or not the Head Start program makes a difference in development and learning for low-income children.

Barnett (2008) identified the Head Start Impact Study as the strongest study to date to assess the effects of participation in the program. This study involved a random sample of 5,000 newly entering 3- and 4-year-old children from 84 Head Start programs across the nation. Results revealed that providing access to Head Start has a positive impact on children’s preschool experiences with positive benefits related to school readiness; however, these gains were not as significant by the end of first grade. “The

one glaring difference relative to other programs found to produce large educational gains for children is that Head Start teachers have relatively low levels of formal education and pay” (Barnett, 2011, p. 53). These gains are indicative of the structure of the Head Start performance standards and amount of professional development afforded to teachers.

Based on his review of multiple preschool studies, Barnett (2008) concludes, “The research literature does establish that programs with well-educated, adequately paid teachers, small classes (no more than 20 children), and reasonable staff-child ratios (fewer than 1:10) have repeatedly produced strong short- and long-term educational gains” (p. 19). Historically, preschool effectiveness studies have focused on elements related to teacher-child interactions and classroom environment with little research conducted to assess the impact of specific teacher characteristics such as education level and professional development on overall program quality as measured by student outcomes.

Prekindergarten Teacher Education Level and Professional Qualifications

The importance of providing specialized training for those working with young children was recognized very early in the field of formal education. Comenius authored the *School of Infancy* in 1633 as instruction for mothers whom as a group he saw as unprepared to assume the role as their child’s first teacher (Lascarides & Hinitz, 2000). Comenius defined appropriate content and learning activities for children under the age of six and his ideas align with the curriculum used in United States prekindergarten programs today.

Frederick Froebel, frequently referred to as the “father of kindergarten” was one of the first to begin educating early childhood practitioners. Froebel, (as cited in Lascarides & Hinitz, 2000), in explaining the purpose of kindergarten in a letter written in 1844, also proposed that he would “educate female and male “gardeners” who will be able to understand the earliest care and education of childhood” (p. 100). The first kindergartens not only served children, but also provided a training institution for early childhood teachers.

A disconnect between preschool and the rest of the public school system evolved during the time prior to 1950 when the federal government was involved in creating and financing emergency nursery schools (Lascarides & Hinitz, 2000). These public institutions were deemed emergency schools due to being established at a time of severe joblessness, creating jobs for unemployed teachers and other workers. These schools also provided assistance to parents having difficulty meeting the nutritional and developmental needs of their children due to economic difficulties. When the emergency nursery schools were first established only 6.5 percent of the teachers had experience teaching in a nursery school and the availability of qualified instructors was a problem (Lascarides & Hinitz, 2000). Teachers were employed not only based on their qualifications (ranging from kindergarten to high school), but also their need for employment. Although the nursery schools were widely recognized as a benefit to children and families, they were the first programs to be cut from public schools when funding became a problem. In addition, the nursery school program was moved out of

the federal Educational Division in 1942, resulting in what Lascarides and Hinitz refer to as “long-range implications” (p.384).

Following the eventual fade out of publicly funded nursery schools, the federal government became involved in preschool education again in 1965 with the establishment of Head Start. Although Head Start had established training programs for teachers, the challenge of meeting the growing need for skilled preschool teachers and childcare workers led to the creation of the Child Development Associate (CDA) credential in 1972.

Lascarides and Hinitz (2000) point out that while a Bachelor or Associate of Arts degree have “broadly based requirements in general education”, the Child Development Associate (CDA) is “more specifically focused on competencies for working with preschool children” (p. 419). In contrast to the college degrees, the CDA credential does not necessitate collegiate course work, but requires 480 hours of experience working with children and 120 clock hours of training in child care education, both of which must have occurred within the past five years prior to application for the assessment (Council for Professional Recognition, 2011). During the first 20 years of the CDA credentialing program, more than 60,000 credentials were awarded with an estimated 80 percent being Head Start employees. Citing numerous research studies by doctoral candidates and the Council for Early Childhood Professional Recognition, Lascarides and Hinitz declare, “the CDA credential has created a cadre of competent, skilled educators who provide knowledgeable care and education for young children in quality programs” (p. 421).

Following an extensive review of the evidence from research on program quality combined with studies on teacher education, the Committee on Early Childhood Pedagogy of the National Research Council concluded, “A college degree with specialized education in child development and the education of young children ought to be required for teachers of young children” (Bowman et al., 2001, p. 276). Although this recommendation was made more than a decade ago, one of the debates featured in the book, *The Pre-K Debates Current Controversies and Issues* centers on what qualifications should be required of preschool teachers (Zigler, Gilliam, and Barnett, 2011). The reasons for a continual discussion on how much education should be required for preschool teachers in publicly funded programs include the impact on program costs, the availability of qualified personnel and mixed results of research regarding the significance of teacher educational qualifications (Barnett, 2011).

The education level and professional training for the average early childhood teacher does not provide adequate preparation for the increasing demands placed on preschool teachers by parents and policy makers (Bowman et al., 2001). “The knowledge and skills required of an effective preschool teacher have increased as science has revealed more about the capabilities of young children, how they learn best and the importance of early learning for later school success” (Barnett, 2004, p. 7). Although there is growing understanding and support of the notion that teaching young children is complex, many states still require barely more than a high school education for preschool educators.

“The new model of preschool teaching is an intentional teacher who actively interacts with children and uses extensive knowledge of both individual and group developmental and learning capabilities—skills and knowledge unlikely to be acquired outside of a high-quality collegiate-level teacher preparation program” (Bowman, 2011, p56).

Bowman goes on to cite research that supports the idea that a degreed teacher has an expanded knowledge base, uses richer language and has more sensitive and less punitive teacher-child relationships.

The National Institute for Early Education Research (NIEER) has continuously advocated for better-educated preschool teachers asserting that programs employing college graduates are more effective and a good use of taxpayer’s money. In a policy brief authored by Barnett (2004), NIEER recommends a college degree and specialized training for teachers in publicly funded pre-K programs. Other recommendations include designing college programs to support current early childhood educators in their pursuit of a degree, providing pay and benefits comparable to teachers in grades K-12, and developing state policies that support hiring more capable teachers. Teachers with more education and training are more likely to engage in classroom practices that produce good outcomes for children. Barnett (2008) recommends that teachers in preschool programs participate in a continuous improvement processes for teaching and learning that includes supervision and coaching element.

The National Association for the Education of Young Children (NAEYC) has adopted teacher qualification guidelines as part of their accreditation standards. In order

to be accepted as a candidate for accreditation from NAEYC, prekindergarten programs must employ a staff where at least 75% of the teachers have a Child Development Associate (CDA). However, once accredited, programs are always assessed on a criterion that requires all teachers to have a minimum of an associate's degree or equivalent, and at least 75% of instructional staff a bachelor's degree or equivalent (NAEYC, 2011). While this criterion will not keep programs from remaining accredited, progress on attaining the standard is required as part of the annual accreditation report.

Not all researchers are convinced that a college degree should be required for early childhood educators. Fuller (2011) questions the motive behind the push for early childhood teachers to have a bachelor's degree as a minimum education requirement. His speculation is that the motive is not in relation to concern for quality but more of a desire for government control of education. Fuller uses the impact on educational practices resulting from the No Child Left Behind law as an example of how the government attempts to regulate education. His theory is that requiring bachelor's degrees for early childhood teachers is appealing to the teachers' unions because of the potential for more jobs at better wages. Fuller suggests that improving the quality of preschool programs should begin with recruiting and selecting preschool teachers who have the qualities that are known to positively impact child development.

Pianta (2011) asserts that the debate regarding requirements for teacher degree level is a distraction from a real need for focused professional development that supports effective teaching in early childhood. The premise of Pianta's argument is that a degree does not guarantee the teacher possesses the ability to provide "skillful combinations of

explicit instruction, sensitive and warm interactions, responsive feedback and verbal engagement and stimulation that is intentionally directed to ensure children's learning, while embedding these interactions in a classroom environment that is not overly structured or regimented" (p.65). These essential ingredients for high quality programs do not appear to be produced through routine teacher education programs and require focused training and support (Pianta, Barnett, Burchinal, & Thornburg, 2009).

A review of the degree requirements for a bachelor's degree in early childhood at four of Florida's largest state universities revealed consistent program requirements. The coursework required for the Early Childhood Bachelor of Science degree at each of these state universities is consistent across programs and include the following general topics:

- Foundations in early childhood theory
- Child growth and development
- Language acquisition and emergent literacy
- Language arts and children's literature
- Content area (math, science, social studies) instruction
- Assessment, evaluation and reporting progress
- Creative arts
- Parent and family involvement
- Children with special needs
- Classroom management
- English Language Learners

Each of the degree programs reviewed requires field experiences and a full-time internship. The programs at each of these universities are designed so that students completing the program of study are eligible for Florida Teacher Certification in Prekindergarten-Primary Education (PK3). Some of the universities also offer a bachelor's degree in child development that generally does not lead to Florida teacher certification. This degree is for persons interested in working with young children, but not seeking teacher certification (University of Central Florida, 2012).

Credentials for Florida Voluntary Prekindergarten Teachers

Florida Statute defines the required professional credentials for instructors in the voluntary prekindergarten (VPK) program. Often, there are two adults in a VPK classroom with one person identified as the lead instructor and the second person identified as an assistant teacher or "second adult". A second adult is required in the classroom when the class size in a school year program exceeds 10 students. The minimum credential for the lead instructor in a school year VPK classroom is a high school education and a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC). Teachers working in a summer VPK program are required to be a certified teacher or hold a bachelor's degree. There are no educational requirements for the assistant teacher (second adult) in a VPK classroom.

According to the latest yearbook published by the National Institute for Early Education Research (NIEER), Florida is one of only three state prekindergarten programs in the nation that does not require teachers to have a bachelor's degree or at least

specialized training in pre-K (Barnett et al., 2011). All Florida public school districts are required to offer a summer VPK program consisting of 300 instructional hours. This program is operated on a much smaller scale than the school year programs and instructors for summer VPK are required to have a bachelor's degree as a minimum credential.

In lieu of requiring voluntary prekindergarten (VPK) teachers to have a college degree, the state of Florida has taken strides to make certain lead instructors in the programs have an understanding of the literacy needs of young children. VPK instructors with less than a bachelor's degree are required to take the Florida Department of Education Emergent Literacy Course for VPK Instructors soon after being hired to teach in the program. The course covers emergent literacy, language, emergent reading, emergent writing, and environment. This self-paced program is offered online and include interactive learning activities, video demonstrations of lessons, techniques for implementing "research-based" instructional practices and "competency based assessments" (Florida Department of Education, 2005).

In addition to the emergent literacy course, all voluntary prekindergarten (VPK) teachers are required to have training in and document the teaching of the Florida Early Learning and Developmental Standards for 4-year-olds. The early learning coalitions that provide oversight for the VPK operational policies and procedures at the local level monitor and document compliance with the credential, training, and curriculum requirements for each VPK provider in the jurisdiction.

Strengthening the Prekindergarten Workforce

According to the United States Bureau of Labor (2012) statistics, the 2010 median pay for preschool teachers was \$25,700 per year and the entry-level education was listed as an associate's degree, with the job outlook for the next 10 years (2010-2020) being a 25% increase, or faster than average. Based on the information provided in the Bureau of Labor's *Occupational Outlook Handbook for 2012-13*, there were 456,800 preschool teacher jobs in public and private schools, childcare centers, and non-profit organizations with education and training requirements varying by state. The increase in the number of preschool educators projected for the next decade merits attention to the qualifications of the workforce.

The prevalence of preschool programs being offered in both public and nonpublic settings has called into question the traditional practice of hiring preschool teachers who do not have a college degree. Prior to the rise of universal prekindergarten programs, the majority of the preschool population was served in the private sector with the exception of federally funded programs such as Head Start and Title I, and some state-funded pre-K opportunities for children from low-income families. For the most part, private preschool programs were not held to the credentialing standards and salary requirements of public school systems.

The emergence of widely available public prekindergarten programs creates a need for educated and well-trained teachers while creating a problem for providers and lawmakers in deciding what qualifications to require for preschool staff. A significant factor that impacts the situation is paying salaries comparable to public school teachers

employed in elementary and secondary schools. Ackerman, Barnett, Hawkinson, Brown, and McGonigle (2009) caution, “It seems unlikely that the best quality teachers with bachelor’s degrees can be consistently recruited and retained to work in non-public school settings if they are not paid on par with their public school teacher counterparts” (p.14). A discrepancy between the quality of certain public and private preschool programs in New Jersey led to a court decision mandating that preschool teachers, even those in the private sector, must have a four year degree and be certified in early childhood education. This goal was attained through specific actions orchestrated by the courts and supported through the local university system. A detailed discussion of the evolution of prekindergarten teacher quality in New Jersey and the effects of that improvement is provided later in this chapter.

Based on information in a National Institute for Early Education Research (NIEER) Policy Brief, *Providing Preschool Education for All 4-Year-Olds: Lessons from Six State Journeys*, the decision to adopt minimum teacher qualifications for Florida voluntary prekindergarten (VPK) was born out of the concern that there would not be enough qualified teachers willing to work in private settings, often for lower pay, if a higher level of education was required for program instructors (Ackerman, Barnett, Hawkinson, Brown, & McGonigle, 2009). Since Florida was dependent upon private centers to provide the capacity for aggressive VPK enrollment goals, this need outweighed the importance of having a college educated staff. Ackerman et al. (2009) has questioned “whether the (Florida VPK) program’s ultimate goal of high-quality education was sacrificed to attain the goal of merely getting the program up and running”

(p. 16). Three studies of the workforce in the Florida VPK program are reviewed later in this chapter.

Lawrence (2010) outlines recommendations on strengthening the early childhood workforce that include paying comparable salaries to other educators and a national credentialing system for preschool teachers that would include minimum education requirements and a national competency test. Other advocates for an improved prekindergarten workforce remind us of the costs involved in hiring college educated teachers, especially if preschools will remain competitive in hiring and retaining the most competent instructors. A concern is that those additional costs may be passed on to preschool consumers in the private sector and present a significant budget challenge for public entities (Kelly & Camilli, 2007).

Studies Related to Education Level of the Teacher

Gillman (2005) declares that it is not uncommon for preschool teachers to lack basic educational credentials. Most states do not require specific qualifications for preschool teachers adding to the considerable variation in program models and standards. Rose (2010) emphasizes that it is not ordinary practice to focus on the quality of early childhood teachers and there is little emphasis on teacher preparation for this group. The lack of consistency in credentialing requirements contributes to the fragmented approach to preschool education in the United States essentially weakening the ability of programs to effectively impact student achievement. The variation in preschool programs is

evident in the limited research on the impact of the teacher's education level on student outcomes.

New Jersey Abbott Preschools

The issue of teacher education and credentials was addressed in *Abbott v. Burke*. The court placed a high priority on having well qualified teachers and required that all Abbott early childhood teachers be certified by the New Jersey Department of Education (Abbott v. Burke, 2000). This requirement presented a challenge because the majority of teachers in community-based preschools at the time did not meet the Court's mandate for certification.

When the mandate for certification was instituted, approximately 35% of preschool educators had a bachelor's degree and the remaining 65% were required to meet a 2004 deadline to enroll in some type of higher education program to remain employed (Lauter & Rice, 2008). The state had to act quickly and wisely to support teachers in attaining the appropriate credentials since 70% of the children were attending programs with teachers who did not meet the mandated certification requirements. The state provided teachers with several support options enabling them to get the required credentials to continue working in the Abbott preschool programs. The state had traditionally offered a nursery through 8th grade certification (N-8) and worked with the higher education community to develop a preschool through third grade certification (P-3). A scholarship program operated by the New Jersey Department of Human Services provided teachers with financial assistance up to \$5000 per year for tuition. In addition,

institutions of higher education expanded their early childhood faculties to meet the increased demand for teachers and offered an alternate certification program for teachers with a bachelor's degree who needed to add a P-3 certification. Amazingly, seven years subsequent to the Abbott VI decision, 100% of Abbott preschool teachers had a bachelor's degree and an appropriate endorsement (Lauter & Rice, 2008).

In addition to the increased credentials for instructional staff, each Abbott school district was required to employ master teachers who would model, coach, observe, and provide feedback to the teaching staff in each preschool program. This mentoring process included implicit training in using and teaching the state standards for preschool. Districts were required to provide master teachers at a ratio of no more than 20 preschool classrooms per master teacher (Lauter & Rice, 2008).

Lauter and Rice (2008) reviewed results of a study that documents the success of students who attended the Abbott preschools. The study included a total sample of 1707 students from varying ethnic backgrounds and measured the effects of the Abbott preschool experience on children, following them through to the end of their kindergarten year.

The Abbott preschool study used a published environmental rating scale to study classroom qualities and found significant improvement in classroom environments between 2000 and 2006. Environmental rating scales are often used in educational research to evaluate a variety of classroom factors including teacher-child interactions, supervision, discipline, and communication within the classroom as well as the furnishings, equipment and materials that establish the learning environment (Vu, Jeon,

& Howes, 2011). The Abbott study also noted that there was virtually no difference in the scores between preschool classrooms in public schools and those in community-based child care centers. In addition to the environmental rating scales, researchers used a range of measurements to assess oral language, literacy and math skills at the end of kindergarten. “Children who attended the Abbott preschool program for two years at ages 3 and 4 out-performed children who attended for only one year at age four and those who did not attend on all of the outcome measures with one exception [Print Awareness Test] (Lauter & Rice, 2008). These results reflect the substantial difference a high-quality, intensive universal prekindergarten program can have in the achievement levels of young children.

Meta-analysis of Prekindergarten Programs

Early et al. (2007) note that “policymakers are increasingly requiring public preschool teachers to have at least a bachelor’s degree, preferably in early childhood education” in an effort to improve the quality of publicly funded preschool programs (p.558). While improving teachers’ education level seems a logical place to start in improving preschool programs, not all research supports a correlation between teacher credentials and program quality. Although Early et al. acknowledge research supporting teacher qualifications “as an important correlate of classroom quality” they contend that “policymakers face the difficult task of identifying and setting teacher qualifications standards high enough to produce high-quality classrooms with desired child outcomes” (p. 559).

In preliminary research on teacher quality in early childhood classrooms, Early et al. (2007) found existing literature that by and large supports the idea of requiring more education for preschool teachers. However, there was no conclusive evidence that a degreed teacher will construct or guarantee a high-quality learning environment with positive learning outcomes for students (p. 560). The researchers believe the lack of consistent evidence is a result of varied approaches to studying the problem and inconsistent definitions of education and training. Therefore, in an effort to make sense of the existing research, this group of examiners used what they term a “replicated secondary data analysis” to examine seven major studies that have been conducted to study the links between teacher credentials and preschool program quality (p. 561).

Based on their work, Early et al. (2007) concluded “these analyses, taken together, do not provide convincing evidence of an association between teachers’ education or major and either classroom quality or children’s academic gains” (p. 773). There were contradictions in the research and no clear patterns that emerged. For example, two studies indicated positive outcomes when the teacher had a bachelor’s degree and one study showed a negative correlation between quality and education level of the teacher. Four studies found no association between a teacher’s level of education and program quality.

Early et al. (2007) caution against drawing conclusions that teacher education does not impact program quality. They believe that the lack of significant findings is attributed to teacher preparation systems, support within programs and market forces (p.574). The researchers surmise that a lack of uniformity in teacher preparation

programs is a contributing factor in not being able to draw conclusive evidence regarding the relationship between teachers' educational level and preschool program quality. Also, even if a teacher has been trained specifically in early childhood education; they may not receive the support necessary to effectively put into practice the teaching strategies learned in college. Finally, market forces may be impacting the number of highly qualified teachers available to teach prekindergarten. Since many program providers can hire and pay lower wages for less qualified instructors, those with a teaching degree often opt for the higher wages and benefits provided in the public schools. However, once employed by a public school, the best teachers are often assigned to the grade levels in which accountability testing occurs. The impact of this practice is fewer highly skilled teachers with a college degree being available to teach preschool. These researchers assert that the data gathered through their project indicate that policies prescribing teacher education requirements alone will not improve preschool program quality. They are hopeful that their research spurs further investigation into the role of teachers' education and quality.

The meta-analysis conducted by Early et al. (2007) is cited often in the research on the topic of minimum education requirements and credentials for prekindergarten teachers. Both advocates and opponents of requiring a bachelor's degree for prekindergarten teachers argue their point using the meta-analysis completed by Early and her colleagues. The overall inconclusive findings of the work make using the information possible, regardless of which side of the argument one wishes to support.

Tulsa Prekindergarten Study

Although the literature review did not reveal any randomized trials of large scale, state-funded prekindergarten programs, Barnett (2008) cites research conducted by Gormley and colleagues that used a “regression discontinuity design (RDD) that emulates the results of a randomized trial under reasonable assumptions” (p.10). Barnett asserts that this method contributed to the creditability of the estimates of short-term effects on achievement found in the research on Tulsa’s state funded universal prekindergarten program. The birth date cut-off for school entry was used to compare two groups of children participating in Tulsa’s pre-K program thus eliminating selection bias. In this comprehensive study, Gormley (2007) found that students transitioning to kindergarten in Tulsa who participated in the state’s universal prekindergarten program demonstrated higher achievement in reading and math of 0.36 to 0.99 standard deviations as compared to non-participants. The positive impact of program participation was found across all subgroups with no differences noted according to gender or socio-economic status. The researchers did find that effect sizes for minority children were somewhat larger than for the other groups (Gormley, Gayer, Phillips and Dawson, 2005). In Tulsa, the Head Start program co-exists with the state universal prekindergarten so that public school teachers are hired to staff the program. “The educational effects of Tulsa Head Start for disadvantaged students are much larger than the average findings for Head Start in the National Impact Study” (Barnett, 2011, p. 52). Results such as these suggest that the qualifications of the teacher may play a significant role in preschool student achievement outcomes.

Florida Voluntary Prekindergarten Program Studies

Southeast Florida Study

Pelletier (2009), citing a lack of research on the possible relationship between higher teacher degrees in the Florida voluntary prekindergarten (VPK) programs and kindergarten readiness rates, chose to conduct research on the topic using data from VPK programs in three Southeast Florida counties. The intent of the quantitative study with a correlation research design was to determine whether there was a significant positive relationship between teacher qualifications and kindergarten readiness rates. A total of 48 programs and 110 teacher credentials were included as part of the study. The research involved VPK providers in both private and public school settings with no controls in the procedures for any unique program characteristics such as poverty level of the students.

The researcher hypothesized that a teacher's level of education makes a difference in readiness rates; however, the study findings did not support this hypothesis. Pelletier (2009) determined the relationship between VPK teacher credential and kindergarten readiness rate was not statistically significant based on a Pearson's correlation coefficient of .306 with a significance of .35. Pelletier concluded, "Even though there was a positive correlation, the influence of teachers' credentials to increased kindergarten readiness rates was not statistically significant with at least a significance level of .06" (p. 89).

Pelletier (2009) noted concerns with using the Florida Kindergarten Readiness Screener (FLKRS) subtests, the Early Childhood Observation System (ECHOSTM) and at the time of the study, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), as

readiness measures, providing clarification by the test publishers that ideally these assessments are better used to measure growth over a period of time. Popham (as cited by Pelletier) indicates “the FLKRS may be an instructionally insensitive assessment tool to measure school readiness” (p. 90). Study recommendations included using a different tool to assess student readiness and evaluate VPK classroom instruction. Also, continue to research the impact the variation in prekindergarten teacher credentials has on program effectiveness.

Central Florida Study

Ganey (2010) had research results similar to Pelletier (2009) in a study of voluntary prekindergarten (VPK) programs in a central Florida county. The purpose of that study was to examine if a relationship exists between a teacher's self-reported instructional beliefs and practices, their education level and the VPK Provider Kindergarten Readiness Rates for their program. Public and nonpublic lead VPK teachers participated in the study which utilized surveys to gather the teacher education attainment data. Based on the survey responses from 98 VPK teachers, the statistical tests were run using the following five education levels: high school diploma, non-degree program/certificate, associate's degree, bachelor's degree, and master's degree. The readiness rate data for the 2008-09 program year was obtained from the Florida Department of Education VPK Provider Kindergarten Readiness Rate website. A Spearman's correlation was used to determine to what extent a relationship existed between the VPK teachers' level of education and the VPK Provider Kindergarten

Readiness Rate for each program site. The study results indicated "no significant relationships between prekindergarten teachers' education level and their school's kindergarten readiness rate" (p.86). The researcher failed to reject the null hypothesis because no significant relationships were found.

Florida Legislature OPPAGA Study

The Florida Legislature Office of Program Policy Analysis and Government Accountability (OPPAGA) published a report in February, 2012 that outlined the findings of research designed to answer questions related to the impact of the following factors on kindergarten readiness scores: VPK teachers' education level, type of VPK program attended, and type of VPK provider setting. The results of the research for the question, "Do VPK teachers with bachelor's degrees do a better job of preparing children for kindergarten compared to other teachers?" are discussed for the purposes of this literature review (Florida Legislature OPPAGA, 2012, p.2).

For the Florida OPPAGA study, the data associated with 161,106 children who attended voluntary prekindergarten (VPK) in Florida during the 2008-09 and 2009-10 program years was analyzed to determine if there was a difference in kindergarten readiness rates based on the education level of the teacher. The credentials of the three groups of teachers in the study included: Child Development Associate (CDA), associate's degree, and bachelor's degree. Researchers used actual student results from the Florida Kindergarten Readiness Screener (FLKRS) to conduct the analysis and found

that the “VPK teacher’s educational level has a minimal effect on a child’s subsequent kindergarten readiness scores” (Florida Legislature OPPAGA, 2012, p.2).

The scores for children taught by teachers with a bachelor’s degree were slightly higher than those whose teacher has a child development associate (CDA) credential; however, the difference was not significant. Based on the findings, there was a 2.3% difference between bachelor’s degree and Child Development Associate (CDA) teachers and a 0.1% difference between the bachelor’s degree and associate’s degree teachers on the overall assessment of kindergarten readiness. The study results remained constant even when controlling for other variables including socioeconomic status and race.

As explained in the section of the literature review on the Florida Voluntary Prekindergarten Provider Kindergarten Readiness Rates, the Florida Kindergarten Readiness Screener (FLKRS) is made up of two parts: a subset of the Early Childhood Observation System (ECHOS™) and two measures from the Florida Assessments for Instruction in Reading (FAIR). In addition to a comparison of the overall readiness rates for each group, the Florida OPPAGA report included results for student performance on each part of FLKRS based on the education level of the teachers instructing each group of students. The difference in readiness scores for the ECHOS portion was minimal, with an overall difference of 0.3% between the children taught by degreed teachers and those taught by teachers without a four year degree. The largest discrepancy between groups occurred in the FAIR-K testing. The children taught by teachers with a bachelor’s or associate’s degree demonstrated the same rate of readiness on the assessment, scoring 2.5% higher than those children taught by a teacher with a CDA. The lack of a

statistically significant difference in the readiness rates between groups based on the education level of the teachers led to the following study conclusion: “VPK teachers’ education level does not substantially influence kindergarten readiness scores” (Florida Legislature OPPAGA, 2012, p. 1).

In reference to the available analyses of literature on the topic of prekindergarten teacher qualifications and the relationship to program quality, Barnett (2011) comments that rather than measuring student outcomes, most studies looked at how teacher beliefs, knowledge, and practices are affected by the instructor’s level of education and professional development. The research on the effects of teacher qualifications on preschool program quality as measured by teaching, learning and child development has produced mixed results. Although some research (Pelletier, 2010; Early et al., 2007) suggests that the education level and professional qualifications of the instructor does not make a significant difference in preschool student achievement, a common element in the positive results from the Perry Preschool Project, Chicago Child-Parent Centers study, and Tulsa universal prekindergarten programs study is the programs were provided in public school settings with certified teachers who have bachelor’s degrees. Based on the findings in these studies, it appears that children are better prepared to enter kindergarten, having had the opportunity to be taught by a teacher with a college degree.

The Florida legislature does recognize the education level of the teacher as important as evidenced by the *aspirational goal* stated in State Statute 1002.65(2) (a) 2(b): “By the 2013-2014 school year, each prekindergarten class will have at least one prekindergarten instructor who holds a bachelor’s or higher degree in the field of early

childhood education or child development” (Voluntary Prekindergarten Program, 2011). Although Florida legislative language appears to support the idea of requiring a bachelor’s degree for VPK teachers, it remains to be seen whether or not this aspirational goal will come to fruition by the 2013-14 program year. Research similar to the type conducted in this study would certainly provide lawmakers with additional information to assist their decision-making when deciding if this goal should become a state requirement.

Relation of Literature to the Method of Study

The growing diversity of children in preschool programs requires that teachers have a broad knowledge base enabling them to know how to assess and respond to the varying needs of students. Bowman (2011) acknowledges that the available research supports the idea of more education for early childhood teachers, but “the evidence supporting the bachelor’s degree is not conclusive” (p. 56). This lack of conclusive evidence of a link between teacher qualifications and program outcomes and the continued debate on educational requirements for early childhood educators indicate a study to research these variables was both timely and appropriate. This study extended the previous research by Pelletier (2009) and Ganey (2010) involving the impact of teacher education levels on program quality as measured by Florida Voluntary Prekindergarten Provider Kindergarten Readiness Rates because it includes all school district affiliated VPK programs in the state rather than a combination of private and public providers in one geographical area.

Rose (2010) conducted research on the impact of attending a school district affiliated prekindergarten program on student outcomes in the early elementary years. A significant difference was found in the overall school performance for those students who attended the school district programs as opposed to those who had no preschool experiences outside of the home environment. Rose asserts that in addition to being held accountable by the superintendent and local board of education, school district affiliated preschools have the advantage of access to quality professional development and well qualified school leaders thus providing a better structure for improved student outcomes.

According to Barnett (2004), most teachers working in a public school prekindergarten program have at least a four year college degree. Later writing by Barnett (2011) asserts that preschool programs with consistent positive student achievement results are those in public schools employing prekindergarten instructors with bachelor's degrees and paying them salaries equitable to other teachers in the system. Similar findings were noted in the Tulsa Prekindergarten Study (Gormley, 2007) and review by Galinsky (2006) of the three classic longitudinal studies of preschool programs for impoverished children. This research study examined the education level and credentials of teachers working in Florida VPK programs operated by school districts and collected the descriptive statistics for this segment of the preschool education workforce.

The effects of poverty on student achievement are widely recognized and well established in the literature. Ackerman, Barnett, Hawkinson, Brown, and McGonigle (2009) have cautioned, “. . . the results of kindergarten readiness assessments are strongly

related to parental income”; therefore, it is important to consider the socio-economic status of the students when evaluating program outcomes (p. 19). Unlike the research involving Florida VPK programs conducted by Pelletier (2009), this study utilized statistical methods that considered poverty as a variable that could impact student outcome measures.

Summary

This literature review provided an overview of the changes in early childhood education during the past 50 years. The discussion included information regarding the status of prekindergarten in the United States and program quality indicators such as national standards and measures of kindergarten readiness. Prekindergarten effectiveness studies related to the impact of teacher education level and the debate surrounding minimum qualifications for preschool educators were incorporated into the paper as part of the reviewed research. The information presented established the foundation for a dissertation on whether or not the education level of the teacher has an impact on the quality of early education programs as measured by Florida Voluntary Prekindergarten Provider Kindergarten Readiness Rates. Universal prekindergarten programs vary in the required credentials for teachers and the existing research on the relationship between a teacher’s education level and program quality offer conflicting conclusions. The work of Early et al. (2007) highlights many of the challenges present when trying to ascertain the unique aspects of teacher preparation that may impact program quality. However,

continued study of this relationship was certainly merited given the potential to positively impact educational programming for young children.

This study was needed due to the current debate surrounding whether or not teachers of preschool students should have a bachelor's degree and the lack of conclusive evidence supporting this idea. Research on the possible link between teacher education level and program quality adds to the available information for policymakers as they determine the governance and financing of universal prekindergarten programs. Furthermore, the literature review revealed a lack of substantial research that measures the effects of teacher qualifications on student outcomes as measured by a standardized assessment program. The resulting research contributed to this void in the literature.

Chapter 3 focuses on the methodology that was used to conduct the research study and provides specific information regarding the research design, including selection of the population and sample. Also, details related to data collection and the processes used for analysis are included in the chapter.

CHAPTER THREE: METHODOLOGY

The primary goal of this study was to determine if the professional credentials of the instructor makes a significant difference in the kindergarten readiness rates for voluntary prekindergarten (VPK) program providers. The Florida VPK Provider Kindergarten Readiness Rates for program year 2010-11 were examined along with the specific education level, certification credential and certification status of each public school VPK lead instructor to determine if noteworthy disparities in program quality exist based on the professional credentials of the teacher. A request for exemption from the University of Central Florida Institutional Review Board (IRB) was approved given that the data used was publicly available and did not involve individuals. The IRB approval letter is included in the Appendix.

Florida Statute 1002.69(4) requires that the Florida Kindergarten Readiness Screener (FLKRS) be administered within the first 30 days of kindergarten to all students who attended a voluntary prekindergarten (VPK) program. The purpose of this assessment is to “provide objective data concerning each student's readiness for kindergarten and progress in attaining the VPK performance standards” (Florida Department of Education, 2009, slide 4). In addition, FLKRS results are also used to assign a kindergarten readiness rate to each Florida VPK program provider.

The Florida Kindergarten Readiness Screener (FLKRS) is composed of two parts. One element of the FLKRS is a subset of the Early Childhood Observation System (ECHOSTM). This observation tool assesses development in seven domains: language

and literacy, mathematics, social and personal skills, science, social studies, physical development and fitness, and creative arts. The second part of FLKRS involves two measures from the Florida Assessments for Instruction in Reading (FAIR): the Broad Screen and the Broad Diagnostic Inventory. The Broad Screen includes letter naming and phonemic awareness tasks. Listening comprehension and vocabulary tasks are measured using the Broad Diagnostic Inventory; however, this portion of FLKRS is only administered in schools choosing to use the FAIR extensively for progress monitoring and is not part of the Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate calculation.

The Early Childhood Observation System (ECHOS™) portion of the Florida Kindergarten Readiness Screener (FLKRS) is typically administered by the classroom teacher. ECHOS™ is an observation instrument; therefore, it can be administered individually or in a group setting depending on the specific behaviors being observed. Training materials for the FLKRS assessment suggest that teachers plan activities that will elicit the behaviors being observed so that the assessment is embedded in classroom activities (Florida Department of Education, 2012b). The Broad Screen measure from the Florida Assessments for Instruction in Reading (FAIR) must be administered individually, and is usually also conducted so by the classroom teacher. A teacher who taught a child in voluntary prekindergarten (VPK) is specifically prohibited from administering any portion of the FLKRS to that particular student.

The results of each student's performance on the Florida Kindergarten Readiness Screener (FLKRS) are linked back to the VPK program attended by the child enabling

the state to assign a kindergarten readiness rate for each provider. This readiness rate serves as an indication of quality in reference to how well the program prepared the student for kindergarten. Specifically, the readiness rates provide an indication of whether or not the VPK instructor provided adequate instruction for students in the Florida Early Learning and Developmental Standards for Four-Year-Olds. VPK Provider Kindergarten Readiness Rates are calculated by determining the percentage of children who score ready on both measures of the FLKRS. The only children figured into the calculation are those classified as substantially completing the program, meaning they attended 70% of the available program days. According to a frequently asked questions document on the VPK Provider Kindergarten Readiness Rate web site, the state of Florida classifies a student as ready for kindergarten if they score in the Consistently Demonstrating or Emerging/Progressing ranges on ECHOSTM and achieve a probability of reading success score at or above 67 percent on the FAIR Broad Screen measure. An example of how readiness rates are calculated also appears in the frequently asked questions document on the same web site:

“If, out of a total of 22 children served by a VPK provider, 20 children attended at least 70% of the program and are screened on the ECHOSTM and FAIR and 15 are ready, 15 divided by 20 equals 75 percent” (Florida Department of Education, 2012c, FLKRS section, para 4).

The maximum Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate is 100 and the minimum acceptable rate is 70. VPK providers that fail to attain an acceptable kindergarten readiness rate are identified as low performing and must

develop a program improvement plan. A VPK provider failing to achieve the minimum readiness rate for a second year is placed on probation. The program loses eligibility to offer VPK following three consecutive years of achieving a readiness rate below the state minimum standard unless a waiver is granted by the Florida Department of Education.

This chapter details the methodology used for the study including a review of the research questions and hypotheses. The design for the research, including descriptions of the population and sample, data collection and data analysis are provided along with a chapter summary.

Statement of the Problem

To date there is insufficient information concerning the impact of variability in education requirements and credentials for Florida Voluntary Prekindergarten (VPK) lead instructors statewide on VPK program quality. For the purpose of this study, program quality was defined by the VPK Provider Kindergarten Readiness Rate calculated for each program site by the Florida Department of Education/State Board of Education.

Although the national standard credential for a prekindergarten teacher is a bachelor's degree, the minimum requirement for a Florida VPK instructor is a high school education and Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC), which can be obtained with a Child Development Associate (CDA) credential. These credentialing programs for early childhood generally require a minimum number of contact hours working with young children in addition to a required number of hours in early childhood education coursework.

In contrast to the minimum credentials for VPK instructors required by state statute, some public school VPK providers require more advanced credentials for instructors such as a bachelor's degree in early childhood and/or the appropriate state teacher certification. This study examined the variance in the professional credentials of VPK lead instructors in Florida school districts and whether or not this variability makes a significant difference in program quality as measured by VPK Provider Kindergarten Readiness Rates.

Research Questions and Hypotheses

1. To what extent does the mean VPK Provider Kindergarten Readiness Rate for each public school district differ based on the minimum education level required for a lead instructor in the program?

H_{01} : There is no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rate for each public school district based on the minimum education level required for a lead instructor in the program.

2. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program?

H₀₂: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program.

3. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program?

H₀₃: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program.

4. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program?

H₀₄: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program.

Research Design

This quantitative, ex-post facto, non-experimental study was designed to examine whether there is a significant difference in Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates based on the education level and professional preparation of the teacher. Statistical tests were conducted using readily available data from the Florida Department of Education Office of Early Learning and the Florida VPK Provider Kindergarten Readiness Rate website at <https://vpk.fldoe.org/>.

The study required different data elements: Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates for 2010-11, type of VPK provider, program type, and the poverty level or socio-economic status of each program site as indicated by the percent of students participating in the federal free or reduced price lunch program. This information was retrieved from the interactive Florida VPK Provider Kindergarten Readiness Rate website that allows users to select readiness rate search criteria to facilitate the collection of specific data such as type of provider, program type, and poverty level. The types of VPK providers include programs offered in family based care, private centers and public schools. The types of VPK programs available are the school year (540 hours) and the summer (300 hours) program. The percentage of students qualifying for free or reduced price lunch can also be selected as part of the

custom search criteria enabling the researcher to identify the socio-economic status for each program site.

In addition, the professional credentials, education level and certification status for each instructor in a public school voluntary prekindergarten (VPK) program were obtained through special request from the Florida Department of Education Office of Early Learning. This information was listed by classroom, not instructor name. The general public may also access this information through the Florida Child Care Resource and Referral program or a local early learning coalition.

The VPK programs included in the study population were those operated by public school districts. Readiness rate data is reported by program site, rather than individual classrooms and the actual number of VPK classes varies by location. For example, one VPK program may consist of one class while another program site in the same school district may consist of several classes, each with an individual lead instructor. The information obtained from the Florida Department of Education Office of Early Learning regarding the professional qualifications of lead instructors was reported by class. The data collected for the study was compiled in a Microsoft Excel spreadsheet by matching the readiness rate for each program to every class at that site. This allowed the researcher to include the data for each lead instructor in a VPK program, rather than clustering the information by program site.

Population

The population for this study was composed of the Florida Voluntary Prekindergarten (VPK) programs operated in public schools that were assigned a kindergarten readiness rate by the State of Florida for school year 2010-11. A VPK provider must have at least four students enrolled in the program for at least 70% of the school year to receive a readiness rate. The study population included those programs operated during the regular school year, but excluded summer VPK programs. VPK programs operated in family based care or private center settings were excluded as were those programs with no free or reduced price lunch program participation rate. Only those programs with at least 10 students in the VPK program who qualify for free or reduced price lunch have this data element reported. In addition to studying whether significant differences existed in the mean VPK Provider Kindergarten Readiness Rate for each program operated by a public school district, the researcher also sought to determine whether differences occurred as a result of individual instructor qualifications. The qualifications for the lead instructor were reported by individual VPK class; therefore, the population also included all classes in public school VPK programs that met the study criteria.

Sample

The population sample of Florida school districts with voluntary prekindergarten (VPK) programs that met the study criteria of having a readiness rate and socio-economic

data reported were included for the portion of the research related to mean readiness rates for school districts. For the parts of the study related to the professional qualifications of VPK instructors, stratified random sampling was used to select a sample population according to the element being examined. This sampling method enabled the researcher to be more precise in creating equal size groups to run the statistical analyses to test for significant differences in the mean kindergarten readiness rate for each group.

There were three data points related to professional qualifications collected for each voluntary prekindergarten class instructor included in the population: education level, certification credential and certification status. In order to draw stratified random samples for the study, the information was organized into groups for each of these data points. The data for education level and certification credential was organized into groups according to categories provided by the Florida Department of Education Office of Early Learning. The data for certification status was organized into two groups based on whether or not the instructor is a Florida certified teacher.

Data Collection

The purpose of the study was to determine whether statistically significant differences in the readiness rates for public school VPK providers exist among programs employing instructors with varying education levels and professional preparation and to add to the body of knowledge on promoting quality prekindergarten programs. The dependent variable, reported as interval data by VPK program, was the 2010-11 VPK Provider Kindergarten Readiness Rate for each program provided in a public school

district. The independent variables included the professional qualifications of VPK instructors for each class in the population and were defined as education level, certification credential and certification status, all of which were converted to an ordinal scale providing a means to standardize the data. The poverty level or socio-economic status of each VPK provider reported as the percentage of students who qualify for free or reduced price lunch served as a covariate and was also reported as ordinal data.

The 2010-11 Florida VPK Provider Kindergarten Readiness Rates, provider and program type are all publicly available secondary data available from the Florida Department of Education (FDOE) website designated for this purpose and provided the information necessary to study the dependent variable. The covariate characterizing the poverty level (percentage of students who qualify for free or reduced price lunch) of each program site was also reported as part of the Florida VPK Provider Kindergarten Readiness Rate database. The readiness rate report available on the FDOE website was easily converted to a Microsoft Excel spreadsheet which simplified the data collection process.

Data collection for the independent variable involved contacting the Florida Department of Education Office of Early Learning (FDOE OEL) to request the professional credentials listing of the lead instructor for each public school voluntary prekindergarten (VPK) class in the state of Florida. This information is collected by the FDOE OEL as part of each VPK program's annual application process and made public through the Florida Child Care Resource and Referral program. The actual education level, certification credential, and certification status of the lead instructor for every

public school VPK class in the state of Florida was accessed using a database published by the FDOE OEL. The Table 3 summarizes the independent variables and how these factors were grouped for inclusion in the study.

Table 3: Independent Variables-Professional Qualifications

Independent Variable – Professional Qualifications	Groups
Education Level –highest degree of the VPK lead instructor	<ol style="list-style-type: none"> 1) High School 2) Technical Certificate 3) Associate of Arts/Science 4) Bachelor of Arts/Science 5) Master or Arts/Science 6) Doctorate
Certification Credential- official documentation that qualifies a person to be a lead instructor for a VPK class	<ol style="list-style-type: none"> 1) Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC) 2) Associate of Arts/Science 3) Bachelor of Arts/Science 4) Master or Arts/Science 5) Doctorate
Certification Status- indication of whether or not the VPK lead instructor holds a valid Florida teacher certification	<ol style="list-style-type: none"> 1) Yes 2) No

Once the VPK Provider Kindergarten Readiness Rates for school year 2010-11 were released, the researcher matched the data to the instructor information for each VPK class in the population using Microsoft Excel. Editing the data was necessary to eliminate information not essential for the study, or not meeting the study population criteria. The final data set for the study was entered into the software program Statistical Package for the Social Sciences (SPSS), Version 18.0, to conduct the statistical analysis.

Data Analysis

The population of Voluntary Prekindergarten programs included in the study was described using descriptive statistics. The specific variables analyzed were VPK Provider Kindergarten Readiness Rates and the minimum education level required for employment as an instructor in the program. In addition, descriptive statistics were also used to describe the education level, certification credential, and certification status of the instructor for each VPK class in the population. According to Lomax (2007), descriptive statistics allow researchers to “tabulate, summarize and depict a collection of data in an abbreviated fashion” (p. 6). All of the information was de-identified in a manner that ensured anonymity of the program sites.

For research question one, an analysis of variance (ANOVA) was used to determine if there are statistically significant mean differences in the VPK Provider Kindergarten Readiness Rates for school districts based on the minimum education level required for employment as the lead instructor in a VPK class. Lunenburg and Irby (2008) state, “If a study is conducted in which two or more sample means are compared on one independent variable, then to test the null hypothesis the researcher would employ analysis of variance (ANOVA)” (p. 72). Since this study involved the comparison of more than two means, the one-factor analysis of variance (ANOVA) was used to examine whether or not there are statistically significant mean differences in the Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates for each school district based on the minimum education level required for VPK instructors. According to Lomax (2007), ANOVA is an appropriate statistical test to use when “the

researcher is interested in the influence of the independent variable on the dependent variable” (p. 197).

Research questions two, three, and four are similar with the only difference among these three questions being the independent variable that was studied. Question two required examination of whether or not there is a difference in VPK Provider Kindergarten Readiness Rates based on the education level of the lead instructor. Question three posed a similar query, but used the certification credential of the instructor as the independent variable. The independent variable under examination in question four is whether or not the lead instructor is a Florida certified teacher. In an effort to control for differences that may occur as a result of other factors, these questions were analyzed using analysis of covariance (ANCOVA) as the statistical test.

In addition to having the same statistical capabilities of a one-factor ANOVA, analysis of covariance (ANCOVA) also enables the researcher “to adjust initial group differences statistically on one or more variables that are related to the dependent variable but uncontrolled, and to increase the likelihood of finding a significant difference between group means” (Lunenburg & Irby, 2008, p.75). Thus, the researcher is able to control for prior differences between groups on a related variable such as socio-economic status.

“With a one-way analysis of covariance (ANCOVA), each individual or case must have scores on three variables: a factor or independent variable, a covariate and a dependent variable” (Green & Salkind, 2011, p. 209). In this study, the independent variable was the education level, certification credential or certification status of the lead

instructor, the covariate was the poverty level of each program site (indicated by percentage of students receiving free or reduced price lunch), and the dependent variable was the VPK Provider Kindergarten Readiness Rate.

An analysis of covariance (ANCOVA) was used to determine whether or not the group means on the dependent variable, adjusted for differences on the covariate, differed significantly from each other. This statistical test provided a means for the researcher to control for a potential group difference attributed to poverty level while examining possible differences in VPK Provider Kindergarten Readiness Rates based on the professional qualification of the lead instructor. The resulting statistics enabled the researcher to provide insight into the problem of whether or not the variability in credentialing requirements for VPK instructors makes a significant difference in program quality as measured by VPK Provider Kindergarten Readiness rates.

"Analysis of covariance (ANCOVA) is a statistical way of controlling on key variables" and while it cannot completely remove the impact of a covariate, ANCOVA provides a statistical method for reducing bias (Stevens, 2007, p. 288). For this study, the covariate was poverty level and without such a control, the researcher would be unable to determine if a difference in the means is attributed to the dependent variable or whether initial differences due to the covariate is simply reflected in the final means for each group. ANCOVA yields a more powerful test by removing the variance in group means attributed to the covariate (p.286).

Research indicates that poverty can have an adverse effect on child development and school achievement. Rebell and Wolff (2012) cite international student assessment

results that “indicate U. S. schools with fewer than 25 percent of their students living in poverty rank first in the world among advanced industrial countries” (p.24). They go on to explain that when the test results of students from high poverty schools are added in to the equation the ranking of the United States drops significantly. The establishment of the Head Start program in 1965 was based on the premise that poverty can have a detrimental impact on the achievement of young children. In *Teaching with Poverty in Mind*, Jensen (2009) references research findings that suggest “family income correlates significantly with children’s academic success, especially during the preschool, kindergarten, and primary years” (p.10). He goes on to explain that living in an impoverished environment is often accompanied by other factors such as poor health care and school absenteeism that compound the negative impact of poverty level income on student achievement.

"In general, any variables that theoretically should correlate with the dependent variable, or variables that have been shown to correlate on similar types of subjects, should be considered as possible covariates" (Stevens, 2007, p. 293). Given the common agreement regarding the impact of poverty on student achievement, even in prekindergarten, it was appropriate for the poverty level of each VPK program site to be used as the covariate when utilizing the analysis of covariance (ANCOVA) test to compare group means and determine whether or not statistically significant differences exist based on groups. This procedure made it possible to determine as much as possible if certainly there was a difference in the Voluntary Prekindergarten Provider

Kindergarten Readiness Rates it was the professional preparation of the instructor and not other factors, such as the socio-economic status of the children attending the program.

The researcher established an alpha level (α) of .01 for the study. According to Stevens (2007), the nominal α (level of significance) is the “percent of time one is rejecting falsely if one or more of the assumptions is violated” (p.57). The residual plot, skewness and kurtosis statistics in addition to the Levene’s test of homogeneity were examined to determine if the assumptions for the chosen statistical tests were satisfied. Onwuegbuzie and Daniel (2003) purport that the Levene’s test must always be “undertaken and documented” to avoid a serious assumption violation in analysis of covariance (ANCOVA) (Analysis of Covariance test section, para 4). The statistical tests were conducted using equal or nearly equal groups, making “the F statistic robust for unequal variance”; sample sizes of no fewer than 50 were used to confirm the assumption of normality due to the “*Central Limit Theorem*, which states that the sum of independent observations having any distribution whatsoever approaches a normal distribution as the number of observations increases” (p. 57).

Effect size was determined by evaluating statistical significance (p value) and practical significance (partial η^2). In analysis of covariance (ANCOVA) partial η^2 range in value from 0 to 1 and is defined as the “proportion of variance of the dependent variable related to the factor, holding constant (partialling out) the covariate” (Green & Salkind, 2011, p. 213). For the purposes of this study, practical effect sizes, indicated by partial η^2 were defined using the subjective, conventional criteria defined by Cohen:

small = .02; medium = .05; and large = .08 (Lomax, 2004; Pedhazur, & Pedhazur-Schmelkin, 1991).

Summary

The methodology used in this quantitative study was explained in chapter 3. An introduction, statement of the problem, research questions and related null hypotheses were described along with the research design. The research design section included a description of the population, sample, data collection and data analysis. This section also included specific information on how the data was collected, including the use of archival data from the Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate website. The use of analysis of covariance (ANCOVA) statistical tests to compare the means among specific groups while adjusting for differences on the covariate of poverty level (socio-economic status) was also explained along with the use of analysis of variance (ANOVA) to assess the extent of mean differences in VPK Provider Kindergarten Readiness Rates based on the minimum education level required for employment as a VPK instructor. The study, which involved publicly available data, was exempt from evaluation by the Institutional Review Board (IRB) and the approval letter appears in the Appendix. The results of the study are discussed in detail in Chapter 4.

CHAPTER FOUR: ANALYSIS OF DATA

This study investigated the disparity in instructor qualifications that existed in Florida voluntary prekindergarten (VPK) programs in 2010-11 and the impact this may have had on VPK program quality as measured by the Florida VPK Provider Kindergarten Readiness Rates. Random stratified sampling from the Florida VPK instructor database was used to determine to what extent, if any, there is a difference in mean VPK Provider Kindergarten Readiness Rates based on the professional qualifications of the lead instructor.

Statistical tests used in the study included analysis of variance (ANOVA) and analysis of covariance (ANCOVA) as appropriate for each research question under investigation. The dependent variable was the Florida VPK Provider Kindergarten Readiness Rates. The independent variable was the professional qualifications of the lead instructor for each VPK classroom in a Florida public school. For the purposes of this study, professional qualifications included education level, type of certification credential, and certification status. For the ANCOVA analyses used in the study, the covariate was poverty level, defined as the percentage of students receiving free or reduced price lunches at each of the program sites.

Descriptive Statistics

Population

A Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate was reported for public school VPK school year programs located in 55 of the 67 school districts in Florida. These 55 school districts had VPK programs that met the study population parameters of having a reported readiness rate and socio-economic data reported. There were 667 public school (including charters) VPK programs that met the study population criteria. For the purposes of this study, the nine charter school sites were removed, leaving a total of 658 programs located in 55 public school districts. The VPK Provider Readiness Rate and poverty level (socio-economic data) for each program site was obtained from the Florida Department of Education VPK Provider Kindergarten Readiness Rate website.

In addition to studying whether significant differences existed in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate for each public school district, the study also sought to determine whether differences between the Kindergarten Readiness Rates of public school VPK programs exist as a result of the professional qualifications of individual instructors. The Florida Department of Education Office of Early Learning (FDOE OEL) provided the researcher with a database that included the education level, certification credential, and certification status for each instructor in a public school voluntary prekindergarten (VPK) program in Florida. Since this database contained the professional qualifications for every person listed as a VPK

instructor, the researcher had to identify the “lead” teacher for each site for inclusion in the study population. Florida statute requires a second instructor be assigned to a class when there are more than 10 children enrolled in a VPK class. The professional qualifications for the second instructor were not included in the study; therefore, this information was eliminated from the database. The file containing the professional qualifications of VPK instructors was publicly available; however, no instructor names were reported. A class code determined by the FDOE OEL was used to identify each class at a program site.

To conduct the study, the researcher matched the school district name, Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate, and poverty level to each classroom in the instructor database provided by the Florida Department of Education Office of Early Learning. For VPK program sites with more than one class listed, the researcher applied the readiness rate and poverty level statistics to each classroom instructor in the database resulting in 1659 lines of data. The 337 cases where no poverty level information was available were eliminated from the study resulting in the professional qualifications for 1319 lead instructors being included as part of the study population data for 658 program sites. Table 4, Study Population-Public School Voluntary Prekindergarten Programs, provides a summary of the study population.

Table 4: Study Population-Public School Voluntary Prekindergarten Programs

Voluntary Prekindergarten Programs	N
School Districts	55
Public School Sites	658
Lead VPK Instructors	1319

Professional Qualifications of Population

In the population, 1319 instructors taught at 658 public school sites located in 55 school districts throughout the state of Florida. The Florida Department of Education Office of Early Learning collects data on the professional qualifications of each person employed as an instructor in the Voluntary Prekindergarten (VPK) program. The data collected includes education level, certification credential, and certification status. Education level is simply defined as the highest education degree earned. For the 1319 instructors included in the study population, 62 (4.7%) were high school graduates, 189 (14.3%) had a technical certificate, 108 (8.2%) had an Associate of Arts or Science degree, 785 (59.5%) had a Bachelor of Arts or Science degree, 171 (13%) had a Master of Arts or Science degree, and 4 (.3 %) had a doctorate. The summary data for education level of the population is presented in Table 5.

Table 5: Study Population-Lead Instructor Education Level

Lead VPK Instructor Education Level	Frequency	Percent	Cumulative Percent
High School	62	4.7	4.7
Technical Certificate	189	14.3	19.0
Associate of Arts/Science	108	8.2	27.2
Bachelor of Arts/Science	785	59.5	86.7
Master of Arts/Science	171	13.0	99.7
Doctorate	4	.3	100.0
Total	1319	100.0	

The certification credential that qualifies the teacher to fill the role of lead instructor in a voluntary prekindergarten (VPK) classroom is defined by the state into distinct categories that include a technical certificate such as the Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC) or a degree (A.A./A.S., B.A./B.S., M.A./M.S. or doctorate). Although a VPK lead instructor may have a college degree, the only way the degree can be listed as the certification credential is if it is in an approved field with the required minimum hours and experience. The approved fields include early childhood education, child development, prekindergarten or primary education, preschool education, or family and consumer science (F.S. 1002.63(4)).

Almost 42% or 552 VPK lead instructors in the study population were recorded as having a technical certificate credential that required at least a high school education and

completion of a specific number of training hours in early childhood. However, 213 instructors with a college degree were included in this category of certification credential. This most likely occurred because the degree is not in an approved field with required minimum hours and experience. The remaining 58% of instructors in the study population have a certification credential listed that requires a college degree in an approved field with required minimum hours and experience. The degrees listed range from an Associate of Arts or Science to a doctorate. Complete information related to the credentials of the VPK lead instructors in the study population is presented in Table 6, Study Population- Instructor Certification Credentials.

Table 6: Study Population-Instructor Certification Credentials

Lead VPK Instructor Credential	Frequency	Percent	Cumulative Percent
FCCPC or NECC	552	41.8	41.8
A.A. or A.S.	100	7.6	49.4
B.A. or B.S.	572	43.4	92.8
M.A. or M.S.	93	7.1	99.8
Doctorate	2	.2	100.0
Total	1319	100.0	

Certification status was indicated by a simple “yes” or “no” in the database to specify whether or not the lead instructor is certified to teach prekindergarten by the state of Florida. For the study population, 377 (29%) of the 1319 instructors hold a valid

Florida teaching certification. The area of certification is not information that is collected by the Florida Department of Education Office of Early Learning since this credential not a specific requirement to teach in a VPK program. Certification status of the study population is presented in Table 7.

Table 7: Study Population-Instructor Certification Status

Lead VPK Instructor Certification Status	Frequency	Percent
Yes	377	28.6
No	942	71.4
Total	1319	100.0

Samples

A population sample and stratified random sampling were used to determine the sample groups for each research question based on the independent variable being studied. For the portion of the study addressing the minimum education level requirements for employment as a VPK instructor by individual school districts, the total population of the 55 Florida school districts operating programs with a reported VPK Provider Kindergarten Readiness Rate for 2010-11 was used for the study.

Stratified random sampling was used to identify the sample groups for research questions two, three and four. This allowed the researcher to obtain sufficient sample points to support a separate analysis for each element under study. Lunenburg and Irby

(2008) recommend that researchers use a sample size of no fewer than 15 for factorial statistical designs; therefore, the size of the random sample from each group was kept at 50 for questions two and three. The sample size for question four was increased to 200.

The VPK instructor database provided three data points related to professional qualifications for each instructor: education level, certification credential, and certification status. In order to draw stratified random samples for the study, the information was organized into groups for each of these data points.

For question two, the population data was organized into six groups by education level: 1) high school, 2) technical certificate, 3) associate of arts/science degree, 4) bachelor of arts/science degree, 5) master or arts/science degree, and 6) doctorate. The doctorate group was excluded from the study because there were only 2 cases in this category. The education level was converted to a nominal scale for the purpose of conducting the statistical tests. A random sample of 50 cases was selected from each of the five education level groups remaining. This method provided the same number of cases for each grouping variable.

For question three, the population data was organized by certification credential into five groups according to the categories provided by the state Office of Early Learning: 1) Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC), 2) Associate of Arts/Science degree, 3) Bachelor of Arts/Science degree, 4) Master of Arts/Science degree, and 5) doctorate. The certification credential was converted to a nominal scale for the purpose of conducting the statistical tests. Prior to selecting the subgroups, those cases where the instructor's

education level exceeded the minimum required for the certification credential were removed from the population data. For example, 289 cases included an instructor with a bachelor's degree with the FCCPC or NECC credential that can be obtained with a high school education and some technical training. These cases were removed from the population before the stratified random sample was determined. In addition, the two cases with a doctorate indicated were removed from the population, reducing the number of groups for question three from five to four.

For question four, the population data for certification status was organized into two groups 1) yes or 2) no, based on whether or not the instructor is a Florida certified teacher. These groups of data were converted to a nominal scale for the purpose of conducting the statistical tests. Of 1319 cases in the data set, 583 are instructors with at least a bachelor's degree but no certification by the state of Florida. Of these, 464 have a bachelor's degree, 117 a master's degree and two with a doctorate degr. A stratified random sample was pulled from each category of yes or no in terms of whether or not the instructor is certified by the state of Florida.

Findings

The problem addressed in this study is perhaps best explained through the following question, "To what extent does the variance in the education level and professional preparation of the lead instructor in voluntary prekindergarten (VPK) classrooms impact program quality as defined by the Florida VPK Provider Kindergarten Readiness Rate?"

Research Question One

To what extent does the mean VPK Provider Kindergarten Readiness Rate for each public school district differ based on the minimum education level required for a lead instructor in the program?

H₀₁: There is no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rate for each public school district based on the minimum education level required for a lead instructor in the program.

A one-way analysis of variance (ANOVA) was conducted to evaluate the difference in the mean VPK Provider Kindergarten Readiness Rate for each public school district based on the minimum education level required for a VPK lead instructor. The dependent variable was the average readiness rate calculated for each school district in the population. The independent variable, minimum education level required for instructors, included four levels: high school diploma, technical certificate, Associate of Arts or Science degree, and Bachelor of Arts or Science degree.

In addition to the results of the Levene's homogeneity of variance test ($p = .074$), the researcher examined the residual plot, skewness and kurtosis statistics and determined the analysis of variance (ANOVA) assumptions were satisfied. The ANOVA on the population data set of 55 school districts revealed there was no statistically significant difference in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates for school districts based on the minimum education level required for

VPK lead instructors ($F_{3,51} = .106, p > .01$). Less than 1% of the variance in scores could be attributed to minimum education level required by school districts for employment as a VPK lead instructor. Table 8 displays the ANOVA results for research question one.

Table 8: ANOVA Results-Mean Readiness Rates Based on Minimum Instructor Education Level

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
MinEdLvl	24.694	3	8.231	.106	.956	.006
Error	3974.942	51	77.940			
Corrected Total	3999.636	54				

a. R Squared = .006 (Adjusted R Squared = -.052)

Since the overall F statistic ($F_{3,51} = .106, p > .01$) was not significant, follow up tests were not conducted.

Research Question Two

To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program?

H₀₂: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program.

The researcher used analysis of covariance (ANCOVA) to evaluate the difference in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate based on the education level of the lead instructor in a VPK class. The independent variable, education level of the lead instructor, included five levels: high school diploma, technical certificate, Associate of Arts or Science degree, Bachelor of Arts or Science degree and Master of Arts or Science degree. A random sample of 50 cases from each level was chosen to create equal groups. The dependent variable, the readiness rate for each VPK class in the sample, was continuous. The poverty level of each VPK provider was used as the covariate to statistically adjust the dependent variable to control for the possible effects of socio-economic status on readiness rates.

In addition to the results of the Levene's homogeneity of variance test ($p = .018$), the researcher examined the residual plot, skewness and kurtosis statistics and determined the analysis of covariance (ANCOVA) assumptions were satisfied. The interaction of the independent variable (education level) with the covariate (poverty level) was not statistically significant ($F_{2, 24} = 2.809, p > .01$). The covariate itself was significant ($p < .01$), accounting for 23% of the variance. Based on the lack of significant interaction

between the covariate and the dependent variable, the interaction was removed and the researcher continued with the ANCOVA test.

Again, the researcher examined the residual plot, skewness and kurtosis statistics and determined the ANCOVA assumptions were satisfied. Although the results of the Levene's homogeneity of variance test ($p = .007$) was slightly significant at an alpha level of .01, it was determined the analysis should continue. Lomax (2007) points out that a violation of the homogeneity of variance assumption is a major concern when there are unequal group sizes. Because equal group sizes were used, the slight significance of the Levene's homogeneity of variance test did not present a cause for concern and equal variances can be assumed.

The analysis of covariance (ANCOVA) on the sample data set of 250 voluntary prekindergarten (VPK) classes showed that accounting for poverty level, there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates based on the education level of the lead instructor ($F_{4,244} = 2.412, p > .01$). Less than 4% of the variance in scores could be attributed to the education level of the lead VPK instructor. The covariate poverty level was found to be a significant contributor to the VPK provider readiness rates ($F_{1, 244} = 65.9, p < .01$). Poverty level accounted for 21% of the variance in readiness rates. Table 9 displays the ANCOVA results for research question two.

Table 9: ANCOVA Results-Readiness Rates and Instructor Education Level

Dependent Variable: VPK Provider Kindergarten Readiness Rate

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10629.127 ^a	5	2125.825	17.830	.000	.268
PovLevel	7861.631	1	7861.631	65.937	.000	.213
EducLevel	1150.499	4	287.625	2.412	.050	.038
Error	29092.109	244	119.230			
Total	159665.000	250				
Corrected Total	39721.236	249				

a. R Squared = .268 (Adjusted R Squared = .253)

The means for each group were adjusted by the covariate as shown in Table 10. The Associate of Arts/Science group had the largest adjusted mean (M = 81.502), followed by the Technical Certificate (M= 79.584), Bachelor of Arts/Science (M=79.303) and High School (79.273) groups. The Master of Arts/Science group had the lowest adjusted mean (M = 74.198).

Table 10: Readiness Rates Means and Standard Deviations by Education Level

Education Level	Raw Mean Score	<i>SD</i>	Adjusted Mean Score	<i>SE</i>
High School	81.00	10.382	79.273 ^a	1.559
Technical Certificate	81.78	11.318	79.584 ^a	1.568
Associate of Arts/Science	81.50	10.697	81.502 ^a	1.544
Bachelor of Arts/Science	77.12	13.944	79.303 ^a	1.567
Master of Arts/Science	73.12	14.471	74.918 ^a	1.559

a. Covariates appearing in the model are evaluated at the following values: Poverty Rate = 70.41.

The difference among group means was evaluated following the adjustment by the covariate. Based on the Least Significant Difference (LSD) procedure, the adjusted means for the Master of Arts/Science group differed significantly from the Associate of Arts/Science group. The adjusted means for the remaining groups did not differ significantly. Table 11 provides a summary of the pairwise differences among the adjusted means.

Table 11: Differences in Readiness Rates by Instructor Education Level

VPK Instructor (I)	vs.	Education Level (J)	Mean Difference (I-J)	p Value	Statistical Significance
High School	vs.	Technical Certificate	-.311	.887	NO
High School	vs.	Associate of Arts/Science	-2.229	.311	NO
High School	vs.	Bachelor of Arts/Science	-.029	.990	NO
High School	vs.	Master of Arts/Science	4.355	.051	NO
Tech Certificate	vs.	Associate of Arts/Science	-1.919	.384	NO
Tech Certificate	vs.	Bachelor of Arts/Science	.281	.901	NO
Tech Certificate	vs.	Master of Arts/Science	4.666	.038	NO
A.A./A.S.	vs.	Bachelor of Arts/Science	2.200	.318	NO
A.A./A.S.	vs.	Master of Arts/Science	6.585*	.003	YES
B.A./B.S.	vs.	Master of Arts/Science	4.385	.046	NO

Research Question Three

To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program?

H₀₃: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program.

The researcher used analysis of covariance (ANCOVA) to evaluate the difference in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate based on the certification credential of the lead instructor in a VPK class. The independent variable, certification credential of the lead instructor, included four groups: Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC), Associate of Arts/Science degree, Bachelor of Arts/Science degree, and Master of Arts/Science degree. A random sample of 50 cases from each category of certification credential was chosen to create equal groups. The dependent variable, the readiness rate for each VPK class in the sample, was continuous. The poverty level of each VPK provider was used as the covariate to statistically adjust the dependent variable to control for the possible effects of socio-economic status on readiness rates.

In addition to the results of the Levene's homogeneity of variance test ($p = .298$), the researcher examined the residual plot, skewness and kurtosis statistics and determined the analysis of covariance (ANCOVA) assumptions were satisfied. The interaction of the independent variable (certification credential) with the covariate (poverty level) was not statistically significant ($F_{3, 192} = 1.831, p > .01$). Although the interaction was not

significant, the covariate itself was significant ($p < .01$), accounting for 13% of the variance. Based on the lack of significant interaction between the dependent variable and the covariate, the interaction was removed and the researcher continued with the ANCOVA test.

Before proceeding, the researcher examined the residual plot, skewness and kurtosis statistics and determined the ANCOVA assumptions were satisfied. In addition, the results of the Levene's homogeneity of variance test ($p = .340$) indicated equal variances in the data.

The analysis of covariance (ANCOVA) on the sample data set of 200 voluntary prekindergarten (VPK) classes showed that accounting for poverty level, there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates based on the certification credential of the lead instructor ($F_{3, 195} = 2.619, p > .01$). Less than 4% of the variance in scores could be attributed to the certification credential of the lead VPK instructor. The covariate poverty level was found to be a significant contributor to the VPK provider readiness rates ($F_{1, 195} = 23.64, p < .01$). Poverty level accounted for approximately 11% of the variance in readiness rates. Table 12 displays the ANCOVA results.

Table 12: ANCOVA Results-Readiness Rates and Instructor Certification Credential

Dependent Variable: VPK Provider Kindergarten Readiness Rate

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5063.445 ^a	4	1265.861	9.484	.000	.163
PovLevel	3155.725	1	3155.725	23.644	.000	.108
Credential	1048.835	3	349.612	2.619	.052	.039
Error	26026.875	195	133.471			
Total	1256642.000	200				
Corrected Total	31090.320	199				

a. R Squared = .163 (Adjusted R Squared = .146)

The means for each group were adjusted by the covariate as shown in Table 13. The Associate of Arts/Science group had the highest adjusted mean ($M = 80.73$), followed by the FCCPC or NECC ($M = 79.02$) and Bachelor of Arts/Science ($M = 78.86$) groups. The Master of Arts/Science group had the lowest adjusted mean ($M = 74.48$).

Table 13: Readiness Rates Means and Standard Deviations by Instructor Certification Credential

Certification Credential	Raw Mean Score	<i>SD</i>	Adjusted Mean Score	<i>SE</i>
FCCPC or NECC	80.70	11.283	79.021 ^a	1.670
A.A. or A.S.	81.48	10.758	80.732 ^a	1.641
B.A. or B.S.	77.24	13.230	78.885 ^a	1.668
M.A. or M.S.	73.70	13.322	74.483 ^a	1.642

a. Covariates appearing in the model are evaluated at the following values: Poverty Rate = 73.62.

The difference among group means was evaluated following the adjustment by the covariate. Based on the Least Significant Difference (LSD) procedure, the adjusted means for the Master of Arts/Science group differed significantly from the Associate of Arts/Science group. The adjusted means for the remaining groups did not differ significantly. Table 14 provides a summary of the pairwise differences among the adjusted means.

Table 14: Differences in Readiness Rates by Instructor Certification Credential

(I)	(J)	Mean Difference (I-J)	p Value	Statistical Significance
FCCPC or NECC	vs. Associate of Arts/Science	-1.711	.462	NO
FCCPC or NECC	vs. Bachelor of Arts/Science	.137	.995	NO
FCCPC or NECC	vs. Master of Arts/Science	4.538	.057	NO
A.A./A.S.	vs. Bachelor of Arts/Science	1.847	.435	NO
A.A./A.S.	vs. Master of Arts/Science	6.249	.008	YES
B.A./B.S.	vs. Master of Arts/Science	4.402	.059	NO

Research Question Four

To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program?

Ho: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program.

The researcher used analysis of covariance (ANCOVA) to evaluate the difference in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate based on the certification status of the lead instructor in a VPK class. The data on certification was dichotomized (1=Yes; 2=No) in order to conduct the analysis. A random sample of 200 cases from each group (Yes or No) was chosen to create equal groups. The certification status of each lead instructor served as the independent variable. The dependent variable, the readiness rate for each VPK class in the sample, was continuous. The poverty level of each VPK provider was used as the covariate to statistically adjust the dependent variable to control for the possible effects of socio-economic status on readiness rates.

The researcher examined the residual plot, skewness and kurtosis statistics in addition to the results of the Levene's homogeneity of variance test ($p = .585$) and determined the analysis of covariance (ANCOVA) assumptions were satisfied. The interaction of the independent variable (certification credential) with the covariate (poverty level) was not statistically significant ($F_{1, 396} = .020, p > .01$). Although the interaction was not significant, the covariate itself was significant ($p < .01$), accounting for 12% of the variance. Based on the lack of significant interaction between the

dependent variable and the covariate, the interaction was removed and the researcher continued with the ANCOVA test.

Before proceeding, the researcher examined the residual plot, skewness and kurtosis statistics and determined the ANCOVA assumptions were satisfied. In addition, the results of the Levene's homogeneity of variance test ($p = .586$) indicated equal variances in the data.

The analysis of covariance (ANCOVA) on the sample data set of 400 voluntary prekindergarten (VPK) classes showed that accounting for poverty level, there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates based on the certification status of the lead instructor ($F_{1,397} = .875, p > .01$). Less than 1% of the variance in scores could be attributed to the certification credential of the lead VPK instructor. The covariate poverty level was found to be a significant contributor to the VPK provider readiness rates ($F_{1, 397} = 56.308, p < .01$). Poverty level accounted for 12% of the variance in readiness rates. Table 15 displays the ANCOVA results.

Table 15: ANCOVA Results-Readiness Rates and Instructor Certification Status

Dependent Variable: VPK Provider Kindergarten Readiness Rate

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9549.415 ^a	2	4774.707	28.293	.000	.125
PovLevel	9502.492	1	9502.492	56.308	.000	.124
Certified	147.708	1	147.708	.875	.350	.002
Error	66997.583	397	168.760			
Total	2440607.000	400				
Corrected Total	76546.998	399				

Note. a. R Squared = .125 (Adjusted R Squared = .120)

The means for each group were adjusted by the covariate as shown in Table 16. The certification status “Yes” group had the highest adjusted mean ($M = 77.50$). The certification status “No” group had a lower adjusted mean ($M = 76.26$).

Table 16: Readiness Rates Means and Standard Deviations by Instructor Certification Status

Certification Status	Raw Mean Score	SD	Adjusted Mean Score	SE
Yes	76.54	13.605	77.497 ^a	.927
No	77.22	14.119	76.258	.927

a. Covariates appearing in the model are evaluated at the following values: Poverty Rate = 75.25.

The difference between group means was evaluated following the adjustment by the covariate. Based on the Least Significant Difference (LSD) procedure, there was no statistically significant difference between the two groups. Table 17 provides a summary of the pairwise differences among the adjusted means.

Table 17: Differences in Readiness Rates by Instructor Certification Status

Instructor Certification Status		Mean Difference	p Value	Statistical Significance
(I)	(J)	(I-J)		
Certified-Yes	vs. Certified- NO	1.239	.350	NO

Summary

Descriptive statistics for the study population and the sample used for each question were discussed within the context of Chapter 4 along with interpretation of the statistical tests that were conducted for the study. According to the descriptive statistics reported, 72.4 % of the instructors in the population sample had a bachelor's degree or higher. The remaining instructors (27.6%) had a high school diploma (5.1%), technical certificate (14.3 %), or an associate's degree (8.2%) indicated as their highest level of education. The descriptive data revealed almost an even split between the number of VPK lead instructors in the study population that had a bachelor's degree or higher (50.5%) as the certification credential that qualifies them to teach in the program and those with a technical certificate or associate's degree (49.5%) as the recorded credential.

The number of VPK lead instructors in the population that had a valid Florida teaching certificate was 377 or 28.6% of the study population.

Analysis of variance (ANOVA) and analysis of covariance (ANCOVA) statistical tests were conducted, as appropriate, for each of the research questions. The intention of research question one was to examine to what extent a difference exists in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate for school districts based on the minimum education level required for a VPK lead instructor. The results of the analysis using ANOVA indicated there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates for school districts based on the minimum education level required for VPK lead instructors

Research question two considered to what extent a difference in the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates for programs in public schools differed based on the education level of the lead instructor while controlling for the poverty level of the program. An analysis of covariance (ANCOVA) test was used and revealed that accounting for poverty level, there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates based on the education level of the lead instructor.

Research question three required analyzing the data to determine to what extent the mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate differed based on the reported certification credential of the lead instructor. Again, analysis of covariance (ANCOVA) was used with poverty level as the covariate and the researcher found there was no statistically significant difference in the mean VPK

Provider Kindergarten Readiness Rates based on the certification credential of the lead instructor

Examination of research question four required using analysis of covariance (ANCOVA) with poverty level as the covariate. The question under study was whether a significant difference in mean Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates exist based on whether or not the lead instructor has a valid Florida teaching certificate. The analysis showed there was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rates based on the certification status of the lead instructor

Chapter 5 provides a discussion of findings and recommendations, offering an opportunity to expand upon the results communicated in Chapter 4.

CHAPTER FIVE: FINDINGS AND RECOMMENDATIONS

Florida statutory language recognizes the link between having well trained teachers in preschool classrooms and program quality (Voluntary Prekindergarten Education Program, 2011). The purpose of this study was to investigate the impact of an instructor's education level and credentials on program quality as indicated by the Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates and add to the body of knowledge on promoting quality prekindergarten programs. The desired outcome of the study was to provide information for VPK stakeholders, including parents, teachers, administrators, and lawmakers regarding the role of teacher education level and credentials in providing high-quality preschool experiences for Florida's children.

This study addressed the problem of insufficient information concerning the impact of variability in requirements and credentials for Florida Voluntary Prekindergarten (VPK) teachers statewide on VPK program quality. In contrast to the minimum credentials for VPK instructors required by state statute, some public school VPK providers require more advanced credentials for instructors such as a bachelor's degree in early childhood and/or the appropriate state teacher certification. This study examined the variance in the professional credentials of VPK lead instructors in Florida school districts and whether or not this variability makes a significant difference in program quality as measured by VPK Provider Kindergarten Readiness Rates.

The researcher isolated three independent variables, education level, certification credential and certification status, to determine if a statistically significant difference in VPK Kindergarten Readiness Rates was present based on the professional qualifications of the lead instructor. Early childhood education researchers (Ackerman, Barnett, Hawkinson, Brown, & McGonigle, 2009) recognize the impact socio-economic status can have on student achievement; therefore, the poverty level, or percentage of students participating in the federal free or reduced price lunch program was used as a covariate in the study.

This study played a role in filling a gap in the research related specifically to the impact of instructor qualifications on preschool program quality as measured by the Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates. Based on an initial assessment of children entering kindergarten, VPK Provider Kindergarten Readiness Rates provide an indication of how well a VPK program prepared students for kindergarten. The readiness rates are traced back to the site where the student attended VPK, theoretically providing an indication of how well the students were instructed in the VPK standards.

The research was conducted by examining the educational level and professional credentials of 1319 lead voluntary prekindergarten (VPK) instructors at 658 public school sites in 55 Florida school districts. A population sample and stratified random sampling were used to determine the sample groups for each research question based on the independent variable being studied. This study included four research questions:

1. To what extent does the mean VPK Provider Kindergarten Readiness Rate for each public school district differ based on the minimum education level required for a lead instructor in the program?

2. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program?

3. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program?

4. To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program?

Summary of Results

The findings of this study centered on whether the researcher rejected or failed to reject the null hypothesis for each research question based on whether or not the professional credentials of the lead instructor made a difference in the kindergarten readiness rates for Florida Voluntary Prekindergarten (VPK) program providers. The indicators of effect size were reported by assessing statistical significance, practical significance and a comparison of means for each pairwise grouping for educational level, certification credential and certification status. Statistical significance was measured by p value and practical significance was measured by partial η^2 . For the purposes of this study, practical effect sizes (partial η^2) were defined using criteria defined by Cohen: small=.02; medium=.05; and large=.08 (Lomax, 2004; Pedhazur, & Pedhazur-Schmelkin, 1991).

Research Question One

To what extent does the mean VPK Provider Kindergarten Readiness Rate for each public school district differ based on the minimum education level required for a lead instructor in the program?

Null Hypothesis #1 (H_{01}) – Fail to Reject: There is no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rate for each

public school district based on the minimum education level required for a lead instructor in the program.

The findings resulting from research question one support the hypothesis that there is no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rate for each public school district based on the minimum education level required for a lead instructor in the program. An analysis of variance (ANOVA) test was run using the population data set of 55 school districts. There was no statistically significant difference in the mean VPK Provider Kindergarten Readiness Rate for each public school district based on the minimum education level required for employment as a lead instructor in the program. The level of significance for the procedure was .956 which is greater than the alpha level of .01; therefore, the researcher failed to reject the null hypothesis. There was not sufficient evidence to suggest a meaningful difference in the mean scores. Less than 1% of the variance in scores could be attributed to the minimum education level required by school districts for employment as a VPK lead instructor. Using Cohen's subjective standards (as cited by Lomax, 2004; Pedhazur, & Pedhazur-Schmelkin, 1991), this result is considered to be a very small effect size.

Research Question Two

To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree,

master's degree, or doctorate) when controlling for the poverty level of the program?

Null Hypothesis #2 (H_{02}) – Fail to Reject: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the education level of the lead instructor (high school, technical school, associate's degree, bachelor's degree, master's degree, or doctorate) when controlling for the poverty level of the program.

The findings resulting from research question two support the hypothesis that there is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the education level of the lead instructor when controlling for the poverty level of the program. There was no interaction effect found between instructor education level and poverty level for the readiness rate data so the analysis of covariance (ANCOVA) test was appropriate for this research question. The ANCOVA was run on the five randomly selected groups of 50 representing the varying education levels of VPK lead instructors.

The level of significance for the procedure was .050 which is greater than the alpha level of .01; therefore, the researcher failed to reject the null hypothesis. There was not sufficient evidence to suggest a meaningful difference in the mean scores. Less than 4% of the variance in scores could be attributed to the education level of the lead VPK

instructor. These results indicate a small to medium effect size according to Cohen's standards (as cited by Lomax, 2004; Pedhazur, & Pedhazur-Schmelkin, 1991).

Examination of the education level separately for the five randomly selected groups of 50 revealed the Associate of Arts/Science group had the largest adjusted mean (M = 81.502), followed by the Technical Certificate (M= 79.584), Bachelor of Arts/Science (M=79.303) and High School (79.273) groups. The Master of Arts/Science group had the lowest adjusted mean (M = 74.198). The difference among group means was evaluated following adjustment by the covariate. The Master of Arts/Science group differed significantly from the Associate of Arts/Science group. The adjusted means for the remaining groups did not differ significantly.

Research Question Three

To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or B.S. degree, M.A. or M.S. or doctorate) when controlling for the poverty level of the program?

Null Hypothesis #3 (H₀₃) – Fail to Reject: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the certification credential of the lead instructor (Florida Child Care Professional Credential or National Early Childhood Certificate, A.A. or A.S. degree, B.A. or

B.S. degree, M.A. or M.S. degree or doctorate) when controlling for the poverty level of the program.

The findings resulting from research question three support the hypothesis that there is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on the certification credential of the lead instructor when controlling for the poverty level of the program. There was no interaction effect found between instructor certification credential and poverty level for the readiness rate data so the analysis of covariance (ANCOVA) test was appropriate for this research question. The ANCOVA was run on the four randomly selected groups of 50 representing the varying certification credentials of VPK lead instructors.

The level of significance for the procedure was .052 which is greater than the alpha level of .01; therefore, the researcher failed to reject the null hypothesis. There was not sufficient evidence to suggest a meaningful difference in the mean scores. Less than 4% of the variance in scores could be attributed to the certification credential of the lead VPK instructor. Cohen's subjective standards (as cited by Lomax, 2004; Pedhazur, & Pedhazur-Schmelkin, 1991) indicate these results fall in the range of a small to medium effect size.

Examination of the certification credential separately for the four randomly selected groups of 50 revealed the Associate of Arts/Science group had the highest adjusted mean ($M = 80.73$), followed by the FCCP or NECC ($M = 79.02$) and Bachelor of Arts/Science ($M = 78.86$) groups. The Master of Arts/Science group had the lowest

adjusted mean ($M = 74.48$). The difference among group means was evaluated following adjustment by the covariate. The adjusted means for the Master of Arts/Science group differed significantly from the Associate of Arts/Science group. The adjusted means for the remaining groups did not differ significantly.

Research Question Four

To what extent does program quality, as measured by the VPK Provider Kindergarten Readiness Rate, differ based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program?

Null Hypothesis #4 (H_{04}) – Fail to Reject: There is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program.

The findings resulting from research question four support the hypothesis that there is no statistically significant difference in the VPK Provider Kindergarten Readiness Rate based on whether or not the lead instructor is a certified teacher when controlling for the poverty level of the program. There was no interaction effect found between instructor certification status and poverty level for the readiness rate data so the analysis of covariance (ANCOVA) test was appropriate for this research question. The

ANCOVA was run on the two randomly selected groups of 200 representing the certification status (yes or no) of VPK lead instructors.

The level of significance for the procedure was .350 which is greater than the alpha level of .01; therefore, the researcher failed to reject the null hypothesis. There was not sufficient evidence to suggest a meaningful difference in the mean scores. Less than 1% of the variance in scores could be attributed to whether or not the lead instructor is a certified teacher. These results indicate a very small effect size according to Cohen's standards (as cited by Lomax, 2004; Pedhazur, & Pedhazur-Schmelkin, 1991).

Examination of the certification status separately for the two randomly selected groups of 200 revealed the certification status "Yes" group had the highest adjusted mean ($M = 77.50$). The certification status "No" group had a lower adjusted mean ($M = 76.26$). Although there was a difference, it was not significant.

Discussion of the Findings

The findings of this study were consistent with the reviewed research on the possible link between prekindergarten teacher education level and preschool program quality (Florida Legislature OPPAGA, 2012; Ganey, 2010; Pelletier, 2009; Vu, Jeon, & Howes, 2008). Statistical analysis conducted using randomly selected groups based on the professional qualifications of the VPK instructor revealed no statistically significant difference in mean VPK Provider Readiness Rates at the .01 significance level. Practical significance was consistently small to slightly medium, with effect sizes, measured by partial eta squared, ranging from 1% to 4%. The mean VPK Provider Kindergarten

Readiness Rate for lead instructors with an Associate of Arts or Science degree was consistently higher than those for other groups, followed by the Technical Certificate group. The group of instructors with a Masters of Arts or Science degree consistently had the lowest mean VPK Provider Kindergarten Readiness Rate and differed significantly from the Associate of Arts/Science group for education level and certification credential.

While the current study under discussion supports the findings of others, there is research that disputes these results. Findings from research conducted in New Jersey and Oklahoma support requiring a bachelor's degree for prekindergarten teachers. In their study of the New Jersey Abbott preschool programs, Lauter and Rice (2008) found positive outcomes for the Abbott preschool children as they progressed through kindergarten. Teachers in the Abbott preschools were required by a court decision to obtain a bachelor's degree and specialized certification to remain employed in the program. Gormley (2007) found that students transitioning to kindergarten in Tulsa who participated in the state's universal prekindergarten (UPK) program demonstrated higher achievement in reading and math as compared to non-participants. In Oklahoma, UPK co-exists in the public school system and all prekindergarten teachers are required to have a bachelor's degree.

Although the importance of providing children with a quality early childhood education appears to be gaining national recognition, Barnett et al., (2011) believe less progress has been made in improving the qualifications of the lead instructors and assistants working in state-funded prekindergarten programs. Most children attending

prekindergarten in the United States are enrolled in programs that do not require the teacher to have a bachelor's degree. This study found that while the majority of voluntary prekindergarten (VPK) lead instructors in Florida working in a public school setting do have a bachelor's degree, the majority do not have a Florida professional teaching certificate. Many of the VPK instructors with a bachelor's degree are not able to use this as the certification credential to teach VPK perhaps because the degree is in a field other than early childhood or child development.

Vu, Jeon, and Howes (2008) concluded that having instructors with a bachelor's degree as a minimum requirement makes more of a difference in program quality in nonpublic settings such as non-profit and private school settings. These researchers assert that in order to fully measure the impact of the degree on student outcomes, one must "look more broadly at the context within which the teaching takes place" (p. 503). The premise is that teachers working preschool programs sponsored by school districts benefit from the support and accountability inherent in the system. The close supervision and monitoring of Florida voluntary prekindergarten (VPK) programs located in public schools may have had an impact on the findings of this study. VPK instructors in public school settings benefit from the support of well-educated colleagues and supervisors who hold professional certification in a variety of fields including early childhood, elementary education, guidance, and educational leadership.

The findings of the current research study defy logic; therefore, one must consider whether the evaluation instrument used was valid for the purpose of studying the impact of the education level of voluntary prekindergarten (VPK) instructors on program quality.

The lack of statistically significant results among groups most likely occurred because the instrumentation, the Florida Kindergarten Readiness Screener (FLKRS), used to calculate VPK Provider Kindergarten Readiness Rates, does not adequately measure program quality. Pelletier (2009) wrote of a similar concern when conducting research using Florida VPK program kindergarten readiness rate data. The FLKRS does not reflect how an instructor with a bachelor's degree is able to go above and beyond merely teaching students to master simple skills.

The conceptual framework for this study was based on the premise that teaching is a craft requiring specialized training and knowledge. The pedagogical content knowledge of a college educated instructor provides the background and skills necessary to fully understand formal educational research, materials and structures that can positively influence classroom practice (Shulman, 1987). The Florida Kindergarten Readiness Screener (FLKRS) does not provide assessment information related to the actual classroom practices that are present when an instructor has undergone a college level teacher preparation program. In the course of conducting research for this study, this researcher found that the Florida Voluntary Prekindergarten (VPK) program is highly scripted through required adherence to standards and training, especially for instructors without a college degree. VPK instructors are well informed of what skills FLKRS will measure when the students enter kindergarten. While this awareness and training in appropriate instructional strategies aimed at teaching mastery of the standards is helpful, it is not a substitute for the expanded knowledge and experience gained through a college degree program.

Researchers who have found a link between the professional preparation of prekindergarten teachers and program quality have used or reported measures that are directly tied to classroom environment rating scales or individual student performance rather than an overall rating applied to several classes at a program site (Lauter & Rice, 2008; Vu, Jeon, & Howes, 2008; Whitebook, 2003). This researcher surmised that the concepts and skills measured by the screening test used to calculate readiness rates are simplistic, requiring only rote memorization to demonstrate mastery. Furthermore, the assessed skills need to occur only once for the examiner to record a favorable response for the student. The measured concepts do not capture the skills, such as oral language usage and development that are possibly influenced more by having a college educated, certified instructor.

Studies that employ a variety of measures to assess a range of skills or conditions such the receptive vocabulary skills of students; the quality of teacher-child interactions; levels of student engagement; and classroom environment are more useful in determining the impact of the professional preparation of the teacher on program quality. By contrast, the results of this study were limited by the instrument used to evaluate program quality and perhaps did not accurately reflect actual differences in instructional effectiveness that may exist based on the education level and professional credentials of the prekindergarten teacher.

The lack of statistically significant differences in VPK Provider Kindergarten Readiness Rates based on the education level of the instructor is perhaps attributed to the network of state-sponsored online programs designed to provide comprehensive training

for voluntary prekindergarten (VPK) instructors. These training programs, provided by the Florida Department of Education, Office of Early Learning, and the Florida Department of Children and Families, are designed to make sure VPK instructors are schooled in the instructional strategies that foster student mastery of the skills measured by the Florida Kindergarten Readiness Screener (FLKRS) so that the majority of programs attain an acceptable VPK Provider Kindergarten Readiness Rate. Program administrators are committed to making sure instructors are prepared to teach the standards due to the adverse actions required if a program is consistently labeled as low performing based on testing results; however, FLKRS is not an adequate measure of program quality, especially when evaluating the impact of an individual teacher's credentials on student outcomes.

Approximately 42% of voluntary prekindergarten (VPK) instructors in public school programs are qualified to teach based on having a Florida Child Care Professional Credential (FCCPC) or National Early Childhood Certificate (NECC). The requirements for these credentials include 120 hours of instruction in early childhood and 480 contact hours with students. The Child Development Associate credential is often used to gain the NECC credential necessary to teach VPK when a person does not have a college degree. In addition to the FCCPC or NECC credential, VPK instructors without a college degree are required to complete the state Emergent Literacy Course for VPK Instructors that is designed to train participants on how to provide instruction in the state standards for 4-year-old children.

Although many instructors in the study population are credentialed to teach voluntary prekindergarten (VPK) due to completing a training program that mirrors a teacher preparation program, these programs represent the bare minimum for teacher education as compared to a high-quality, collegiate level course of study. Such programs lack the capacity to provide individuals with the extensive knowledge of child development and learning strategies necessary to engage students in rich language experiences while providing an optimal learning environment. A factor that may have influenced the study results is the majority of VPK instructors with the FCCPC or NECC listed as their credential also had a bachelor's degree or higher listed as their highest level of education. This combination of credentials implies these instructors had the benefit of a college education coupled with the specialized training of the credentialing programs, thus producing better outcomes than a FCCPC or NECC certificate alone.

The research design for this and other studies of the Florida Voluntary Prekindergarten (VPK) program included using the VPK Provider Kindergarten Readiness Rates as the independent variable (Ganey, 2010; Pelletier, 2009). A limitation of using this particular measure was the readiness rate is applied across all classes at a VPK provider site, with no distinction among the groups making it difficult to measure the impact of each individual instructor. A review of the data for this research revealed that many program sites have a mix of instructors with various education levels and credentials. The consistent readiness rate across programs, regardless of the professional qualifications of the instructors is perhaps attributed to the application of the one score to all classrooms. Vu, Jeon, and Howes (2008) speculated that prekindergarten teachers

located in public schools benefit from the professional development and support of well-educated colleagues and administrators, thus positively impacting instructional outcomes. The state of Florida recognizes this potential as well as evidenced by the requirement that all VPK program sites (public and nonpublic) must have at least one instructor on site with a bachelor's degree.

The study was delimited by defining program quality with a single indicator, the Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rate and did not address other measures of program quality such as environmental rating scales or individual student achievement. Also, the scope of research was limited to VPK programs operated in public schools in the state of Florida. Although it is not possible to directly generalize the results of this study to other settings, the information gained extends the research and is useful in determining appropriate implications for policy and practice in early childhood education.

Implications for Policy and Practice

The findings of this study have implications for various stakeholders interested in providing high quality prekindergarten programs for the nation's youngest citizens. This research provides information essential for guiding the practices of educators and the decision-making of policymakers involved in establishing the protocol and guidelines for state-funded preschool programs. For education practitioners and policymakers, this study offers insight into the importance of standards based instruction. All voluntary prekindergarten (VPK) teachers are required to have training in and document the

teaching of the *Florida Early Learning and Developmental Standards for 4-year-olds*.

The findings of this study support the idea that standards based instruction is effective for assuring consistent student achievement across programs. Based on this information, professional practices that promote the use of standards to help determine instructional objectives should be continued for those employed as teachers in prekindergarten programs.

The requirement of a bachelor's degree for all voluntary prekindergarten (VPK) instructors is defined in Florida law as an *aspirational goal* for the 2013-14 school year (F.S. 1002.65 (2) (a) 2). This goal is supported by the recommendations of leading early childhood organizations and researchers including Barnett (2004, 2008, & 2011), Bowman, (2011), Committee on Early Childhood Pedagogy of the National Research Council (Bowman et al., 2001), National Association for the Education of Young Children, (2011), National Institute for Early Education Research (Barnett et al., 2011), and Trust for Early Education (Whitebook, 2003). The Florida legislature's aspirational goal also aligns with the changing certification requirements for Head Start. By September, 2013, at least 50% of Head Start teachers must have a bachelor's or advanced degree in early childhood or a degree in any subject with appropriate coursework in early childhood (Early Childhood Learning & Knowledge Center, 2011).

The compilation of evidence presented in this study indicates that the state of Florida should continue to pursue the aspirational goal of requiring all VPK instructors to have a bachelor's degree. A college education with specific program certification ensures that the teacher has both the cognitive skills and specialized training required to

engage in the teaching pedagogy purported by Shulman (1987) as being necessary for providing a classroom environment that supports student achievement. Whitehood (2003) asserts, “Classrooms where the teachers have at least a bachelor’s degree are more likely to be of higher quality—as in richer language environments, richer literacy environments, and better teacher-child interactions” (p.1).

Pianta (2011) cautioned that a degree alone does not guarantee that an instructor has the ability necessary to work with young children; teachers must be supported with substantial professional development to fully understand the instructional practices necessary for an early childhood classroom. The provision of a continuous improvement process for prekindergarten teachers beyond a college degree that includes supervision and instructional coaching will further extend their effectiveness.

Early et al., (2007) assert that once employed by a public school, the best teachers are often assigned to the grade levels where high-stakes testing occurs, leaving fewer highly skilled teachers available to teach prekindergarten. School administrators and lawmakers must make hiring qualified, well-educated instructors for prekindergarten programs a priority. Such a practice will allow schools to capitalize on the positive outcomes for students attending a high quality prekindergarten program. In his review of literature, Barnett (2011) asserts that public school programs employing preschool teachers with bachelor’s degrees and paying them public school salaries are the ones “who have consistently produced strong gains for children” (p. 53).

Recommendations for Future Research

The purpose of this study was to investigate the impact of an instructor's education level and credentials on program quality as indicated by the Florida Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates and add to the body of knowledge on promoting quality prekindergarten programs. The desired outcome of the study was to provide information for VPK stakeholders, including parents, teachers, administrators, and lawmakers regarding the role of teacher education level and credentials in providing high-quality preschool experiences for Florida's children.

Four research questions were tested utilizing existing data that included the education level, certification credential, and certification status of the lead instructor for each public school voluntary prekindergarten program in the state. The resulting research information, while useful, had some limitations. One such limitation was the restriction of the research to public schools offering VPK programs although the majority of programs in the state are provided in nonpublic school settings. The recommendations for future research contained in this discussion should include data from all sites, public and nonpublic.

Another limitation of the study was an inability to differentiate between the type of bachelor's or advanced degree held by the instructors in the population. A true comparison would be to consider differences in VPK Provider Kindergarten Readiness Rates based on the type of bachelor's or advanced degree. In the study population, 960 instructors were identified as having a college degree, yet only 667 were able to use the degree as the credential enabling them to teach VPK because it was in an approved field.

It is highly probably that a lack of extensive knowledge of child development and appropriate early childhood classroom practices for those without a degree in early childhood or child development impacts teacher effectiveness in working with students. The early childhood education community would benefit from future research based on the type of bachelor's or advanced degree held by the instructor and the impact on student outcomes. Furthermore, a study to assess whether or not VPK instructors would continue to choose to teach prekindergarten if given the option of teaching in other grade levels. The researcher surmised that perhaps some less effective prekindergarten teachers are working in the field because it is the only teaching position available to them.

A limitation of the study was the use of Voluntary Prekindergarten (VPK) Provider Kindergarten Readiness Rates as an indicator of program quality. The readiness rate for each VPK provider is calculated using student performance results from the Florida Kindergarten Readiness Screener (FLKRS). The FLKRS is a screening instrument that measures very basic skills present at a specific point in time. The test does not capture other achievement measures such as vocabulary acquisition and usage that would perhaps be impacted more by the education level and professional credentials of the instructor. Given the importance of measuring literacy acquisition, it is recommended that the current study be replicated using a better indicator of program quality such as the Florida VPK assessment tool or other valid achievement measure. The VPK assessment tool is designed to be given several times during the prekindergarten year providing the opportunity to measure student achievement over the course of the VPK program. Data from this instrument would perhaps provide the

opportunity for an improved study of whether or not there is a statistically significant difference in VPK program quality based on the education and professional qualifications of the lead instructor.

By Florida Statute, both public school districts and private prekindergarten providers may offer Voluntary Prekindergarten (VPK) if they adhere to all of the requirements outlined in the law. A study to determine whether or not there is a difference in student achievement on the VPK assessment tool between public and private VPK providers would add to the body of research on the difference in achievement levels of students in public versus nonpublic school settings. Typically, public school districts have more resources for staff development available to instructors, so it would be interesting to see if there is a variance in readiness rates between public and private providers, adding the professional qualifications of the VPK instructor as an additional variable.

This study was delimited to considering program quality based on the readiness scores of kindergarten students just months following the completion of the voluntary prekindergarten (VPK) program. A more useful approach to the research would be a longitudinal study, tracking how students who attended VPK perform over time. The first groups of students to participate in Florida's voluntary prekindergarten (VPK) program are now enrolled in upper elementary grades. Research on the later school achievement of students participating in VPK as compared to those who did not attend a state funded preschool program in Florida would provide information on the effectiveness of a large-scale preschool program. A study of this nature that includes the

instructors' professional credentials as a variable would provide insight on how the qualifications of the teacher may impact VPK program quality as measured by student achievement over time.

The researcher asserted that the lack of statistically significant differences in VPK Provider Kindergarten Readiness Rates based on the education level and professional qualifications of the teacher is possibly attributed to the amount of required training for VPK instructors without a college education. Future research that replicates this study in a state where there is not a concentrated effort to provide teachers with training to the extent the state of Florida has for VPK instructors might reveal different findings and significant differences in program quality based on the professional qualifications of the teacher.

Many voluntary prekindergarten (VPK) classes have a teaching assistant also working with students. A review of the literature revealed little research on the impact of the second adult in the classroom. The state of Oklahoma requires teacher assistants in state-funded prekindergarten programs to meet the highly qualified requirements of No Child Left Behind, indicating a belief that the person in the role of assistant may have an impact on student achievement. Researching the impact on student achievement of having a highly qualified teacher assistant would provide useful information for lawmakers and program administrators.

Conclusion

In November, 2011, the United States Education Department (USED) announced the creation of an Office of Early Learning within the Office of Elementary and Secondary Education (“Education Department to Launch”, 2011). The creation of this division to oversee early childhood programs marks the return of early education to USED. Since 1943, early childhood education programs have been associated with other federal departments such as the Department of Health and Human Services which administers Head Start. As explained in a December, 2011 article in the *No Child Left Behind Compliance Insider*, the federal Office of Early Learning would function as “a central resource to ensure that support for high-quality early learning and development programs is coordinated within the department and across federal agencies, in addition to managing outreach to the early learning community” (p. 5). The establishment of a federal Office of Early Learning is an example of how early childhood education research has become important at all levels of government and is recognized as a benefit to communities nationwide.

The work of earlier researchers investigating the topic of preschool instructor qualifications and program quality was expanded as a result of the findings in this study. Many of the studies noted in this dissertation reported inconsistent findings (Early et al., 2007; LoCasle et al., 2007; Pianta, Barnett, Burchinal, & Thornburg, 2009). By contrast, this study revealed consistent results for the statistical tests ran to investigate the research questions. No statistically significant differences were found in the VPK Provider

Kindergarten Readiness Rates based on the education level, certification credential and certification status of the lead instructor.

The findings of this study should not be misinterpreted to mean that college degree and teacher preparation programs are not essential in preparing qualified prekindergarten instructors. The results were based on the Florida Department of Education's interpretation of school readiness. The research was short sighted in that it did not address additional variables that impact school readiness such as the moment to moment interactions in the classroom that make a difference in children's learning. A true evaluation of how the education level and professional preparation of teachers impact student readiness for kindergarten would include assessments of the classroom environment that extend far beyond the rote teaching that traditional tests measure. The researcher surmised that the findings in this study were inhibited by the lack of an effective way to measure program quality. Even with this limitation, the results of this study contributed to the incomplete research on state-funded prekindergarten programs.

In Gillman's 2005 report from the National Prekindergarten Study, it was noted that the information gathered from the state of Florida was limited to certain programs and did not provide comprehensive data due to issues with collecting the information. Now that the Voluntary Prekindergarten (VPK) program has been in operation for more than six years, the state has a uniform way of collecting data on teacher credentials making it possible to thoroughly study the impact of an instructor's professional qualifications on VPK program quality. Research of this type is important for

lawmakers as they decide whether or not to continue funding public prekindergarten programs at a level that allows providers to hire educated and well trained teachers.

This study on the impact of the education level of teachers working in the Florida voluntary prekindergarten (VPK) program extended the research on state-funded preschool programs. Additional studies related to whether or not the professional preparation of the instructor has an impact on program quality are needed to confirm for lawmakers that increasing requirements for prekindergarten instructors is prudent given the limited resources and other challenges associated with elevating the education level and professional credentials of early childhood teachers across the nation.

This research should not be used as an attack on the quality of teacher preparation programs at the college level. University programs may want to review program design to include specialized content that can be better targeted on student outcomes rather than the practice of providing an integrated program. Most often, programs for early childhood education majors have a generalized approach to preparing students for working with children in prekindergarten through third grade, rather than an emphasis on the specific needs of learners at various stages within this age group. The early childhood education internship experiences are often limited to the early elementary grades (1-3), with few interns spending time in prekindergarten and kindergarten classrooms. By contrast, technical certificate and associate degree programs for early childhood education provide participants with a precise focus on the critical elements necessary for working with preschool age children, including a minimum number of hours working in a prekindergarten setting.

This study provided a means to investigate the factors that impact prekindergarten program quality, with a special emphasis on the professional preparation and credentials of the lead instructor. The researcher stressed that program excellence is not defined solely by student mastery of rote skills, but by the quality of the classroom environment and interactions between children and the teacher. The way to impact preschool classroom quality is through education and training for teachers; therefore, the vision of improving the qualifications of the prekindergarten workforce to include a bachelor's degree as a minimum requirement must persist, supported by continued research and adequate funding.

APPENDIX: IRB APPROVAL LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

From : **UCF Institutional Review Board #1
FWA00000351, IRB00001138**

To : **Teresa A. Wright**

Date : **April 12, 2012**

Dear Researcher:

On 4/12/2012, the IRB determined that the following proposed activity is not human research as defined by DHHS regulations at 45 CFR 46 or FDA regulations at 21 CFR 50/56:

Type of Review: Not Human Research Determination
Project Title: Impact of the Education Level of Voluntary
Prekindergarten Teachers upon Kindergarten Student
Readiness Rates
Investigator: Teresa A Wright
IRB ID: SBE-12-08335
Funding Agency:
Grant Title:
Research ID: N/A

University of Central Florida IRB review and approval is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are to be made and there are questions about whether these activities are research involving human subjects, please contact the IRB office to discuss the proposed changes.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 04/12/2012 10:15:02 AM EDT

A handwritten signature in black ink that reads "Joanne Muratori".

IRB Coordinator

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