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SUPPORTING PREKINDERGARTEN TEACHERS
THROUGH APPROPRIATE PROFESSIONAL DEVELOPMENT PRACTICES

by

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A dissertation in practice submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
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ABSTRACT

The problem of practice that this dissertation in practice addresses is the creation of a professional development model designed to assist voluntary prekindergarten (VPK) teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds; specifically the mathematical thinking benchmark. Because the standards serve as a planning guide to assist teachers and directors of VPK children in the attainment of skills required by the end of their prekindergarten school year, it is important that those utilizing the standards have a concrete understanding of their components and how to use them as the foundation for all lesson planning.

The pilot study included informal interviews with both VPK teachers and directors concerning their understanding of the 2011 Early Learning and Developmental Standards for Four-Year-Olds and the assistance they received with the implementation of the standards into their daily lesson plans. An additional survey was administered electronically to a target group of VPK teachers and directors concerning their personal beliefs about preschoolers and mathematics, their confidence in helping preschoolers learn mathematical concepts, and their confidence in their personal mathematical abilities.

This dissertation in practice provides a professional development framework, that demonstrates how to facilitate a comprehensive professional development program that addresses all of the essential components including pre-assessment, the use of appropriate practices when working with adult learners, providing coaching and technical assistance

to the practitioners, and using communities of practice (CoP) to provide ongoing support for teachers and directors of VPK children. Utilizing a combination of these strategies can help to ensure that those working with this targeted group have an inclusive understanding of the standards as well as a support system to effectively provide VPK students with a developmentally appropriate education.

This work is dedicated to my friends and family:

to my mom, I thank you for instilling in me a strong work ethic;

to my dad, I thank you for reinforcing to me the importance of an education
(I know you are smiling down on me from Heaven);

to my sisters, I thank you for your sincere and insightful words of encouragement
that kept me pressing forward;

to my dear friends Carol, Sherrie, Jennifer and Lenora, who have been the best
cheerleaders
and have assisted me too many times to mention;

and to my husband who tirelessly supports me through love, praise, and encouragement.

I love you all

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TABLE OF CONTENTS

LIST OF FIGURES	x
LIST OF TABLES	xi
CHAPTER 1 THE PROBLEM OF PRACTICE	1
Introduction.....	1
Problem Statement	2
Background of the Problem	2
Key Stakeholders	6
Context.....	8
Relationship to Other Organizational Problems	8
Significance of the Problem.....	10
Research Question	12
Organizational Context	13
History and Conceptualization.....	18
National Context	18
State Context.....	19
Local Context.....	21
Data Collection and Analysis.....	40
Literature.....	41
The Proposed Framework.....	42
Goals/Expected Outcomes	43
Learning Objectives for Teachers	45
Key Elements of the Design	46
Design Format.....	52
Significance of the Program Design	57
Expertise Required to Achieve Outcomes	59
Timeline	59
Documentation of Process	61
Plan for Collaboration.....	61
CHAPTER 2 DEFINITION OF PROBLEM.....	63
Introduction.....	63
Significance.....	64
Resolving the Problem of Practice.....	67
The Survey	70
Analysis of Survey Data	71
Teacher Beliefs about Preschoolers and Mathematics.....	71
Teacher Confidence in Helping Preschoolers Learn Mathematics.....	73
Key Findings.....	84
CHAPTER 3 THE FRAMEWORK	88
The Problem of Practice.....	88

Significance.....	88
Resolving the Problem of Practice.....	90
Goals of the Program:	93
Expected Outcomes	94
Key Elements of the Design:	95
Sustainability.....	101
Needs Assessment.....	101
Elements of the Design	102
Expertise Required to Achieve the Outcomes	106
Timeline	107
Documentation of Process	108
Plan for Collaboration.....	109
Methods for Determining Attainment of Goals	110
Visual of Framework	110
Pre-Assessment	111
Trainings	112
Mentoring and Coaching.....	112
Communities of Practice (CoP)	112
Further Learning	113
CHAPTER 4 DISCUSSION AND SUMMARY	114
Introduction.....	114
Goals of the Framework.....	115
Target Audience.....	116
Anticipated Changes	118
Evidence of Change	120
Expected Results.....	123
Modifications	124
Anticipated Impact.....	125
Limitations	125
CHAPTER 5 IMPLICATIONS, RECOMMENDATIONS, AND FINAL THOUGHTS	128
.....	128
Introduction.....	128
Implications of the Framework.....	129
Recommendations for Further Work and Research.....	130
Program Impact.....	131
APPENDIX A SURVEY PROTOCOL AND INTERVIEW DATA.....	133
APPENDIX B VOLUNTARY PREKINDERGARTEN (VPK) TEACHER	
SURVEY/DATA	140
APPENDIX C INSTITUTIONAL REVIEW BOARD APPROVAL.....	145

REFERENCES 147

LIST OF FIGURES

Figure 1. Early Learning Coalition of Flagler & Volusia Counties (ELC-FV) Staff Flowchart	32
Figure 2. Teacher beliefs about pre-school and mathematics.....	72
Figure 3. Teacher confidence in their mathematics knowledge	74
Figure 4. Teachers' confidence in specific mathematics abilities	76
Figure 5. Teachers' confidence in general mathematics abilities.....	77
Figure 6. Teachers' trepidation about mathematics	78
Figure 7. Teachers' aversion to mathematics	79
Figure 8. Teachers' willingness to find mathematics alternatives	80
Figure 9. Teachers' ability to perform basic mathematics skills.....	81
Figure 10. Teachers' sense of direction	82
Figure 11. Teachers' skill with numeric data and finding patterns.....	82
Figure 12. Teachers' skill in spatial estimation	83
Figure 13. Teachers' comfort with rotating objects in their mind	83
Figure 14. Flowchart of framework for the curriculum plan.....	107
Figure 15. Framework for Voluntary Prekindergarten (VPK) Professional Development	111

LIST OF TABLES

Table 1 Voluntary PreKindergarten (VPK) Rate Calculation 4

CHAPTER 1 THE PROBLEM OF PRACTICE

Introduction

Within the kindergarten through 12th grade educational systems throughout the country there are standards which define the expectations for each student's development and learning. In recent years, this concept has been extended into the early childhood education arena, bringing with it a host of suggestions pertaining to how the standards should be addressed, what they should include, and how they should be embedded within the daily preschool curriculums. Each state has approached this task differently, based on the goals of their program as well as the availability of funds.

In Florida, the Early Learning and Developmental Standards for Four-Year-Olds (2011) were initially created in 2005 by a team of professionals, taking into consideration developmentally appropriate practices and expectations for children within this age group. Voluntary Prekindergarten (VPK) teachers are required to provide instruction to the students based on these guidelines, which outline the necessary skills that each four-year-old should know and be able to do by the end of their prekindergarten year. In preparation for the use of these standards, VPK teachers and directors must attend a three-hour training session as a means of assisting them in understanding the standards as well as learning how to embed them within their daily lessons. Additionally, VPK teachers and directors are also mandated to attend another training that demonstrates how to administer the VPK assessment; a tool also utilized by the state of Florida to measure school readiness rates. Teachers can also use the information from this assessment to guide them in their instructional planning. Unfortunately, despite the supports put into

place to assist teachers of students in VPK, data indicate there are large numbers of children entering into kindergarten within the targeted county who are ill-prepared. The implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds has been ineffective for VPK teachers residing in this northeast county of central Florida.

Problem Statement

There has been a 17.5% increase in the number of VPK centers within the targeted county over the past four years being placed on probation due to readiness scores. Thus, the problem of practice this dissertation in practice addressed was the lack of a comprehensive professional development program, supportive of VPK teachers in effectively implementing the 2011 Early Learning and Developmental Standards for Four-Year-Olds in developmentally appropriate ways to increase the academic achievement of their students and to decrease the number of centers placed on probation (Readiness Rate, 2014).

Background of the Problem

The readiness rates over the past four years reveals an increase in the number of centers within the targeted county scoring below the minimum readiness score, and thus being placed on probation (Readiness Rate, 2014). During the 2009–2010 school year, only 3.5% of the 167 centers scored below the established minimum readiness rate. In 2010–2011, 25% of the 174 centers failed to meet the qualifications. For the 2011–2012 year, 33% of centers ranked below the readiness rate; and in 2012–2013, there were still

24% of the 195 centers that had readiness rates below the predetermined passing rate. These data, coupled with interviews from VPK teachers and directors, indicated that one of the primary factors behind the low performance rate for children attending those centers may be related to the planning and carrying out of instruction provided by the VPK teachers in those targeted centers and their use and understanding of the 2011 Early Learning and Developmental Standards for Four-Year-Olds. This, in turn, related directly to the Early Learning Coalition (ELC) of the targeted county and its inability to meet the needs of the VPK teachers and directors they serve.

According to the Office of Early Learning, the VPK Provider Readiness Rate was established to evaluate how effective a VPK provider was in preparing four-year-olds to be successful in kindergarten based upon the 2011 Florida Early Learning and Developmental Standards for Four-Year-Olds (Office of Early Learning, 2015). The rates have been calculated for all of the VPK providers who, during the school year, served a minimum of four children for at least 70% of either the school year or summer VPK programs (Office of Early Learning, 2015). The rate has been expressed as a percentage based on two assessments given to children within the first 30 days of entrance into kindergarten. These two assessments include The Early Childhood Observation System (ECHOS), and the Florida Assessments for Instruction in Reading, (FAIR). A provider deemed to be low performing was one whose readiness rate was at or below the bottom 15% of all providers' readiness rates, as indicated by the Office of Early Learning (2015). To further explain this process, consider a VPK program with 24 children enrolled. All of those 24 children attended at least 70% of the program during

the regular school year or summer program. Those 24 children, upon entry into kindergarten, are screened on both the FAIR and the ECHOS assessments. Of those 24 children screened, 18 of them scored as “being ready” for kindergarten. The state then takes those 18 children and divides it by the 24 children who completed the program and ends up with a figure of 75%. This then becomes that center’s readiness rate.

Table 1 contains an example of the variables used in the VPK rate calculation.

Table 1

Voluntary PreKindergarten (VPK) Rate Calculation

Kindergarten Readiness Calculation Variables	ECHOS™ FAIR
Children Ready for Kindergarten ECHOS™: Demonstrating or emerging progress FAIR: Probability of reading success at or above 87%	18
Children Screened The number of children screened on both measures	24
Percentage of Children Ready for Kindergarten The number of children ready for kindergarten divided by the number of children screened on both measures	75

Note. Adapted with permission from Florida Office of Early Learning (2013)

Further analysis of research indicated that many states have been struggling to meet similar issues as those facing teachers in the targeted county located in Florida. The National Institute for Early Education Research, (NIEER), is an organization whose purpose is to provide independent research well as technical assistance to those in the

field of early childhood education (NIEER, 2014a). This institute works with both national and state agencies as well as policy makers to research and disseminate information pertaining to the status of early childhood education, specifically outlining exemplary practices for all children. In addition, each year NIERR publishes a *State Preschool Yearbook* which serves as an annual report, providing current data pertaining to all of the state-funded prekindergarten programs located in the United States. This yearbook provides a comprehensive report of each state's program, which tracks each state's progress towards 10 quality and research-based standards (NIEER, 2014c). Although the report suggests that those standards do not in themselves guarantee quality, they do point to certain trends such as the number of states that rank quite low in the area of professional development (NIEER, 2014c). In addition, data secured from the 2013-2014 NIEER executive summary indicated that at the onset of the school year, there were only five states whose programs met all 10 of the benchmarks, with nine other states meeting nine of the 10 benchmarks (NIEER, 2014c). Regrettably, they also noted that there are six states who met less than half of those ten benchmarks, with Florida falling into that category with a score of three (NIEER, 2014c). Therefore, if it is the recommendation of NIEER to raise the quality of services in these Pre-K programs, it becomes necessary to provide the appropriate resources in the targeted areas to ensure that the programs can offer the best quality care to the children in attendance (NIEER, 2014c). Although there are other factors to be considered when analyzing this data, there are certain trends which have revealed the need to address particular professional development efforts within VPK programs.

Key Stakeholders

There have been several participants who are both directly and indirectly affected by this problem. First and foremost are the VPK children who are enrolled in these specific programs. If targeted children are shown to be inadequately prepared for the kindergarten classes based on the readiness rate calculation, they are the primary recipients of a program whose teacher training has not been adequately supported or the support services in place are not effective in meeting the needs of the teachers and directors.

Additionally, the teachers and directors who work each day to provide instruction to the children are also affected by this problem. Centers that do not achieve a successful readiness rate score are required to submit an improvement plan where they address two target areas from which they will improve upon and outline specifically what they will do to secure a passing readiness rate. They must also purchase and utilize a curriculum approved by the Florida Department of Education (FDOE) and participate in a staff development plan outlined specifically for this situation. Additionally, they are required to submit annual progress reports and apply for a specific good cause exemption as it pertains to the progress they have made in the previously stated requirements (Florida Office of VPK Improvement Process, (2013).

Furthermore, the three ELC-FV employees whose job it is to support the VPK teachers and providers, are also impacted by this problem. Each member of the ELC's professional development team is currently responsible for providing technical assistance to approximately 50-65 providers. This number alone does not allow for effective

coaching and time to devote to the process of quality professional development. The problem has been reinforced based on the research conducted by Landry, Swank, Smith, Assel, and Gunnewig (2006) who stressed the importance of creating learning opportunities that take place over a period of time with ongoing supports and opportunities to share with peers. Moreover, the lack of clarity as it pertains to the term, technical assistance, also leads to confusion as it relates to the services those employees are supposed to provide. Not only have the employees of the Coalition expressed frustration as to the lack of clarity regarding specific job responsibilities, but the providers have also indicated their lack of understanding with regard to the specific VPK curriculum and instructional services/supports that are available to assist them in their classrooms.

The students' parents and taxpayers are also impacted by this problem. James Heckman (2010), a professor of Economics at the University of Chicago, further reiterated this concept, stating, "The best investment is in quality early childhood development from birth to five for disadvantaged children and their families" (p. 119). Parents have relied on the ELC-FV to support and provide quality learning for all children enrolled in their early childhood education programs. The mission of ELC-FV has been stated on its website as: "To enhance children's school readiness by providing opportunities for quality early learning, while strengthening family stability for a healthy community" (Office of Early Learning [OEL], 2015). Failure of the ELC-FV's contracting centers to meet the state's readiness rates criteria affects not only the parents who entrust them to provide these services but also to the taxpayers and donors who

provide financial support to the ELC-FV for the purpose of providing quality early childhood education.

Context

In the state of Florida, the Department of Education (FDOE) has been required by law (Section 1002.69(5) Florida Statutes (F.S.)) to calculate and set a minimum kindergarten readiness rate every year for each private or public school VPK program. The Office of Early Learning (OEL), in response to Florida Statute 1002.69, adopted a minimum readiness rate that demonstrates that each provider has delivered the VPK program in a satisfactory manner. Those providers who score below the minimum score are then targeted as a Provider on Probation (POP) and are required to take part in improvement efforts as outlined by the OEL in an attempt to remedy the problem(s).

Relationship to Other Organizational Problems

This problem is related to various other components of the organization as well. Looking at the broader picture of early childhood education, the problem of inadequately supporting VPK teachers in the area of professional development topics and processes is also related to the kindergarten teachers who are the recipients of these children. Kindergarten teachers are held accountable for the progress each of their children makes with regards to standards outlined by the (FDOE). This further reinforces a ripple effect and demonstrates how a fault in the system can hamper the success in other casually-linked programs. Both the kindergarten teachers and subsequent teachers are impacted

by this failure to provide appropriate instruction, all of whom are faced with the challenge of working to ensure each child is performing on grade level.

Looking specifically at the components of quality staff development programs, it becomes apparent that the VPK teachers and directors within this county have not received adequate supports in incorporating the 2011 Florida Early Learning and VPK Standards for Four-Year-Olds within their lessons. Based on interview data, it was evident that despite the three-hour Standards training, the teachers and directors still did not have a solid understanding of the standards and how to use them when planning and providing instruction for VPK children. Teachers indicated they needed support groups or even follow-up sessions to help them to better understand and implement the standards. Directors shared that their staff did a lot of research on their own when planning with the standards, since little help is available to them. These areas are critical to the success of the program, as the curriculum framework serves as the foundation on which all other instruction is based. Without being able to fully comprehend the standards and the role teachers play in designing and delivering instruction to VPK children, the program is no longer aligned to the original intent of delivering quality early childhood instruction associated with a explicit curriculum format. Thus, the key to implementing these standards successfully requires that the teachers and directors fully understand the standards and have a solid grasp with regard to uniting their instruction in accordance with these standards. Additionally, they will also require appropriate and ongoing supports to ensure that they are utilizing these standards accurately and appropriately throughout the school year.

Significance of the Problem

In recent years, there has been an increase in attention to the importance of early childhood education, heralded not only from parents but from policymakers and the public as well. With the growing number of two-income families in the workforce increasing, the need for appropriate and affordable child care has continued to rise. According to the group Child Care Aware (2015), “approximately 11 million children under the age of five spend an average of 35 hours a week in child care” (p. 6).

Policymakers at the federal level have a greater influence as opposed to the typical family in this area, and often tout this as a platform issue when running for office. A prime example is President Barack Obama’s work, including the Early Learning Grants created in 2008, which enabled states to develop comprehensive early childhood programs. Additionally, during his 2013 State of the Union Address he continued to reinforce the importance of this topic by proposing tax cuts for families receiving these services (Politico, 2013). Actions like these have helped to set an important agenda and encourage others to follow.

In addition, research from Yoshikawa et. al (2013) has provided evidence that early intervention programs can help to foster school readiness, filling the gaps between advantaged and disadvantaged children and helping to level the playing field when those children enter kindergarten. Through supportive interactions between children and teachers, opportunities for learning increase dramatically. Rich language experiences and supportive emotional environments also help to set the stage for successful learning. According to Pianta and Barnett (2012), it is the long-term effects of those gaps that

necessitate effective interventions targeting specific areas to ensure developmental success of children. Furthermore, targeting these areas proves to be beneficial to the economic and social components of the communities as well, (Pianta & Barnett, 2012).

Along with this renewed interest in the field have come issues that present potential barriers to the successful implementation of appropriate early childhood programs. First and foremost are the budgetary constraints that each state may face. Allocating sufficient funds to see that each child receives Pre-K services is a concern for those who see the benefits of this intervention. Although the federal dollars assigned to this area have remained consistent, there have been variations across the state levels as to how the programs are funded. According to NAEYC (2009), each state has established its own specific criteria such as the number of hours a day a child must attend, eligibility criteria, the age when a child can begin to attend, and which standards must be met.

Another area of concern is the turnover rate for teachers and directors in the field. According to the National Association for the Education of Young Children [NAEYC] (2004), “The average annual turnover rate is more than 30% for all teaching staff” (p. 29). Based on exit interviews and research conducted by Russell, Williams, & Gleason-Gomez (2010), early childhood education teachers cited issues such as too little compensation, lack of benefits, and insufficient administrative support as some of the reasons for leaving their current workplace (2010). Those in the field of early childhood education on average are paid \$9.38 per hour or \$19,510 per year according to the U.S. Department of Labor (2012). This wage, in comparison to that of a family of three, meets the criteria established by the U.S. Department of Health & Human Services as

meeting the poverty level threshold. It is evident that additional efforts must be put forth in this area in order to attract and retain the best and brightest in the field.

All of this evidence leads back to the earlier problem statement. Because of a 17.5% increase in the number of VPK centers within the targeted county over the past four years being placed on probation due to readiness scores, the problem of practice this dissertation in practice addressed was the lack of a comprehensive professional development program. Such a program needs to be supportive of VPK teachers in effectively implementing the 2011 Early Learning and Developmental Standards for Four-Year-Olds in developmentally appropriate ways to increase the academic achievement of their students and to decrease the number of centers placed on probation (Readiness Rate, 2014).

Research Question

How can a comprehensive professional development program, based on the 2011 Early Learning and Developmental Standards for Four-Year-Olds provide the necessary supports to enable the VPK teachers and directors to successfully prepare VPK children to enter kindergarten prepared to succeed?

The goal of this research was to design a professional development program based on sound research and best practices. Additionally, it will be aligned with the needs of the recipients residing in Volusia County.

Organizational Context

In order to fully understand the problem and those organizations involved, it is necessary to provide background information to help the reader understand the roles each group plays within the context of this problem. The mission of the ELC-FV has been to enhance children's school readiness by providing opportunities for quality learning while strengthening family stability for a healthy community (ELC-FV, 2016). The ELC-FV provides services including quality early childhood care, which allows parents the opportunity to work and contribute to the community while their children receive appropriate early childhood educational experiences. These services are delivered through a comprehensive network of over 200 contracted legal child care providers including licensed centers and family child care homes, registered family child care homes, school-based programs, faith-based, license exempt programs, and informal child care throughout Volusia and Flagler counties.

Additionally, according to the ELC-FV website, this non-profit organization has worked to support early childhood educators in a host of different ways (ELC-FV, 2016). It keeps them abreast of current mandates from the Florida Department of Education (FDOE) and Office of Early Learning (OEL) to ensure that they are in compliance. It assists providers with community resources that are available for children with special requirements and helps them to ensure their environments meet the needs of those with various exceptionalities. Furthermore, the staff is also available to give technical assistance to the teachers, modeling appropriate strategies and helping them to access materials that can assist them in their teaching goals. They are on hand to help submit the

various documents required of the state, including the VPK assessment data that is entered three times a year online. ELC-FV team members can also assist with the delivery of appropriate and meaningful instruction to all VPK children using the 2011 Early Learning and Developmental Standards for Four-Year-Olds as their framework for lesson planning and teaching so that all children leaving the program will experience success in kindergarten as well as in subsequent grades. Most importantly, they provide this assistance to those centers who request the services as well as those designated as Providers on Probation, (POP) centers. Finally, the Coalition also serves as the main provider of professional development trainings that are linked to the implementation of the standards within the VPK programs.

Those responsible for providing the training and support services to child care providers within the county are housed within the ELC-FV. Currently there are only three members who are tasked with delivering these direct services to the 195 providers. Therefore, allotting time for additional visits for support and follow-up is simply unrealistic. The lack of time does not allow the members to provide these VPK centers with much needed ongoing support. Also, the ELC-FV professional development staff struggle to provide timely training that meets the needs of teachers and directors. Unfortunately, the gift of time does not exist to effectively and efficiently provide those much-needed and ongoing supports.

It is worth noting that not all staff at each early childhood center is required to be trained in the standards due to various age assignments within the center. Only those currently teaching VPK are mandated to have the training. Ideally, having all faculty

trained would promote a collegial workgroup, allowing everyone to be familiar with the process and able to support each other in achieving the goal of providing instruction based on the standards framework.

The problem of practice is significant to me because I work as a professor of Early Childhood Education at the local college. My job requires that I prepare teachers working to secure either an AS degree in Early Education or a Child Care Apprentice Certificate to meet the needs of the children they will serve through developmentally appropriate lessons and interactions, while also meeting the mandates established by the state. This also includes lessons based on the Early Learning and Developmental Standards for Four-Year-Olds (2011). Occasionally, I assist teachers and directors who are currently working in centers and might be interested in possibly furthering their education, whether it is through earning a certificate, AS degree, or simply taking some form of professional development training. Regardless; it is my belief that we should work together as a community to help to increase the understanding of concepts such as the Early Learning and Developmental Standards for Four-Year-Olds (2011) and help early childhood educators provide the best quality care possible.

As the Assistant Chair of Early Childhood Education at the local college, I am also required to serve on the board of the ELC-FV and have done so for the past five years. I also serve on the Executive Committee, and I chair the Quality Committee, a sub-committee that works to ensure compliance with the Coalition plan and helps with the implementation of initiatives such as professional development and training and technical assistance to providers. Working in this capacity has enabled me to assist in the

oversight of the organization's activities and to assist in facilitating some of the different state mandates. I am limited in my abilities to engage in many of the activities due to my role as a board member; however, I am able to remain current in the various Office of Early Learning mandates and occasionally attend pertinent trainings related to the field of early education as well.

Working with the Coalition has afforded me the opportunity to be trained alongside Coalition staff in several areas including, but not limited to, the Early Learning Standards for Four-Year-Olds. In turn, I provided that training to many practitioners in the field, helping them to gain a better understanding of the standards and how they could embed them within their daily curricula. The ELC-FV asked me to assist with these trainings because I have a working relationship with the child care staff in the county. I frequent the various child care centers, working with the teachers and directors in various ways: (a) assisting them in enrolling in one of the two programs at the college; (b) advising them on how to renew one of their teaching credentials; or (c) simply observing one of the current students in the college program. Additionally, this training has been embedded within the college's Child Care Apprenticeship program, ensuring that graduates will leave with the necessary certification required to teach VPK. Furthermore, this training is also incorporated into some of the college's other certification courses as a means of meeting the state mandated requirements.

As a researcher, my positionality within this problem of practice can be defined, according to Herr & Anderson (2015), as an "outsider in collaboration with insiders" (p. 116). My situation is unique in that it contains elements of both an insider and an

outsider. I am a recognizable face in some of the child care centers throughout the county. A small sampling of directors and teachers are familiar with me, having attended one of my classes or trainings. This also applies to ELC-FV employees, because I have worked with a small group of employees on various committees or attended different trainings alongside them. With those characteristics, I find myself associating with this research as an insider. However, I possess some outsider tendencies as well. Serving as a board member, I have somewhat limited familiarity with many of the facets of the ELC-FV. I do not have the inside knowledge of daily routines that an organization employee would possess. As a board member, I am provided with an overview and summary of facts. The same holds true of the child care centers I visit. I am simply an outsider, stopping by to visit and observe a teacher presenting a lesson. I have little to no understanding of the day-to-day issues that take place at each center.

It was imperative that all of this information be taken into consideration when conducting the research and gathering the data. Past associations with employees and teachers, as well as my roles on the ELC-FV boards may have some influence on my thinking about the project. This includes the use of the co-learning participatory method which, according to Herr and Anderson (2015), can bring together both the outsiders and the insiders in an effort to create and implement a successful professional development plan that meets the needs of the VPK teachers and directors.

History and Conceptualization

National Context

The desire to constantly research and find ways to assist teachers through professional development opportunities has been at the forefront of education for years. In the past, many teacher in-service programs have been designed at the national level for the K-12 population, offering little assistance to those in the field of early childhood. However, the early 2000s saw an increase in funding in the area of professional development, and certain initiatives spurred the inclusion of early childhood educators as well. The Good Start, Grow Smart Program (GSGS) was established in April, 2002 in response to the No Child Left Behind Act (2001). This program began as an effort to assist the various states in helping to strengthen learning opportunities for young children. The primary purpose of this initiative was to make sure that children were entering kindergarten prepared to succeed. States were asked to create standards, or Early Learning Guidelines (ELGs), pertaining to the various core content areas including literacy, language and mathematics for children ages three to five to ensure that they were in alignment with their school's regular K-12 standards. Additionally, this initiative asked for states to develop educational training opportunities for those in the early childhood field to help further their understanding and implementation of the ELGs (White House, 2001).

Another program that has assisted in this area has been the 2009 American Recovery and Reinvestment Act which helped to fund the Early Learning Mentor Coach Initiative. This program aided in providing just over \$28 million to assist in investigating

strategies that would lead to the successful implementation of mentoring programs for educators in early childhood field (Shore, 2012). This program helped to fund mentor coaches who worked beside the early childhood teachers in the Head Start and Early Head Start programs. The intent was to offer technical assistance and on-the-job guidance in an effort to increase the skill levels of the teachers, which in turn would provide for successful outcomes for children within their care (Office of Planning, Research, & Evaluation [OPRE], 2014). Despite several limitations, including the amount of time allotted for coaching and limited resources, the results from this program indicated positive experiences concerning the supports that the coaches received.

It is also worth noting that the Finnish educational system encountered issues with its professional development programs as well. Though the current educational system in Finland has appeared to thrive based on educative reform including areas such as smaller class size and rigorous assessments, it initially struggled with its own professional development concerns. Tucker (2011) explained that the Minister of Education, in cooperation with other partners, have worked together to create a national professional development program that will attempt to provide access in a more equitable fashion for teachers in all grades living in Finland. This plan's initial budget was projected to be \$30 million, with the goal of doubling this funding by 2016. This lofty plan is certain to make an impact on the teachers and students residing in Finland.

State Context

Beginning in 1999, the Governor of Florida, Lawton Chiles, and his Commission on Education released a report indicating that a system was to be put into place where

early childhood services, in conjunction with school readiness, would be established to ensure a coherent and coordinated approach to the delivery of services at both the state and local levels. According to Allen (1999), the focus was on quality, including quality curriculum, appropriate student-teacher ratios, and training opportunities for early childhood teachers. This request led to the passage of the School Readiness Act. The goals of this legislative initiative, according to King and Rohani (2001), were to consolidate preschool programs in Florida as well as to build a governing board that would be responsible for both creating as well as maintaining policies and standards for all school readiness programs. Approximately six years after this legislation was passed came the development of the Florida Prekindergarten Program, whose purpose was to provide the highest quality preschool program available for all four-year-olds, ensuring that they enter kindergarten prepared for success. Currently, approximately 69% of the eligible population participate in this early intervention opportunity, with a price tag of more than \$366 million each year in the state of Florida (Children's Movement of Florida, 2015).

According to the State of Preschool report, which outlines all state updates pertaining to their preschool programs, Florida's private preschools met only three of the 10 benchmarks for quality (NIEER, 2014b). This ranking takes into account a host of different variables including the duration of the program, class size, curriculum, teacher characteristics, and licensing and accreditation. Further analysis revealed that despite the fact that Florida has led in the area of state preschool access, they have also been noted as (a) having lower per-student expenditures as compared to many other states and (b) a

lesser degree of quality regulations (NIEER, 2015b). This information causes concern about Florida's ability to meet the goal of high-quality care. As a footnote, the authors of this report, Bassok et al. (2014) noted "how difficult it can be to actually define, or furthermore measure high quality within an early childhood system," (p. 9). Citing examples of children's learning gains and per-student expenditures as weak predictors of program success, the authors further reinforce the fact that due to limited evidence and/or research in this field, it is just as critical to look at other components of the program including areas such as large amounts of accessibility, which can yield positive benefits as well (Bassok et al., 2014).

Local Context

Based on informal interviews with staff from the ELC-FV and early childhood providers, it appears that directors and educators within Volusia County have struggled for years to meet the various mandates from both the ELC-FV and the OEL (C. Twyman, personal communication, May 13, 2015). With a high turnover rate in the field, they have consistently been faced with the arduous task of simply filling vacancies. Once positions are filled, they must allocate time for those newly-hired to spend additional time being trained in the new strategies, often doing so on their own time with little or no financial compensation. Due to budget constraints, the professional development opportunities that were frequently offered by the Coalition in the past have been reduced to just one or two a month, are often held in the evenings, and typically address only general topics of interest. Directors of centers often express frustration because of the lack of incentives and learning experiences available to those in the field.

In 2005, the Florida Voluntary Prekindergarten Standards were established, based on research aligned to appropriate practices pertaining to quality early childhood education. Embedded within these standards was the plan to revisit them every three years, making adjustments and modifications as deemed necessary by the Department of Education/Office of Early Learning. When the initial roll out began, many teachers and directors in the field lacked the very basic understanding of the concepts of standards and the role they would play in the planning of curriculum. The ELC-FV initially established trainings as a means of helping the providers gain the essential understanding of the concepts involved, particularly the history of the standards themselves. The reason for doing this was to help providers understand how the standards could serve as an effective tool in ensuring appropriate instruction to children ages four and up. Although it did not become a requirement for VPK teachers until 2013, the Office of Early Learning strongly encouraged teachers to attend so they could become acquainted with this format for quality lesson planning purposes.

Also included in the trainings were presentations outlining the specific components of the standards: a domain, a component, a standard, and a benchmark. It was believed that by teaching personnel the various definitions and how they related to the larger picture of the standards as a whole, they would begin to tie this into their own background knowledge. Unfortunately, this proved to be ineffective, as many recipients of these trainings had very little understanding of the curriculum planning process and, therefore, had difficulty tying this new information into their existing understanding.

As the professional development opportunities continued, the instructional content began to be more focused on the specific VPK standard components. The hope was that because many teachers and directors had previously had some exposure to the subject matter, they would be able to glean the skills necessary to assist them in comprehending this information. These trainings began to narrow their focus on the early literacy components; specifically, phonological awareness and alphabetic knowledge. Testing data from kindergarten classrooms within the county indicated that these areas presented the most difficulty with children.

To further assist in comprehending the subject matter the ELC/FV embedded a practicum element within the training. Understanding that simply attending the session was no guarantee that participants would grasp the subject matter, the practicum component was intended to enable participants to demonstrate mastery via presentations and the submission of lesson plans. Unfortunately, this was not required by the state, so there were few incentives to participate in this voluntary program. As time went by, it became increasingly clear that the need for a coaching element was needed to make this training an effective and productive influence on instruction in the VPK classrooms.

Changes in Understanding the Problem

After speaking directly to the employees of the ELC-FV as well as the VPK Regional Facilitator, I noticed there were certain themes that emerged pertaining the understanding of the problem and how it has changed over time. First and foremost was the awareness that the element of funding was not supportive of these training endeavors. With the state mandating these specific initiatives, the funding has only been made

available to those children who fall under the school readiness umbrella. Although training opportunities can be made available to those who provide these specific services, questions remained regarding (a) VPK providers who did not serve that population and (b) how the Coalition was supposed to continue to meet the demands of this population as well.

Furthermore, the failure to address the necessary component of follow-up training opportunities for the providers as well as supportive and ongoing coaching has yet to be attended to. The initial goal was to provide basic standards training to all those teaching VPK classes. This effort has indicated the need for follow-through supports and coaching opportunities to ensure successful implementation. This proposed strategy was further reinforced, according to research conducted by Landry et al. (2006). They stressed the importance of creating learning opportunities to share with peers. The ELC-FV had no concept of this issue when it began initiating this training mandate.

Another component worth noting was based on research conducted by Pianta, Barnett, Burchinal, and Thornburg, (2009) which reinforced the concept of providing the training to the entire preschool program to ensure that everyone was familiar with the content and could assist each other in facilitating it in their classrooms. Members of the Coalition staff, in conjunction with the DOE and OEL, had only intended to have those teaching the VPK classes trained in the standards. What has since emerged is the need to have entire learning centers trained on the birth through five-year-old standards so as to have a comprehensive understanding of the developmental progression each child must go through, arriving in kindergarten prepared for success.

Yet another understanding that was still in the primitive phase at the time of this study was the comprehension of just how many people are needed to successfully serve the teachers and the directors in the field. At the onset, additional staff members were allocated to the field at a ratio of approximately 35 to one field supervisor, thus allowing opportunities to oversee and assist those with general early education issues. This has since been reduced to an unrealistic ratio of approximately 65 providers to one ELC-FV support staff. This trend, possibly tied into fiscal and staffing allocations, does not support the goal of quality early childhood education or provide sufficient support to those in the field. According to Winton & McCollum (2008), many agree that current professional development pertaining to early childhood education at the national, state, and local levels varies enormously.

National Efforts to Address the Problem

Educational standards have existed within the K-12 school system for many years but have just recently made their way into the prekindergarten classrooms, due in large part to the rise in the number of states that have begun to provide these early education programs. The primary goal of the standards has been to increase a child's readiness for kindergarten while, at the same time, providing a firm foundation for later academic success (Neuman & Roskos, 2005). In order to effectively embed these standards within the states' prekindergarten programs, there have been various attempts to provide the necessary supports and trainings to those teachers tasked with this responsibility. Unfortunately, the formats for these professional development trainings vary at the national level, due in large part to a lack of "a common vision for the most effective ways

of organizing, and implementing professional development to improve the quality of the early childhood workforce” (Buysse, Winton & Ross, 2009, p. 235). Results from various studies indicate that the current early childhood professional development efforts at the local, state, and national levels have been deemed to be fragmented (Winton & McCollum, 2008).

Effect of These Efforts

These fragmentations in professional development offerings posed a number of challenges. As indicated by Buysse and Winton (2009), because of the lack of a standard definition for professional development, it becomes very difficult to compare the various programs or even to investigate research to determine what characteristics are the most effective and for which type of population. At the national level, organizations such as the National Association for the Education of Young Children (NAEYC) have been working diligently to define and disseminate their definition of professional development in an attempt to help bring those fragmented agencies together for the betterment of the children and the teachers who work with them daily. Creating specific standards to address this concern, NAEYC has outlined critical elements pertaining to professional development as a means of helping to bring together those fragmented systems in an attempt to streamline them. Specifically, they worked to create “an effective system of early childhood professional development that provides meaningful opportunities for career advancement to ensure a well-qualified and stable workforce” (Willer, 1994, p. 423).

State Efforts to Address the Problem

In the state of Florida, there are various supports to assist those who teach prekindergarten students, one of which is that teachers are required to attend the three-hour 2011 Early Learning and Developmental Standards for Four-Year-Olds training. This serves as the foundation from which teachers can create appropriate lesson plans in alignment with the documented standards. Additionally, they are also required to attend the four-hour training entitled, “How to Administer the Florida VPK Assessment,” a state-mandated tool that is to be administered to children at the beginning and end of the preschool year as a means of documenting their progress. Teachers can voluntarily attend a two-hour training titled Integrating the Standards: Phonological Awareness, in which they delve into specific strategies as they pertain to early literacy skills. Furthermore, they can voluntarily attend the two-hour training, VPK Assessment Instructional Implications, which assists in reviewing the various score reports generated from the VPK Assessment and helps them to generate lesson plans based on the data from the assessment.

Included in the Florida Department of Children and Families services are a host of online professional development opportunities devoted entirely to directors, teachers, assistants, and even parents (Florida Department of Children and Families, 2016). Each course is available at a cost of \$10 and affords the learner the option to earn certificates of completion. Topics include Emergent Literacy for VPK Instructors, English Language Learners in the VPK Classroom, Language and Vocabulary in the VPK Classroom, and the VPK Director Credential Course.

Additionally, there are online teacher links which enable VPK teachers, directors, and other interested members of the community the opportunity to access free resources including the VPK Teacher Toolkit, with detailed folders created specifically pertaining to certain expressed areas of need. There is a folder for Language and Vocabulary, one for Mathematical Thinking, and a folder specifically dedicated to the VPK Assessment. Each folder includes instructional videos, resources, and strategies teachers can use to help in those targeted areas. There are also sample lesson plans that are specifically based on the Florida Early Learning Standards designed to help teachers plan targeted lessons pertaining to each of the domains. Finally, the Bright Beginnings website, based on the FDOE's Bright Beginnings initiative, seeks to provide parents and teachers with a host of different resources that can assist children in the VPK-third grade programs (OEL, 2015).

These efforts have served to help out a number of teachers and directors in gaining the basic understandings of the standards as well as providing additional lesson planning supports. Unfortunately, informal conversations with some early child care providers indicated that they were not aware that these resources exist. Furthermore, those who have accessed them have expressed frustration with the sites, indicating they lack the basic instructions of how to navigate through the different tabs and secure the specific information they were attempting to locate (C. Twyman, personal communication, May 13, 2015).

Local Efforts to Address the Problem

There have been minimal efforts to address the problem within the organization, as the financial and human resource constraints continue to serve as the foundation from which all other issues stem. Small, voluntary director support groups have been established to assist those providers on probation with the implementation of the standards as well as other appropriate practices. This has been facilitated by the VPK Regional Facilitator alongside an ELC-FV employee in an attempt to help bring those specific centers out of their current rating situations. The teams meet every other month, provide opportunities to share successful strategies, learn appropriate techniques, and earn continuing education units upon completion of certain tasks. No additional trainings have been provided through the ELC-FV to support the directors and providers in the area of understanding and successfully implementing the standards within their daily curriculum delivery.

Effect of Efforts to Address the Problem

The aforementioned director support groups were implemented for the 2014-2015 school year; thus, there was little data to confirm its effectiveness at the time of this study. Overall there were approximately 20 counties serviced with support groups in each area typically consisting of three to five participants. Positive feedback has been shared based on informal evaluation forms, but until school readiness scores are released, there will not be any verifiable evidence as to their effectiveness.

Factors That Impact the Problem

Any multifaceted problem, including finding ways to support teachers and directors with the implementation of the 2011 Early Learning Standards encompasses a host of potential reasons and causes. Following is a summary of possible explanations that can be linked to this area.

Knowledge. Teachers and directors have not received adequate supports in incorporating the 2011 Florida Early Learning and VPK Standards for Four-Year-Olds within their lessons. According to data from the informal interviews conducted, it was evident that VPK teachers and directors do not have a solid understanding of the standards and how to use them when planning and providing instruction for VPK children. Because of the minimal supports provided to them, teachers have relied heavily on internet sites, suggestions from peers, and past practices in their own classrooms. Interviews with VPK teachers and directors pertaining to the trainings and their needs included responses such as “more hands-on trainings. . . show me; don’t tell me,” and “I know about the standards but I don’t know how to implement them.” These responses further illustrate the knowledge gap (C. Twyman, personal communication, May 13, 2015).

Based on the taxonomy table from Forehand (2010), the VPK teachers and directors center most of their instructional decision making in the factual and procedural areas. The factual level addresses the foundations of VPK instruction including instructional issues such as how to introduce and reinforce letter, number, and color recognition, etc. The procedural level brings into play the specific knowledge of the

criteria for actually determining when to use appropriate strategies. This includes determining what types of lessons to incorporate when introducing and reinforcing concepts previously mentioned. What could possibly be lacking is reinforcement in the metacognitive area. This would include both self-knowledge and strategic knowledge.

The self-knowledge area pertains to a person's own beliefs about something such as early learning teaching strategies. Pajares (1996) stressed that being cognizant of personal beliefs and how they impede or accentuate teaching is critical to the success of students. This self-knowledge could also include their own personal beliefs in their abilities to successfully carry out this type of planning using the standards as the framework.

The strategic knowledge component directly relates to the teachers and the directors with regard to how to embed the standards within their own instruction. Utilizing the metacognitive level would help teachers to adjust their strategies based on the developmental standards and the needs of the students. According to Pintrich, as referenced in Anderson and Krathwohl (2001), this metacognitive knowledge requires having an understanding of the various strategies that may be used for the different tasks required of the teacher. Furthermore, it can assist them in possibly reevaluating or even changing their approach based on unsuccessful outcomes.

Structural Frame. Analyzing the performance gap at the ELC-FV using Bolman and Deal's (2013) structural frame helps one to understand the basic division of labor and the various responsibilities of the employees. Interestingly, the 195 providers of VPK

within Volusia County were supported by only three program representatives. Each is responsible for assisting approximately 65 centers.

Figure 1 provides a partial overview of staff currently in place at the Early Learning Coalition of Flagler & Volusia Counties (ELC-FV)

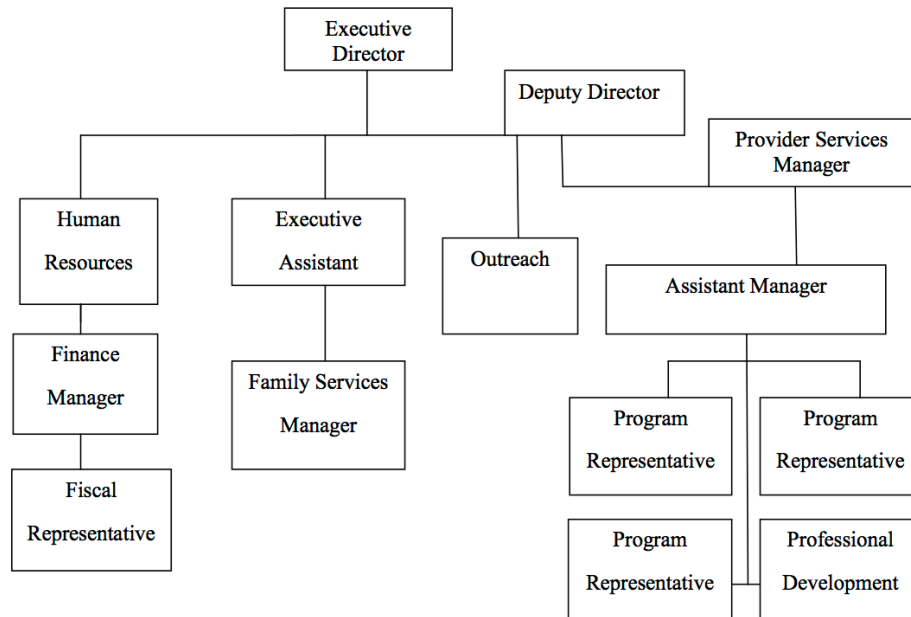


Figure 1. Early Learning Coalition of Flagler & Volusia Counties (ELC-FV) Staff Flowchart

To fully understand the structural issues within the ELC, it is important to reference Mintzberg’s model of structure which was described by Bolman and Deal (2013) as a divisionalized structure. This involves a top-down approach to management that is implemented through the use of managers within each department. These

managers are responsible for a team of employees to which they distribute information including mandates from the state as well as directives from the executive director.

The existing framework at the Coalition is based on the “top-down” model in which directives are mandated from the state, received by the supervisors, and simply directed down to the appropriate departments with little opportunity for exchange. This vertical coordination, though necessary in some aspects, does not allow for the opportunity to share ideas that could help to efficiently and effectively achieve those mandates. Bolman and Deal (2013) acknowledged formal and informal exchanges as the cornerstone of lateral coordination. Based on informal interviews with staff currently employed at the center, there are few opportunities for employees to meet and exchange information and ideas based on their own experiences when assisting providers in the field. According to Bolman and Deal (2013), “As organizations become more complex, the demand for lateral communication mushrooms (p. 55).”

Additionally, survey data from interviews conducted with VPK teachers and directors further reinforced the communication issue with members of the ELC staff. Directors who were interviewed expressed frustration with the current policies in place, as they were designed by the managers with little or no input from the providers they were supposed to support (C. Twyman, personal communication, May 13, 2015). They shared that a Director’s Forum was created where they met four times a year to discuss important issues pertaining to the various mandates as well as other center issues including the VPK Standards. During those exchanges, child care directors had the opportunity to meet with the executive director of the ELC as well as other members of

the staff to share their thoughts and ideas as to how the ELC could best meet their needs. Ultimately, however, directives were created and protocols were established that did not represent the majority of opinions and ideas they had shared (C. Twyman, personal communication, May 13, 2015).

Political Frame. According to Bolman and Deal (2013), the most important decisions intertwined within the political framework of instigating change have to do with allocating resources and determining who is to receive what. This can be applied to the VPK teachers and directors under the direction of the ELC/FV. The resources that have the greatest impact on centers' readiness rates include (a) allotting time for the teachers and directors to collaborate and plan appropriate instruction for children enrolled in the VPK program, and (b) receiving the necessary support from staff within the Coalition to ensure that the instruction they are providing is based on the framework of the 2011 Early Learning and Developmental Standards for Four-Year-Olds.

Directors and teachers are not afforded extended opportunities to spend time planning and collaborating when planning lessons for VPK students. Data gathered in my interviews indicated that 67% of the teachers' lesson plans were monitored by the director at their center (C. Twyman, personal communication, May 13, 2015).

Additionally, 75% of those surveyed shared that their instructional practices were also monitored by the director on site. However, the exchanges that take place during these events are often brief and woefully lacking in any type of quality interactions where the parties involved could question, secure clarification, and build upon prior observations, whether it be in a lesson plan format or in the actual classroom presentation.

Within the political frame lies a central theme that focuses on important issues including decision-making and power sources, as well as budgetary constraints (Bolman and Deal, 2013). Herein lies one of the biggest reasons for the lack of time for teachers and directors to collaborate. The simple staffing framework and the availability of funds to budget these cooperative opportunities are clearly not within the means of many of the child care providers. These centers struggle daily to keep the costs down while attempting to offer an attractive wage that will bring about quality personnel. Going beyond this to include additional coverage while teachers and directors collaborate is seldom an option in many small centers.

Furthermore, directors and teachers are not provided adequate human resources. As indicated earlier, the services available to the 195 centers within Volusia County are divided among three employees within the ELC/FV, with each being responsible for 65 early childhood centers. This figure alone reinforces the statement that providers are not supported adequately. Informal interview data further supports the need to review current budgetary allocations and possibly revise them to accommodate the needs of those who require support. Bolman & Deal (2013) saw the scarcity of resources as almost certain to create conflicts with everyone competing for resources, but they also saw this scarcity as an invitation for creativity and innovation.

Human Resource Frame (Motivation). The human resource frame is directly related to the premise that both people and organizations need each other, and when this fit meshes together, there are positive results for all parties involved (Bolman & Deal, 2013). Invariably, when the organization fails to provide appropriate time and effort

dedicated to the employees, the outcome will most often be poor results and staff who are no longer motivated to carry out the primary goals of the organization.

VPK instructors and directors lack appropriate professional development concerning the 2011 Early Learning and Developmental Standards for Four-Year-Olds. All VPK teachers within the state of Florida are required to provide their classroom instruction based on the standards. In order for them to successfully implement lessons based on these standards, they are obligated to attend two three-hour training sessions pertaining to the standards. The first three-hour session is dedicated to learning about the standards, their history, and how they can be used for planning purposes. The second pertains to the administration of the VPK assessment which is directly linked to the standards.

Data gleaned from the interviews support the notion that there is a not a quality fit between the VPK teachers and directors and the members of the ELC. Therefore, in order to effectively and efficiently meet the needs of the children in attendance at these VPK centers, it becomes necessary for the VPK instructors, the child care center directors, and the staff from the Coalition to all be in agreement regarding the professional development goals of the organization. Furthermore, information obtained through conversations with the teachers and directors indicated that teachers were still unclear as to how they can actually embed the standards into their daily curriculum delivery. When presented with a question as to the challenges/strengths experienced from the professional development received pertaining to the standards, several teachers indicated that they would like some form of additional support concerning how to

implement the standards in their own classrooms. Additionally, when asked if there were extra resources provided to them to ensure that the standards were successfully implemented at their center/school, a large portion of the respondents indicated that they knew of nothing the Coalition provided and often sought out supplementation on their own, relying heavily on the internet as their source of information. This further reinforced the concept initially mentioned: teachers and directors lack the appropriate training and supports to help them effectively utilize the standards in their classroom instruction.

VPK teachers and directors are unable to make the connections from the standards trainings to their own classroom practices. Based on interview records, it appears that VPK teachers and directors were having difficulty connecting the standards to everyday planning and delivery of their classroom instruction. As one interviewee shared, “They just told me to do it, but I need someone to show me how.” From this data, and in combination with other research gathered, this inability to apply concepts to their own teaching is not uncommon. This belief has been elaborated upon further in the political frame with regard to the lack of actual time devoted to professional development. Darling-Hammond and Richardson (2009) explained the need for professional development to be “sustained, coherent, and intense” (p. 47). This is in vast contrast to the current training protocol offered to the teachers within the targeted county. Additionally, Zigler, Gilliam, and Barnett (2011) reinforced the concept that “professional development must be delivered in small, repeated doses over time to provide opportunities for practice and feedback” (p. 64). These researchers stressed the

need to provide meaningful professional development opportunities where participants can make connections to their own classroom practices.

VPK teachers and center directors lack time for lesson planning and collaboration with peers. An additional concern is the actual allotment of sufficient time that would allow VPK teachers and directors the opportunity to plan with their peers and further reinforce the use of the standards within their daily lessons. It is apparent that centers have not been able to follow the theme of Bolman and Deal (2013) which reinforces the concept that people need each other. Instead, teachers are faced with the daily schedule constraints that lead to isolation and often require them to engage in planning on their own time and usually within the confines of their own homes. This practice undermines the basic premise of successful professional development opportunities where, according to Birman, Desimone, and Garrett (2000), teachers are afforded continued professional communication with other teachers.

Symbolic Frame. Bolman and Deal (2013) indicated that the symbolic frame is focused around symbols, rituals, beliefs, and values, often taking into consideration the different cultures that exist within the structure. Decisions made within the symbolic frame have a strong impact on the performance and even morale of those within the group. Therefore, they should be handled with the utmost care, as misuse will impair the trust inside the organization.

Creating relationships based on a common goal, with all parties willing to roll up their sleeves and work together to get the job done, is the ultimate goal of any association. Within this shared framework there also must exist opportunities to learn

more about the employees both on a professional and personal level. Vaill (1982) recognized the importance of this when he concluded that “spirit was at the core of every such group.”

The beliefs held by teachers directly impact their instruction. Teachers in the field of early childhood education are faced with a multitude of decisions on a daily basis concerning the instruction of the children within their care. Sometimes tension exists between what they actually practice and the beliefs they hold. Charlesworth, Hart, Burts, and Hernandez, (1991) reinforced this concept, indicating that teachers’ practices are associated with their beliefs. This information needs to be considered within the larger scheme of whether or not VPK teachers and directors are actually aligning their instruction based on the standards and doing so on a consistent basis, despite a potential conflict within their own beliefs.

Furthermore, this could also be attributed to the misunderstandings of the standards and how they can be used within their own classrooms. Data obtained from informal interviews supported this theory when participants were asked about the challenges/strengths they experienced from the standards training. Comments included “need support groups for follow up,” and “no idea how to implement in the classroom,” and “not really supported; just told to do this,” and “I need someone to show me how,” (C. Twyman, personal communication, May 13, 2015). This lends itself to finding ways to reinforce the use of the standards within their own classrooms while taking into consideration the beliefs teachers and directors hold as it pertains to developmentally appropriate instruction.

Data Collection and Analysis

Data procurement consisted of informal conversations with a total combination of 24 teachers and directors of five different learning centers housed within a central Florida county. The directors and teachers serve children from various economic backgrounds including, those who receive subsidized child care assistance as well as those who are private paying parents. They had varied levels of educational training: three with a bachelor's degree in education, two with an associate's degree, and seven with a child care associate certificate (CCAC). Of the remaining staff, all had high school diplomas and had met the minimum requirements to work in a child care facility as outlined by the state of Florida, which includes 45 hours of in-service training, CPR, and First Aid. Of the total participants, there was an average of seven years of experience working with children five years of age or younger.

In addition, data were gathered from the VPK Regional Specialist who works in conjunction with the OEL and ELC-FV. This representative has served as an early childhood teacher, director, trainer, and now regional specialist for OEL, contributing close to 40 years to the cause. She is well-versed in the training opportunities available to the providers and understands the fiscal constraints the state faces concerning the effective implementation of developmentally appropriate practices and the inclusion of the Early Learning Standards. She has worked to create the director pilot program previously mentioned as a means of assisting those directors whose centers are currently on probation. She has a unique understanding of the issues both the providers and state agencies face concerning early childhood education.

Literature

Professional development is essential to helping teachers strengthen their content knowledge and build upon their existing practices. Based on an in-depth analysis of research and literature, there are common themes that have emerged pertaining to effective professional development practices. Winton, McCollum, and Catlett (2007), in their research, found that effective strategies included the following components: the training must be sustained over a period of time; should be grounded in the actual practices that those teachers are currently engaged in; should be linked directly to both the student and curriculum outcomes; and should allow for collaboration and interaction of the participants (p. 8). In addition, suggestions from NAEYC (1993), posited that any type of education, training, or technical assistance should entail the use of best practices. These practices should be: (a) evidence-based, (b) responsive to each person's unique background, (c) utilize principles in alignment with adult learning, (d) provide for access to resources to assist with the implementation of the tasks, and (e) consider the abilities and needs of the young children and where they fall on the learning continuum. Likewise, individualizing each participant's training to ensure that it is aligned with their own professional development plan is also important. Shields, March & Adelman noted a direct correlation of the intensity and duration of a professional development activity with that of teacher change (as cited in Desimone, Porter, Garet, Yoon, & Birman, 2002). Still another concept that is consistently present in the literature was the need for the development of professional learning communities. The National Association of Elementary School Principals Foundation [NAESP] (2010) indicated the importance of

providing both resources and time for teachers to collaborate with one another, addressing issues such as the alignment of curriculum, examining student data, analyzing their progress, and creating innovative approaches in working with children and their families.

The Proposed Framework

Taking all of this information into consideration, a professional development program was designed to provide both an integrated and comprehensive approach in addressing the need of how to successfully implement the Mathematical Thinking Component of the 2011 Early Learning and Developmental Standards for Four-Year-Olds to a designated group of VPK teachers and directors within the targeted county in Florida. This will be implemented through a collaborative effort from the local college's Early Childhood Education department and the ELC-FV office's professional development staff. The rationale for selecting the Cognitive Development and General Knowledge domain; specifically the benchmark Mathematical Thinking Component was because of language that was added to the 2014 legislation indicating that more professional development, with an emphasis on mathematics, be offered to VPK teachers, based on generalizations from data secured from early VPK Assessment data.

It is necessary to stress that this professional development program will not serve as the definitive answer to the current situation within this county as it pertains to child care providers and their understanding of the standards; however, it can certainly serve as a foundation from which many other professional development opportunities may grow. Incorporating effective research strategies relating to quality professional development

components can act as a catalyst to explore additional ways to help VPK teachers and directors to fully comprehend and implement all components of the 2011 Early Learning and Developmental Standards for Four-Year-Olds. Furthermore, investigating the availability of funds and allocating appropriate supports to ensure that teachers are equipped with the necessary tools to instruct the children is equally important and can guarantee that the resources are well spent.

A variety of different forms of documentation will be used to document the process as a means of monitoring the students' participation in the professional development. These will include the following: attendance records, journal reflections, lesson plan submissions, individual professional development (IPDP) plans, attendance in communities of practice gatherings, and other items and deemed appropriate by workshop leaders.

Goals/Expected Outcomes

The following goals will be the focus of this program:

1. To support VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds/Mathematical Thinking Component in a developmentally appropriate manner through various coaching and technical assistance opportunities.
2. To help to instill in each teacher and director, a desire to continue and sustain individual professional growth opportunities for personal development; especially as it pertains to their understanding and use of the complete set of 2011 Early Learning and Developmental Standards for Four-Year-Olds.

The expected outcomes include the following:

1. VPK teachers and directors will attend required standards trainings and submit the necessary lesson plan documentation to his/her coach in accordance with predetermined deadlines.
2. With assistance from workshop leaders, teachers and directors, participants will create Individual Professional Development Plans (IPDP), based on their personal needs and strengths towards the successful implementation of the 2011 Early Learning Standards for Four-Year-Olds/Mathematical Thinking Component.
3. VPK teachers and directors will be able to successfully identify the various Benchmarks, Areas, and Standards associated within the 2011 Early Learning Standards for Four-Year-Olds/Mathematical Thinking Component and apply them appropriately when developing lesson plans.
4. VPK teachers and directors will adhere to predetermined deadlines as outlined by the program where they will be held accountable for the implementation of the standards within their own lesson plans in a developmentally appropriate manner.
5. VPK teachers and directors will produce weekly lesson plans demonstrating the use of the Mathematical Thinking Component of the standards within their daily practices.
6. VPK teachers and directors will demonstrate how to secure student VPK Assessment data and use it in accordance with the 2011 Early Learning

Standards/Mathematical Thinking Component to design lessons based on the needs of the students in his/her classroom.

7. Participating directors of VPK programs will work to create a CoP, community of practice within their own area to secure additional supports and camaraderie as it pertains to the implementation of the standards.
8. VPK teachers and directors will actively participate in the online support system designed to provide individualized consultation based on their specific needs as it pertains to the successful use of the 2011 Early Learning Standards for Four-Year-Olds.

Learning Objectives for Teachers

1. The VPK teacher and director will recognize and understand the various standards associated with the 2011 Early Learning and Developmental Standards for 4 Year-Olds; specifically, those associated with the Mathematical Thinking benchmark.
2. The VPK teacher and director will align math activities to the 2011 Early Learning and Developmental Standards for Four-Year-Olds - Mathematical Thinking benchmark to promote and support student-centered learning.
3. The VPK teacher and director will apply sound principles of developmentally appropriate strategies to the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds - Mathematical Thinking benchmark with fidelity.

4. The VPK teacher and director will be able to successfully navigate through online resources to assist them with planning and collaborating purposes.
5. The VPK teacher and Director will engage in reflective practices to help deepen their understanding of concepts studied.

Key Elements of the Design

The key elements of this design include a core set of concepts from which the training program will be developed. They include special consideration of the participants' learning characteristics and background knowledge and how they can be aligned with the delivery of the program. The program will also allow for ample time for the trainings to take place and for learners to digest and practice the skills, thus leading to mastery. Additionally, it will include the establishment of timelines to recognize the attainment of important benchmarks, noting particular accomplishments along the way. Another valuable element of the training will address the use of supportive resources that will ensure teachers and directors can access these components to assist them in meeting their goals.

Before even beginning the training, it is essential to have a solid understanding of the characteristics of those learners who will be the recipients of this instruction. Research from a joint project involving both the National Association of Child Care Resource & Referral Agencies (NACCRRA) and NAEYC (2011), indicated that in order for any training to be effective, it must be responsive to each learner's particular background, taking into account their own experiences, goals, abilities, current role, as well as their cultural and linguistic backgrounds. Failing to acknowledge the particular

needs of the audience directly defies the concept of differentiated instruction. This program will be aligned with the needs of the participants, based on surveys prior to the trainings to truly meet the requests of the members, while also in accordance with the goals of the professional development. Participants will be responsible for drafting their own IPDP (in conjunction with their supervisors) to support their personal goals and align them with the training. They will, in turn, receive continuing education units (CEUs) that can be used to renew their currently held credentials.

Additionally, adult learning principles will be applied to the teaching opportunities, following the suggestions of NACCRRA and NAEYC (2011), to include interactive activities, instructional supports such as handout and visual aids, and learning exercises to extend upon the concepts learned in class. As indicated by Kenner and Weinerman (2001), providing learning strategies that can be easily implemented back into their own workplace through the use of repetition can help the adult learner to fully embrace the information. Also, it is essential to take into account the characteristics of adult learners and base the learning strategies around these theories. Garet, Birman, Porter, Desimone, & Herman (1999) advised that providing for active learning opportunities, while focusing on content that is specific to their own classrooms, is certain to contribute to producing change in the practice of participating teachers. Furthermore, allowing opportunities for teachers to actively engage in practicing, discussing, and planning ways to use the new skills leads to a greater chance of change in the teacher's practice (Desimone et al., 2002).

The next fundamental element for this training entails the duration of the program. In accordance with findings from the Center for Public Education (2013), this professional development opportunity will take place over a two- to three-month period, allowing time for teachers to internalize the new strategies and concepts learned and work towards successful implementation in their own classrooms. Oftentimes, teachers are provided with a three-hour learning experience and then left to fend for themselves concerning the actual execution of the newly-learned strategies. Minimal, if any, assistance is provided to address the various issues the teachers may encounter along the way, thus leading to many potential programs being thrown by the wayside because of failure to provide the necessary supports. To further reinforce this concept, Joyce and Showers (1996) noted that teachers require roughly 20 separate practice opportunities to effectively master and implement a newly-learned skill. During this program, teachers and directors will be afforded many opportunities for practice and feedback so as to guarantee they can utilize the standards effectively on their own.

Workshops provided for teachers seldom offer supportive resources from which the teachers can draw upon to effectively implement the newly learned strategies. Elements of this professional development program will include a host of different supports to include technical assistance, mentoring, coaching, and online resources. NAEYC (1993) created a conceptual framework for professional development in the field of early childhood education and found that one of the essential elements must include opportunities to receive feedback based on observations from supportive personnel. Establishing communities of practice will also serve to reinforce the desired teacher

practices. One of the goals of these communities is the creation of a network from which teachers and directors can draw from as a means of support in their specific learning endeavors. Buysse & Wesley (2005) indicated that the communities of practice have been reported as being significant in sustaining the practices of early childhood teachers (as cited in Sheridan, Edwards, Marvin & Knoche, 2009, p. 385). These opportunities, both live and online, will be embedded within the program, allowing teachers to discuss and reflect upon their own practice and how they are working towards mastery in those targeted areas.

It is also important to consider research gathered on teachers and their belief systems. Based on studies cited by Ball and Cohen (1996), teachers tend to have a set of implicit beliefs about the subjects they teach, as well as their students, and their roles and responsibilities. This directly impact how they themselves behave in the classroom. Furthermore, as indicated by Fives and Gill (2014), the beliefs a teacher holds are unique to each individual, and are distinct from knowledge; with knowledge being verifiable, as opposed to beliefs which can be subjective. For example, Burgess (2001) reported significant interplay between teacher beliefs and teacher practice, citing specifically increased scores on measures of developmentally appropriate beliefs about how children think and learn resulting in enhanced classroom practice. It is important to understand that these belief systems can create barriers to effective change, and therefore, according to Raffo and Hall (2006) must be addressed. What is necessary from the outset is to explicitly identify, understand, and resolve differences between teachers' own

predispositions and examine why and how they inform classroom practice. This may be challenging but cannot be ignored.

As VPK teachers and directors embark on this journey, it is crucial that they receive the necessary supports along the way. Current practices of sharing knowledge to a group of teachers and then hoping they return to their classrooms eager to implement the new found knowledge (the spray and pray plan) can no longer be relied upon as a successful form of training. If real learning is to take place, there must be basic elements written into the design to ensure that appropriate supports are provided. Howes, Hamre and Pianta (2012), found that as teachers begin to develop these new practices, it is essential to allow for practice, feedback, and opportunities to reflect upon their current experiences. In 2008, Pianta, Mashburn, Downer, Hambre, and Justice noted that successful professional development in the field of early childhood often includes the coaching component, and that this correlates to greater changes in teacher behavior as compared to those without that component. Trivette , Dunst, Hamby and O’Herin (2009) defined coaching best when they described it as a cyclical process wherein the knowledge, skills, collegial relationships, and even the self-confidence are improved as a result of those ongoing coaching opportunities. The coaching element will serve as a vital role in the overall success of this plan.

Another area worth mentioning is the specific content of professional development opportunities. Many times conferences and workshops are offered with generic strategies applicable to various classroom situations. Although the intention is good, the carryover into many of the classrooms does not usually take place. As noted by

Desimone et al. (2002), trainings associated with specific practices are much more likely to be used by teachers receiving the training. Furthermore, Wesley & Buysse (as cited in Sheridan, 2009), indicated that professional development is initially perceived as a process in which the learner takes information in from outside sources to move towards the desired behavior. It is later that a shift occurs, progressing to a point in time when learners take responsibility for this new information and continuously apply it to their behaviors as well as their own professional development growth. Designing a program that will assist VPK teachers and directors in seeing the value of these Early Learning Standards and helping them to move beyond the simple skills level, to more of a motivational level, will lead to sustained and appropriate behaviors that benefit all children.

Within the past 10 years, research pertaining to professional development has also focused its attention on the issue of sustainability. Although many teachers may attend professional development opportunities, there has been little effort to help them in sustaining this practice when they return to their classrooms. Pianta (2006) reported findings indicating that most in-service trainings provide very little in the form of follow-up opportunities such as observed practices or specific feedback regarding these newly learned skills. Usually, the educational opportunity is delivered from one or two people considered experts in the field. The format is typically in lecture style, with minimal opportunities for exchanging of specific and necessary information. For some, according to Sheridan (2009), there may be short opportunities to rehearse various hypothetical situations, but they are usually limited and provide no real depth as it pertains to

successful implementation within their own classrooms. Additional synthesis of research suggests that in order to create true and lasting changes in teacher practices, the professional development must take place over a considerable duration of time (Snow & Lauer, 2005).

Design Format

The format for this professional development program will encompass strategies from a variety of successful professional development programs; some dealing directly with trainings for early childhood teachers, and some characteristics taken from trainings in other situations. Careful consideration was given to those approaches that aligned with the needs of the participants and the content being delivered. What follows is a summary of some of those components.

The use of cognitive coaching will be incorporated into this professional development program, as it helps to achieve many different goals. The coach's role is seen as an instructional guide and requires the development of a relationship of trust. Through the use of cognitive coaching, VPK teachers and directors will engage in a supportive process where they will learn explicit techniques as to how to implement the 2011 Early Learning Standards for Four-Year-Olds-Mathematical Thinking in their classrooms. This specific approach, according to Sparks, (1990), incorporates a professional dialogue between the teacher and the coach in which an end goal is discussed, and the coach guides the teacher in meeting this desired outcome through the element of coaching. According to Ray, (1998) the cognitive coaching approach is built on the elements of trust, learning, and autonomy, but also incorporates the use of

reflective teaching. Garmston, Linder, and Whitaker, (1993) referred to the process as one not based on evaluation. Rather, it involves a relationship where teachers support each other in a three-part process including a prelesson conference, a lesson observation, and a postlesson conference.

Another essential component that will be integrated into the professional development design will be the use of the internet. This online format will serve to support the content of the instruction in a host of different ways including the following: (a) provide occasions to have questions pertaining to assignments answered quickly, (b) opportunities to observe quality video lessons that are related to topics of study, (c) access to appropriate resources for lesson planning, and (d) create situations where teachers can exchange ideas and engage in problem-solving with their peers.

Furthermore, this hybrid format was selected for the professional development based on a review by Yoon, Duncan, Lee, Scarloss, and Shapley (2007). They found teachers preferred this design because of its easy access, supportive features, and the fact that it could be secured on their own schedules.

Additional research into the field of hybrid studies utilizing a specific mathematics and science curricula for prekindergarten teachers yielded data that two- to three-minute demonstration videos illustrating appropriate and quality teacher and child interactions, while implementing specific curriculum components, were deemed much more effective compared to a simple passage read from a textbook (Kinzie et al., 2014). Using this information, the professional development curriculum will embed mini video samplings to help teachers further internalize the concepts introduced in the trainings.

Also, posting videos and posing reflective questions can serve as opportunities for dialogue between teachers to help strengthen their learning of the concepts being studied.

Building upon the use of videos will be the inclusion of a modified approach of the model, Supporting the Transition from Arithmetic to Algebraic Reasoning (STAAR), created by Borko, Jacobs, Eiteljorg, & Pittman (2006). Although this program was established to assist teachers of middle school students, its basic framework can be modified for any professional development program. Based within the STAAR program is what the authors refer to as the Problem-Solving-Cycle (PSC). This includes a total of three trainings where teachers work collaboratively to design activities pertaining to a specific mathematical concept (Borko et al., 2006). Borko et al. (2006) shared that in this model, teachers present lessons while being videotaped, and then share these experiences with their peers, reflecting upon the successes as well as possible setbacks and opportunities for further growth. The teachers also discuss the responses of the children and whether the learning could be deemed successful or if modifications should be considered. The process becomes quite analytical and thought provoking, involving higher levels of reflection from all parties involved. This could serve as a beneficial activity for teachers when they are tasked with identifying the various mathematical benchmarks as well as planning and carrying out lessons associated with those standards.

Other strategies to be included in the creation of this professional development will include portions of the PACES training model. PACES consists of five components including **P**review, **A**ctivate prior **L**earning, **C**ontent, **E**xercise, and **S**ummary, based on Patton's work (as cited in Winton et al., 2007). Winton et al. (2007) shared their reasons

for selecting this format. They outlined how this design allows opportunities for learners to build upon their existing knowledge base, participate in situations where they can actually rehearse and practice these newly learned skills. They can reflect upon their successes and opportunities for future learning, all the while addressing their personal needs in accordance with their individual professional development plans. Specifically, as shared by Winton et al. (2007), the Preview component would briefly address the purpose of the training, setting the stage as to what the intended learner outcomes would be. The Activate portion enables the trainer to get a better idea of the current understandings of the attendees, thus aligning the content in accordance with this. The Content portion addresses the actual information that would be provided to the learners. The format would include discussions, small group work, and short presentations. The Exercise segment enables the participants to actually reflect upon this new information through role-playing situations, discussions, and small group work. The Summary section allows the students to, once again, reflect on what they learned, ask questions for clarification, and summarize the key ideas presented (Winton et al., 2007).

Additionally, components of the Participatory Adult Learning Strategy (PALS) model, as outlined by Trivette , Raab & Dunst (2012), will be embedded in the training. This model is based on the premise that the learner must be actively involved during all phases of the training in order to experience the most favorable benefits (Trivette, 2009). The approach has been found to be linked to an increase in the learner's understanding of, the use of, as well as the mastery of newly learned information and skills (Dunst & Trivette, 2009). There are three distinct features to this approach, which, when

combined, help bring about mastery of skills and concepts through multiple learning sessions, ensuring that appropriate and research-based practices are used as the foundation for the trainings. The first element is based upon the concept that information is introduced to the students in an incremental format, whereby the learner is constantly building upon and adding to their current understanding of the skill or topic (Dunst & Trivette, 2009). The second component involves the use of repeated learning opportunities to allow students time to practice the skill so as to create a solid foundation for a deeper and more solid understanding (Dunst & Trivette, 2009). The third and final component addresses the role trainers play in the larger context of the professional development program. They are seen as guides, helping to assist each of the students in mastery of the content based on observations performed on them, self-reflections from the students, or another predetermined form of assessment (Dunst & Trivette, 2009). The use of the PALS program, in conjunction with components of the PACES model will serve to utilize evidenced-based strategies for promoting concept and skill mastery for all learners.

Both the PACES and PALS models have received significant attention in the field of education and have been supported by studies and synthesis of research, thereby providing valuable strategies to the professional development community. Grounded in valid research pertaining to best practices and adult learning theories, both models contain important elements necessary for the promotion of learner understanding and targeted skill attainment. Head Start has relied on the PALS model in several professional development trainings, reporting success in areas such as an increase in the

use of specific and appropriate teaching practices, resulting in a decrease in child behavioral instances and an increase in language outcomes (Trivette, 2009). In their research into the use of the PALS design, Trivette et al. (2009) reported successful outcomes, including an increase in the knowledge, attitudes, skills, and even self-efficacy beliefs of those receiving the training.

Significance of the Program Design

The significance of this program design is that it will take into account the various elements of successful professional development plans, while providing the delivery of instruction in a supportive learning environment. Based on an extensive literature review, results have indicated that the reliance on training alone is insufficient in the transfer of skills to actual implementation, and that additional supports are necessary for those behaviors to become practiced on a daily basis (Sheridan et al., 2009). Though there remains a need for further research in this area, the current findings have been embedded into a professional development training specifically designed for VPK teachers and directors. Using this model, in conjunction with the targeted agencies and personnel, should result in a decrease in centers receiving a Provider on Probation status within the targeted county. Providers will have the opportunity to participate in an extended training program where they will receive assistance in how to successfully deliver a curriculum based on the 2011 Early Learning Standards for Four-Year-Olds; specifically the Mathematical component. By creating rich and developmentally appropriate lessons aligned with the 2011 Early Learning Standards for Four-Year-Olds,

children will receive a quality educational experience each day. This will lead to higher scores on the Florida VPK Assessment.

By incorporating these specific strategies above into a comprehensive professional development program, VPK teachers and directors will receive continuous support, provided to them in small, scaffolded, individualized, and attainable steps to ensure mastery of the content. Utilizing provisions including the mentoring and coaching opportunities, as well as the technical assistance and online resources, this program will continuously monitor the recipients to see that they experience success in their own work environments. Instruction will be delivered in accordance with their current level of understanding, building upon this while providing multiple opportunities for practice to strengthen their level of understanding.

To effectively determine the needs for this program design, a broad review of literature was conducted, delving into practices deemed successful for those working in the field of early childhood education. Because this population has unique characteristics, it cannot be assumed that the general professional development approaches would be appropriate and beneficial to this targeted population. Additionally, informal interviews were conducted with both lead VPK teachers and directors who currently provide VPK services to children within the targeted county. Those interviewed represented both POP and non-POP centers in an attempt to secure a balanced view of the training and support services they received pertaining to the Florida 2011 Early Learning Standards for Four-Year-Olds. Further data were secured by employees from the ELC-FV and the VPK Regional Facilitator for the targeted area.

Expertise Required to Achieve Outcomes

In order to effectively meet the desired outcomes of this professional development program, it is necessary to ensure that all members of the program are equipped with the essential tools so as to serve the recipients accordingly. The trainers need to have a working knowledge of the intricacies of the program, with special attention to the specific training components, particularly the PACES and PALS components and needs of adult learners. Additionally, all members of the team need to have a solid understanding of the 2011 Early Learning Standards for Four-Year-Olds, with precise understandings of the various components, standards, and benchmarks. Furthermore, they need to be well-versed in how to embed these standards into appropriate lesson plans for VPK children. Coaches and those offering technical assistance to the teachers shall be required to have specific training in effective coaching strategies, with particular attention to VPK teachers and directors. What's more, all staff must be versed in the technology tools used to communicate and support the VPK teachers and directors. This will include the online platform for course work and the resources available to the students for additional supports.

Timeline

To effectively and efficiently design this professional development program, a timeline of three to four months has been determined to be the most appropriate and realistic. This takes into consideration the necessary research and time required to develop a curriculum of this magnitude. This professional development program will address each of the six areas within the Mathematical Component of the 2011 Early

Learning Standards for Four-Year-Olds with appropriate attention given to each to allow for adequate time to practice and internalize the concepts. Furthermore, the content will be divided into manageable subsets of learning with appropriate supports and opportunities for scaffolding to ensure successful attainment of the content. Following is an outline of the framework for the curriculum plan.

- One training for each Mathematical Area (six total) to fully understand the standards and benchmarks and all that they entail;
- Assess their understanding before and after each training;
- Develop their own action steps to create lessons, etc. (taking responsibility for their own learning);
- Homework to embed the domain into their lesson planning;
- VPK teachers and directors can access resources online such as templates, and review of training and videos for sample lessons to help reinforce concepts introduced earlier;
- VPK teachers and directors must submit lesson plan to instructor for feedback;
- Prepare for site visit with mentor/coach: discuss lesson plan and any barriers to including the domain in planning;
- Reflective practice--participants must journal as to what they found to be valuable, what they gained from experience;
- Post on discussion board in response to question;

- Group meeting to share ideas;
- Repeat process for next mathematical area.

Documentation of Process

This process will be documented using a variety of formats. These will include, but not be limited to, workshop sign-in sheets, reflection journals, lesson plan submissions, coaching logs, online discussion posts, group meeting attendance, and documented calls or emails for additional supports.

Plan for Collaboration

Collaboration serves as a critical component when striving to implement an effective professional development program. It requires working with various teachers, centers, and agencies to ensure that everyone is in agreement with regard to the expectations of their roles. Through the use of a check-in system, those responsible for various tasks will be required to submit a very brief, weekly report indicating their accomplishments. For the participants in the training, this would involve the acknowledgement of tasks completed for the week, whether it is attendance at a workshop, or completion of a homework assignment. This would be submitted to the trainers of the workshops. The trainers would be responsible for submitting a brief report as well, noting the accomplishment of their own assigned tasks, including plans for any modifications to the existing training outline if deemed necessary. This would be submitted to the project manager. The coaches and mentors would also be required to submit a brief report,

outlining the tasks for the week, the contacts with teachers, and their consulting notes.

This documentation would be submitted to both the trainer and the project manager.

CHAPTER 2 DEFINITION OF PROBLEM

Introduction

There has been a 17.5% increase in the number of VPK centers within the targeted county over the past four years being placed on probation due to low readiness scores. Thus, the problem this dissertation in practice addressed is the lack of a comprehensive professional development program supportive of VPK teachers in effectively implementing the 2011 Early Learning and Developmental Standards for Four-Year-Olds. This has resulted in a lack of use of developmentally appropriate ways to increase the academic achievement of students and to decrease the number of centers placed on probation (Readiness Rate, 2014). Through the design and implementation of a suitable professional development program that is aligned with the needs of VPK teachers, including the necessary support services to ensure that they will have continued assistance in this area, one will see an increase in those centers that are able to effectively implement the 2011 Early Learning and Development Standards for Four-Year Olds, and there should be a decrease in the number of VPK centers within the targeted county on probation due to low readiness scores.

As referenced earlier, those teaching in the VPK program are required to take part in certain mandated trainings, one of which is the 2011 Early Learning and Developmental Standards for Four-Year-Olds. The intent of my plan is to design a professional development program that will assist VPK teachers in the implementation of the 2011 Early Learning and Developmental Standards for 4 –Year Olds; specifically, the Cognitive and General Knowledge/ Mathematical Thinking Component within their daily

lesson plans. I specifically chose the Mathematical Thinking Component for several reasons. First, for years, emphasis has been heavy on reading, and teachers have had little in the way of professional development as it pertains to mathematics instruction. Additionally, language was added to the 2014 legislation asking for more professional development in the area of mathematics. I thought it would be a refreshing change and an opportunity for teachers to experiment with hands-on learning materials to further reinforce the concepts. Second, is the concrete nature of mathematics and the limited number of abstract concepts compared to those involved in reading. Third, I chose this content area because it has often been stigmatized, with many sharing their negative elementary, middle, high school experiences. I believed it was important to consider the views and opinions teachers brought to the subject matter and to explore if those beliefs had any impact on how they approached and taught the content to their students. This is one more area that is important to take under advisement when providing a comprehensive professional development program for teachers. Failure to take into account their views and beliefs as they pertain to the topic would be a major oversight and might even undermine the entire goal.

Significance

To date, VPK teachers in the state of Florida have only been provided with a three-hour overview training of the 2011 Early Learning and Developmental Standards for Four-Year-Olds. This basic instruction introduces the participants to the history of the standards as well as how to help teachers of four-year olds use the standards effectively. There are no additional support trainings provided to the teachers or directors

on implementation of the standards. This leaves many to feel isolated and uncertain as to how to effectively put into practice the guidelines within their own classrooms. As noted in earlier, VPK teachers who were interviewed expressed frustration over the lack of supports in the area of implementation of the 2011 Early Learning & Developmental Standards for Four-Year Olds. With little to no contact from the Office of Early Learning, and minimal support from their local and understaffed Early Learning Coalition, VPK providers are often isolated and left to fend for themselves. They often resort to the internet and other providers for any ideas as to how to effectively embed the standards into their lessons. Their goal was to ensure that students met the kindergarten entry criteria. This, in turn, raised their readiness rate to that of a passing score and avoids the stigma that comes with being a provider on probation.

Data generated from informal interviews conducted with VPK teachers and directors indicated that, despite the three-hour training, interviewees were struggling with ways to effectively implement the 2011 Early Learning & Developmental Standards for Four-Year Olds. With no follow-up and minimal support services offered from the ELC, many shared that they felt isolated and uncertain as to how they could embed the standards within their daily lesson plans to meet the needs of their students. Data gathered in the interviews revealed information regarding teachers' feelings and levels of comfort in regard to their teaching and mathematics in general. One statistic indicated that 67% of teachers' lesson plans were monitored by the directors at their center (C. Twyman, personal communication, May 13, 2015). This value alone sends an unsettling message to those who monitor the centers. If it is the teachers and directors who are

having a hard time understanding the standards, and it is these standards that serve as the foundation for the lesson plans, it is essential that all involved have a better understanding of the standards and serve as mentors for others in their centers. Furthermore, 75% of those surveyed shared that their instructional practices were also monitored by the director on site. However, it was also noted that the exchanges that take place during these events are often brief and woefully lacking in any type of quality interactions where the parties involved could question, secure clarification, and extend upon what they observed, whether it be a lesson plan format or in the actual classroom presentation (C. Twyman, personal communication May 13, 2015). Additionally, it was discovered that directors and teachers are not afforded extended occasions to spend time planning and collaborating when planning lessons for VPK students.

This information further reinforced the need for professional development opportunities where centers could participate in learning opportunities such as communities of practice (CoPs) or critical friends groups (CFGs) with all participants in the center working towards a common goal. In this particular case, a CoP could be implemented to help practitioners to better understand how to effectively embed the 2011 Early Learning & Developmental Standards for Four-Year-Olds within their daily lesson plans. For many in these situations, according to Gulamhussein (2013), team members basically become a support group for one another, coaching each member through the various strategies, providing supportive feedback, and assisting with the implementation. The teachers essentially repeat these cycles over and over again in a non-threatening

atmosphere until they gain mastery, usually customizing their plans along the way, to meet the needs of their particular students, as shared by Gulamhussein (2013).

Resolving the Problem of Practice

The intent of the researcher, in this dissertation in practice, is to plan for the provision of meaningful and appropriate trainings for VPK teachers and directors with the ultimate goal of their understanding and successfully implementing the 2011 Early Learning and Developmental Standards for Four-Year Olds within their own centers and classrooms. This will be accomplished by utilizing the latest research alongside professional development opportunities specifically focused on the needs of the participants. In order to meet this massive goal, it became necessary to narrow the effort and focus on the original goal of understanding all elements of the standards to addressing just one component of the 2011 Early Learning & Developmental Standards for Four-Year-Olds. My belief was that with an understanding of one element, directors and teachers could use newly acquired skills in applying the standards to other content areas in a successful manner.

Based on the current research, the particular component chosen for the professional development topic was Mathematical Thinking. This is the first section that falls under the Cognitive Development and General Knowledge area of the standards. It essentially refers to the study of quantities and their relationships and involves the following six different areas where four-year olds are required to exhibit their skills.

- Number Sense: the ability to count and construct sets of objects; to determine which set is equal, more, or less.
- Number and Operations: manipulating sets of numbers; combining and taking away from.
- Patterns and Seriation: recognizing and creating patterns and ordering objects in a series.
- Geometry: recognizing, manipulating, and comparing two-dimensional shapes; exploring symmetry.
- Spatial Relations: positional words used to describe a child's world (language).
- Measurement: comparing quantities, using length, weight, and height.
(Office of Early Learning, 2015, p. 129-182)

It is important to mention that although this framework will address the topic of Mathematical Thinking, it can very easily be applied to the other domains addressed within the 2011 Early Learning and Developmental Standards for Four-Year-Olds.

In recent years the importance of mathematics in early childhood education has garnered great attention (Duncan et al., 2007). In 2009, Cross, Woods, and Schweingruber concluded that young children were quite capable of learning mathematics in the preschool years, but they questioned whether or not the teachers of these children shared in this belief. Citing situations where children were not exposed to appropriate mathematical learning opportunities, the committee researched this topic further. They discovered that many early childhood settings were woefully lacking in

providing appropriate and quality mathematics instruction as compared to that of literacy (Cross et al., 2009). Cross et al. noted that current mathematics instruction “reflects a lack of attention to mathematics throughout the childhood education system, including standards, curriculum, instruction, and the preparation and training of the teaching workforce” (p. 2).

As further endorsement of the need, a joint statement between the National Council of Teachers of Mathematics (NCTM), and the National Association for the Education of Young Children (NAEYC) was issued, stating that children ages three to six years of age should in fact participate in high-quality mathematics instruction that is both developmentally appropriate as well as challenging (Clements, Copple & Hyson, 2002). The goal for all teachers of young children is to help develop a positive attitude as well as gain a strong foundation in the area of mathematics and to ensure that the children continue to meet the proficiency standards in this area and are able to compete against students from other countries.

With the content of the professional development established, it was necessary to look at other pertinent issues that were worthy of consideration when designing a professional development program. One such area was the beliefs that teachers and directors hold as they pertain to teaching young children mathematics and their ability to learn mathematics. Also worth exploring was the confidence level of those teaching mathematics to young children. Often times, teachers will share their personal experiences, (either positive or negative) when taking a mathematics course, and this can play a critical role in how they approach the teaching of mathematics to the children in

their own classrooms. Extensive work done by Clements, Sarama & DiBiase (2004), indicated that the performance of young children as it relates to their ability in the area of mathematics was also related to their own teachers' proficiency in this area. Here Clements et al. (2004) stated, "Only until we can broaden our understanding of the teachers' perspectives as it pertains to the teaching of early mathematics can we truly support the professional development needs of the teachers" (p. 9).

The Survey

In order to effectively meet the needs of the recipients participating in this professional development endeavor, it was essential to gather the views of the concerned teachers and directors. Thus, directors and VPK teachers were surveyed to garner valuable information pertaining to their understanding of the standards as well as their personal beliefs and level of confidence pertaining to the teaching of mathematics.

Chen and McCray's (2013) Early Mathematics Belief and Confidence Survey was used to survey the directors and teachers. Using this survey data, the researcher was able to secure valuable insight into the mindsets of the targeted VPK teachers. Specifically, the survey helped to focus on three particular areas: (a) VPK teachers' beliefs about their students and their ability to learn mathematics; (b) VPK teachers' level of confidence in their ability to help their VPK students to learn mathematics; and (c) VPK teachers' confidence in their personal mathematic abilities.

The survey presented first person statements in which the VPK teacher or director would be required to respond using a five-point Likert scale to indicate their level of disagreement or agreement, (i.e., strongly disagree, disagree, neither agree or disagree,

agree, and strongly agree). A sample question read as follows: “Most children in my class are very interested in learning mathematics.”

This confidential survey was delivered electronically via Qualtrics to targeted VPK teachers and directors who agreed to take part in the study. The survey was distributed to 35 participants in late February 2016. Of the 34 respondents, 20 were currently VPK teachers or had been VPK teachers, directors, and providers on probation within the last two years.

Analysis of Survey Data

The survey contained a total of 29 questions as they related to teachers and their confidence and beliefs about teaching mathematics to prekindergarten children. Each area provided valuable information that was used for the professional development component of this dissertation in practice.

Teacher Beliefs about Preschoolers and Mathematics

The opening question for the first prompt was as follows:

“Most children in my class_____.” requiring the teachers to then respond to the eight proceeding prompts using the 5-point Likert scale.

- Enter preschool with little math knowledge
- Have the cognitive abilities to learn mathematics
- Should be helped to learn math in preschool
- Are very interested in learning mathematics
- Need to learn mathematics in preschool to be ready for kindergarten

- Learn a great deal about mathematics through their everyday activities
- Need structured preschool mathematics instruction
- Should be helped to learn mathematics using a published mathematics curriculum

Figure 2 contains the responses of staff regarding their beliefs about preschoolers and mathematics.

Most Children in My Class:

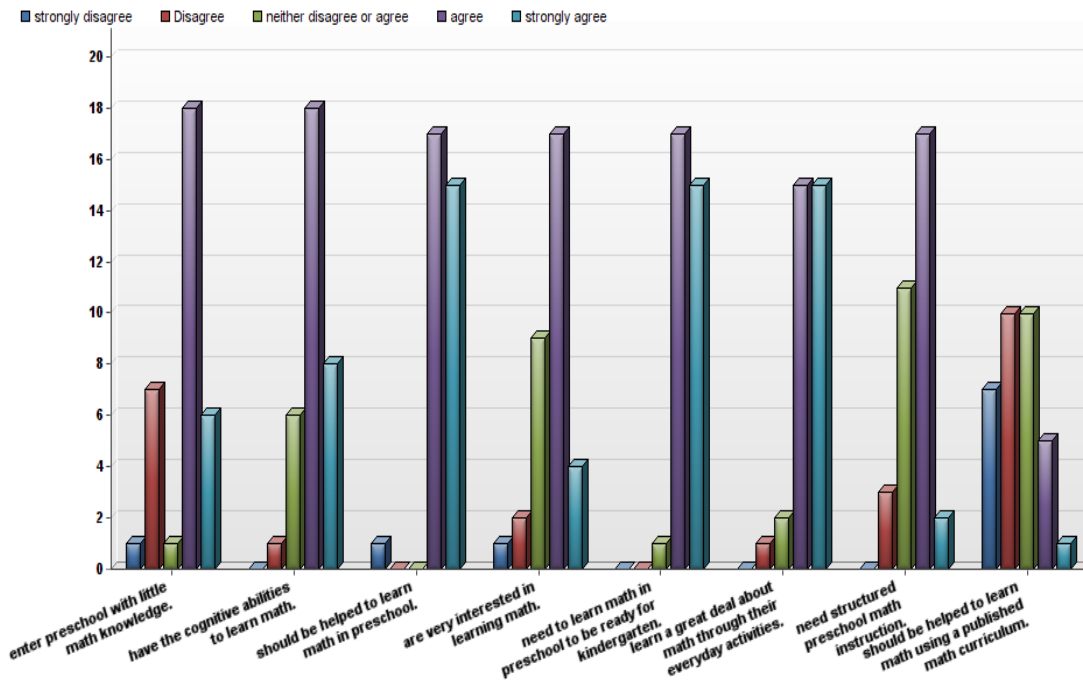


Figure 2. Teacher beliefs about pre-school and mathematics

Results of the survey indicated that a majority of the teachers believed that early mathematics education was appropriate for VPK children, and 79% of the teachers

signified that the children had the intellectual abilities to learn mathematics. An overwhelming 94% shared that the children need to learn mathematics in preschool to be ready for kindergarten. When presented with the question, “How do preschoolers learn mathematics?” a vast 91% indicated that children learn many mathematical concepts through everyday activities. Only 58% believed that preschoolers required a structured mathematics program, and only 18% favored the use of a published mathematics curriculum to assist with this endeavor.

Teacher Confidence in Helping Preschoolers Learn Mathematics

The second statement read, “I am confident in my knowledge of

_____.”

Once again, this required the teachers to respond to the five previously stated prompts using the 5-point Likert scale.

- What children in my classroom know about mathematics when they enter preschool
- Reasonable mathematics goals for preschoolers
- The best practices and strategies for helping preschoolers learn mathematics
- Local or national standards for preschoolers
- The best way to assess children’s mathematical knowledge and understanding throughout the year

Figure 3 contains the responses of staff regarding their confidence in helping preschoolers learn mathematics.

I am Confident in My Knowledge of:

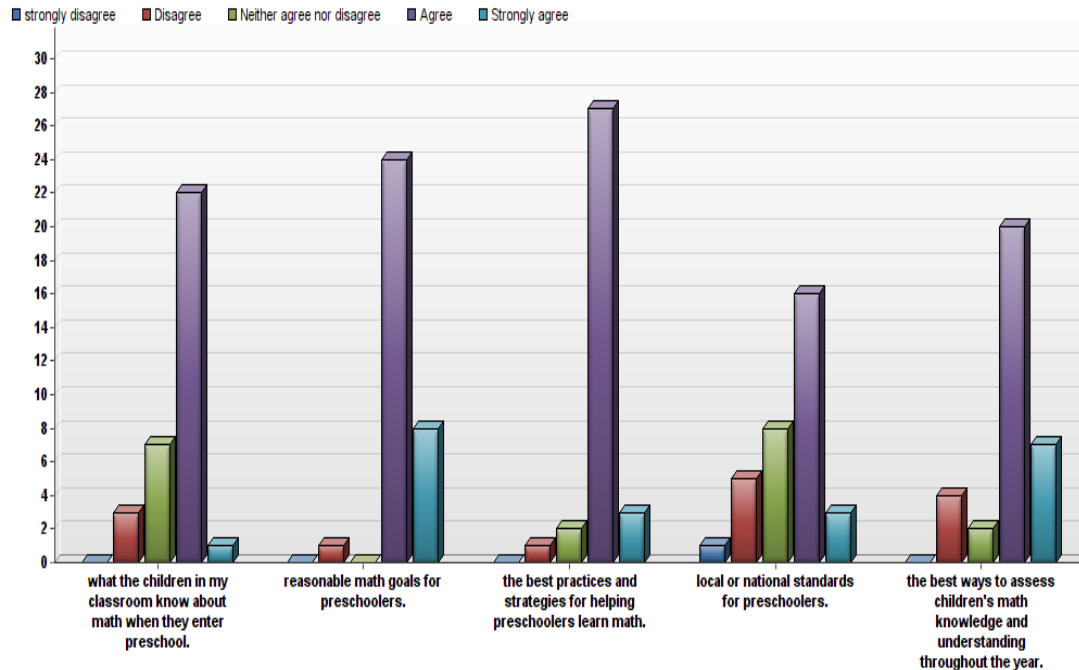


Figure 3. Teacher confidence in their mathematics knowledge

This portion of the survey delved specifically into the teachers' levels of confidence in their own personal knowledge of what it entails to teach mathematics to preschool children as well as their personal level of confidence in their ability to teach mathematics to children in this age group. Of the teachers surveyed, 97% indicated they were confident that they understood reasonable goals in the area of mathematics for their preschool children. Furthermore, 91% shared their confidence in their understanding of the best practices and strategies that could assist preschool children in helping them to learn mathematical concepts. Moreover, 82% reported that they were confident in their understanding of the best ways to assess children's mathematical knowledge and understanding throughout the year. Finally, just over half of the teachers surveyed

indicated they were confident in their knowledge of the local or national standards for preschoolers.

The next set of statements addressed the teachers' confidence in their ability in helping preschoolers learn mathematics. The opening statement began: "I am confident in my knowledge of _____" and required respondents to indicate their overall confidence in their ability to teach children in this age group. As shown in Figure 4, results from this section revealed that teachers reported an overall feeling of confidence (90% or higher) in all of the areas, including:

- Observe what preschoolers know about mathematics
- Incorporate mathematics learning into common preschool situations (such as art or dramatic play)
- Plan activities to help preschoolers learn mathematics
- Further preschoolers' math knowledge when they make spontaneous mathematical comments/discoveries
- Make sense of preschooler's confusions when they learn mathematics
- Translate assessment results into curriculum plans

I am Confident in My Ability to:

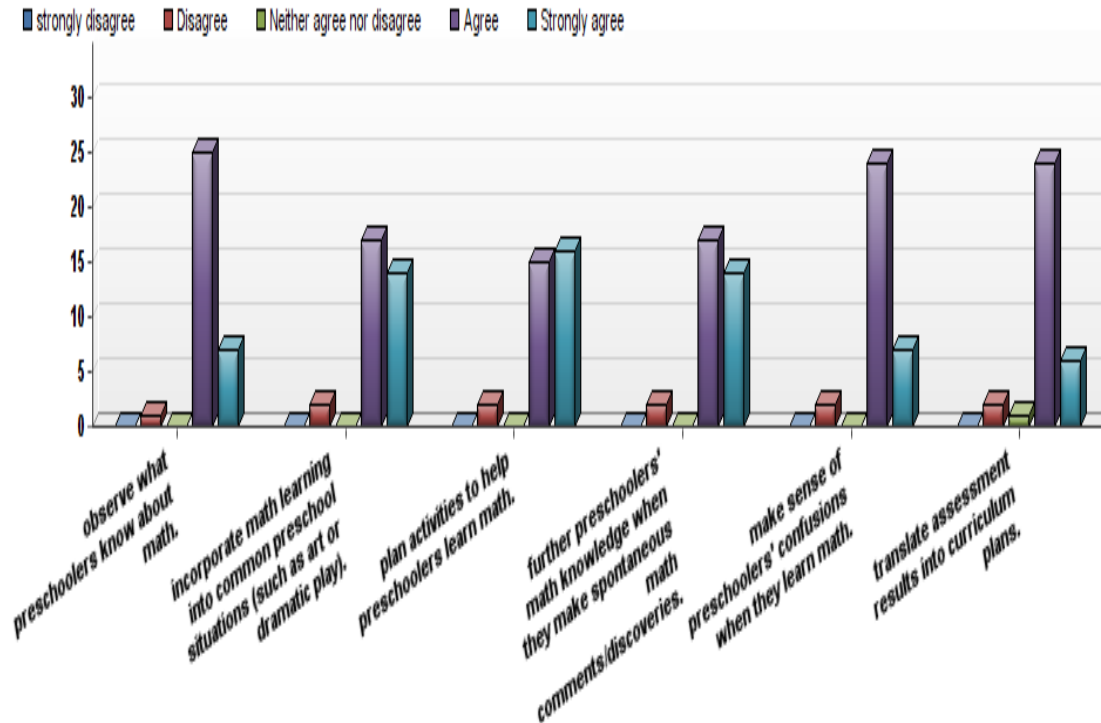


Figure 4. Teachers' confidence in specific mathematics abilities

The last section of the survey asked teachers to use the five-point Likert scale to rate their confidence as it was associated with their general as well as specific mathematical abilities. The nine statements were:

- Mathematics was one of my best subjects in school
- Just the word “mathematics” can make me feel nervous
- I’m not a “mathematical” person
- I like coming up with creating ways to solve mathematical problems
- I can easily convert fractions into percentages and decimal numbers

- I have a bad sense of direction
- I'm good at looking at numeric data and finding patterns
- I'm good at estimating how tall something is or the distance between two locations
- I can easily rotate objects in my mind

The results of the analysis are contained in Figure 5.

Math Was One of My Best Subjects in School

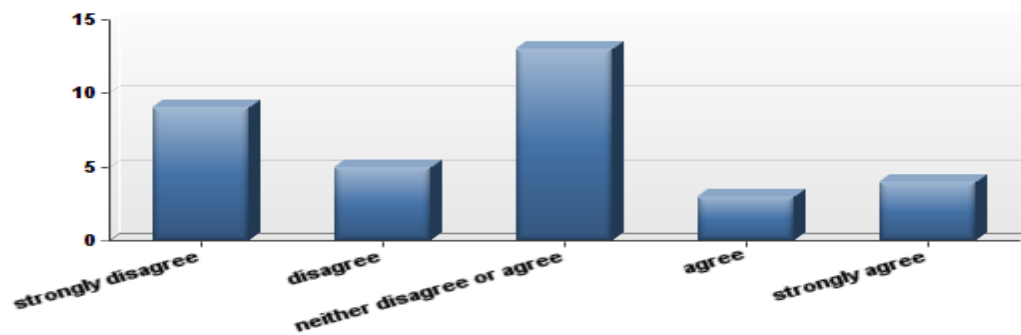


Figure 5. Teachers' confidence in general mathematics abilities

Of the 34 teachers who responded, 26% strongly disagreed, 15% disagreed, 38% neither agreed nor disagreed, 9% agreed, and 12% strongly agreed. These data signify that the teachers were rather neutral with regard to their personal experiences with mathematical instruction in school. This is valuable information that can be applied to the professional development component, as a teacher's personal views and experiences

pertaining to a subject area can have a direct impact on how this is delivered to her students.

Question six provided the statement: “Just the word ‘mathematics’ can make me feel nervous.” This also required the teachers to rate their response to the statement using the five-point Likert scale. Teachers’ responses are displayed in Figure 6.

Just the Word “Math” Can Make Me Feel Nervous



Figure 6. Teachers’ trepidation about mathematics

Of the teachers responding, 24% strongly disagreed, and 26% disagreed, with 21% indicating they neither agreed nor disagreed. Furthermore, 26% agreed, and only 1% strongly agreed with the statement. Once again, the data were positive as to teachers’ feelings about the subject of mathematics.

Question seven presented the statement: “I am not a ‘mathematical’ person,” inviting the teachers to rate their response accordingly using the 5-point Likert scale. Their responses are shown in Figure 7.

I Am Not a Mathematical Person

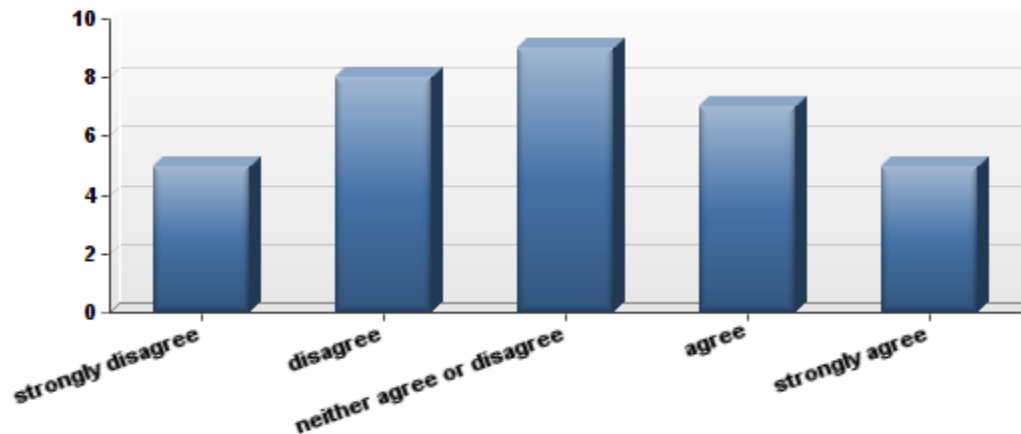


Figure 7. Teachers' aversion to mathematics

These results included the following: 15% of respondents strongly disagreed with the statement, 24% disagreed, 26% neither agreed nor disagreed, 21% agreed, and 15% strongly agreed, indicating teachers believed they were not “mathematical” persons. These figures present a different view when compared to the last two survey questions pertaining to personal experiences and beliefs with regard to the subject of mathematics. This information tends to devalue the previous questions and needs to be taken into consideration when planning future professional development opportunities. The initial response was positive concerning beliefs and levels of confidence regarding the subject of mathematics. This particular question, however, suggested that spending time during the initial portion of the training to examine personal mathematical experiences and abilities was necessary to promote feelings of adequacy among the teachers in regard to their overall feelings and abilities related to mathematics instruction.

The next series of questions and data relate to teachers' views regarding specific math abilities. Figure 8 contains teachers' responses regarding "I like coming up with creating ways to solve mathematical problems."

I Like Coming Up With Creating Ways to Solve Mathematical Problems

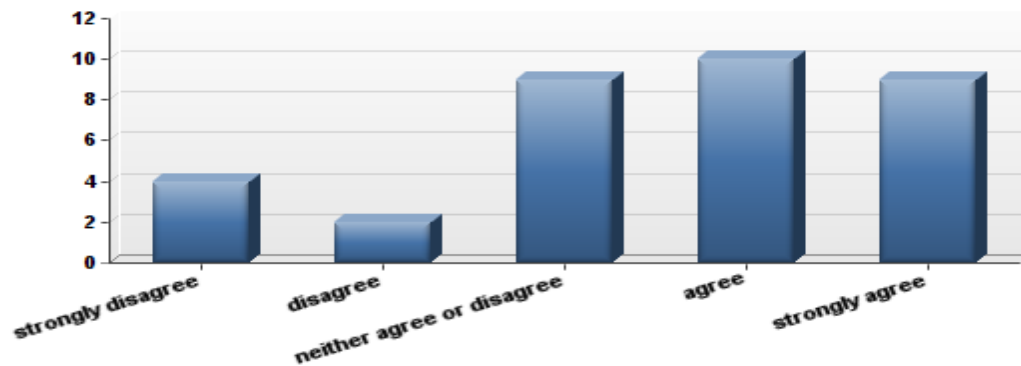


Figure 8. Teachers' willingness to find mathematics alternatives

Results of survey data revealed relatively positive responses. More than half of the teachers indicated either agreement or strong agreement with this statement. This showed a willingness and acceptance on the part of the teachers to find alternative ways to solve mathematical problems, thus possibly encouraging this behavior with their students as well.

I Can Easily Convert Fractions into Percentages and Decimal Numbers

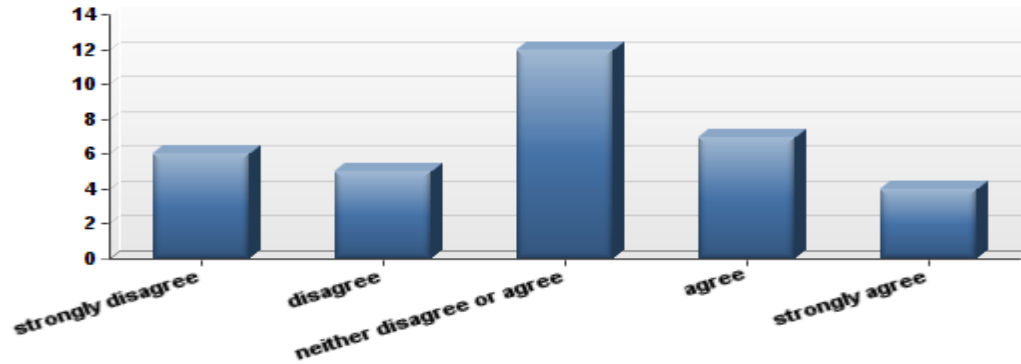


Figure 9. Teachers' ability to perform basic mathematics skills

This question sought to directly assess the teacher's ability to perform a basic mathematical skill when working with fractions and decimals. One third of those surveyed neither agreed nor disagreed with this statement.

Figures 10-13 display teachers' responses to the final five survey items. The remaining responses show close to an equal distribution of agreement and disagreement.

I Have a Bad Sense of Direction

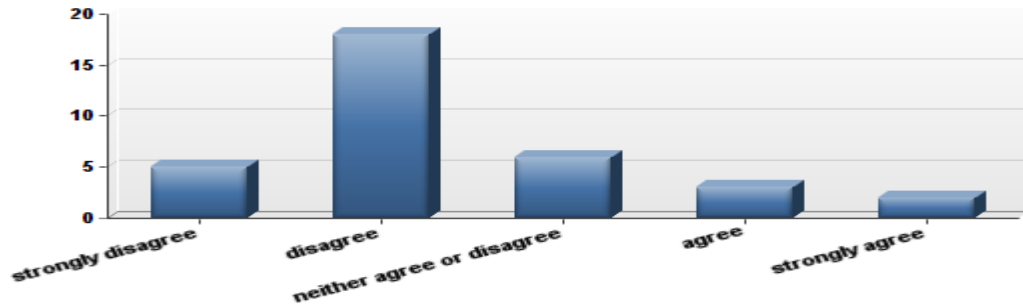


Figure 10. Teachers' sense of direction

I'm Good at Looking at Numeric Data and Finding Patterns

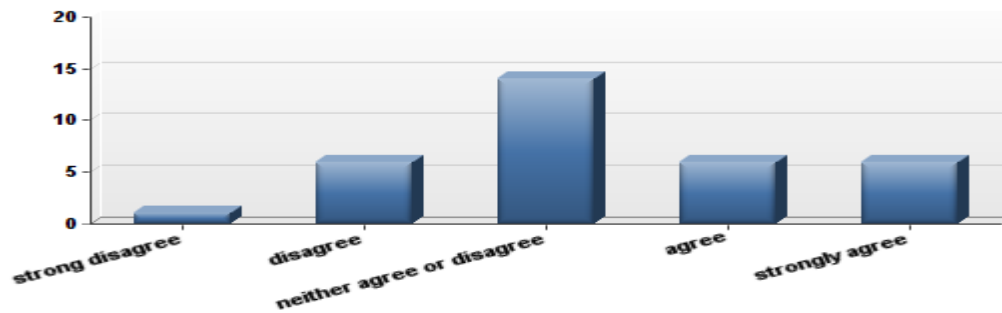


Figure 11. Teachers' skill with numeric data and finding patterns

I'm Good at Estimating How Tall Something Is or the Distance Between Two Locations

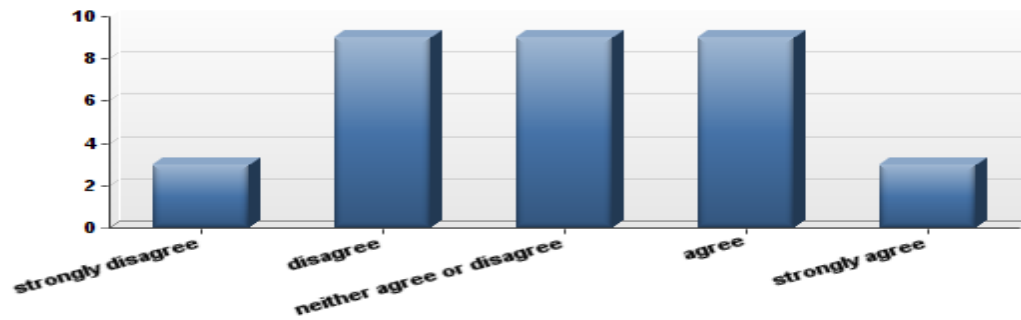


Figure 12. Teachers' skill in spatial estimation

I Can Easily Rotate Objects in My Mind

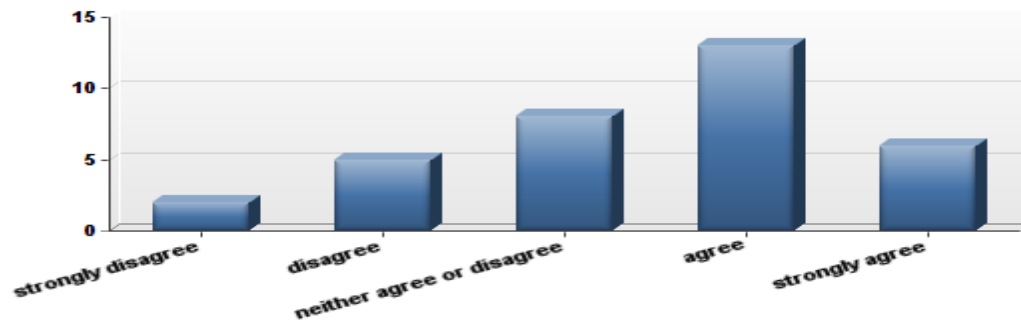


Figure 13. Teachers' comfort with rotating objects in their mind

With regard to particular mathematics abilities, more than half of those responding to the survey agreed that they were good at looking at numeric data and noting patterns. Close to three-fourths of teachers surveyed believed they had a competent sense of direction. Furthermore, teachers also indicated proficiency in their

ability to rotate objects in their mind as well as estimate the height of an object or the distance between two locations.

Key Findings

In reviewing the survey data, some basic needs were identified and taken into consideration when creating the professional development framework. As indicated in the topic of this dissertation, and further reinforced by survey data, there is a need for the participants to receive additional supports in the area of the 2011 Early Learning & Developmental Standards for Four-Year Olds; specifically, the Cognitive and General Knowledge-Mathematical Thinking Component. With only 58% expressing confidence in their knowledge of the standards, it is imperative that they receive additional trainings to support them in understanding the role that these standards play in their daily lesson plans. This can be accomplished via basic staff development workshops and coaching assistance along with the incorporation of CoPs where small portions of the standards can be addressed and reinforced each week to allow for internalization of the content. Mentors can be assigned to support this endeavor as well. All of these components will work together to achieve the final goal of having an understanding of the standards and the role they play in the daily lesson planning for the VPK children.

There is a surplus of research which portrays preschool teachers as either having an aversion to teaching mathematics or lacking the necessary skills or appropriate level of confidence to do so (Ginsburg, Lee, & Boyd, 2008). Furthermore, one can often find literature citing early childhood teachers' concerns with regard to the developmental appropriateness of mathematics instruction in the early years (Copley, 2004). Contrary to

these findings, the results of this survey revealed a different picture. An overwhelming number of teachers taking part in this survey shared that early mathematics instruction is not only developmentally appropriate but is also essential for the preschoolers to be successful upon entry into kindergarten. Additionally, the teachers also indicated that children have the capability to learn mathematics and are genuinely interested in finding out more about the subject. Furthermore, teachers expressed a level of confidence in their ability to set specific goals pertaining to mathematics and even plan mathematics activities accordingly. They expressed confidence in their ability to assess children in this area and believed they could easily make sense of children's confusion when learning mathematics and could confidently redirect them. In contrast, however, only 58% indicated they were confident in their understanding of the local or national standards for preschoolers.

The survey also addressed the teachers' personal experiences and beliefs pertaining to mathematics. As indicated earlier, many noted a certain level of confidence in their mathematical abilities concerning the performance of specific tasks, (e.g., finding patterns, converting fractions, and estimation). Additionally, data from the survey were positive concerning teachers' beliefs about preschoolers and mathematics. Interestingly, researchers have indicated the importance of both confidence and beliefs and how they are closely related to teachers' knowledge and even their classroom practice (Pajares, 1996). Moreover, as shared by Chen and McCray (2013), "Professional development experiences are always filtered through beliefs and affected by teachers' confidence (p. 12). Therefore, it would be worthwhile to address this and reinforce positive associations

to the content area. This would recognize teachers' strengths in their abilities to assist children in so many other areas. It would also boost their confidence and assist them in making any needed disconnect from previous negative mathematics experiences, refocusing on their ability to teach young children mathematics effectively.

In terms of professional development, data from the survey can be explored and built upon to help reinforce some of the basic information gleaned. For example, teachers surveyed already possessed a strong belief that the children within their care learned mathematics through general, everyday experiences. This provides a foundation to build upon and provides even more learning opportunities for them. An overwhelming 94% expressed confidence in their abilities to incorporate mathematics learning into common preschool situations (such as art or dramatic play). This provides a platform for professional development experiences arranged to permit teachers to take part in learning even more ways to embed these mathematical experiences into their everyday learning and thinking. Spending time exploring the concept of "mathematizing" would benefit the teachers and allow them to learn additional ways to embed mathematics concepts into their daily encounters.

Another area to be addressed within the professional development component is the area of assessment. A total of 82% of the teachers indicated they were confident in their knowledge of the best way to assess children's mathematics knowledge and understanding throughout the year. These findings present an opportunity to design additional professional development trainings tied into the 2011 Early Learning Developmental Standards for Four-Year-Olds and aligned with assessment opportunities

as well. In addition, because the VPK Assessment is linked directly to the standards, this will allow the teachers additional opportunities to learn to interpret the assessment data and use that data to provide remediation opportunities utilizing the standards. With the addition of the new assessment tool, Teaching Strategies Gold, teachers can also learn alternative formats for assessing students, while still incorporating the 2011 Early Learning & Developmental Standards for Four-Year Olds.

By evaluating and disaggregating the data, a framework will be designed that is specific to the needs of the practitioners for which it can serve. What follows is a comprehensive professional development program, supportive of VPK teachers in effectively implementing the 2011 Early Learning and Developmental Standards for Four-Year Olds in developmentally appropriate ways to increase the academic achievement of their students and to decrease the number of centers placed on probation.

CHAPTER 3 THE FRAMEWORK

The Problem of Practice

Because of a 17.5% increase in the number of voluntary prekindergarten (VPK) centers within the targeted county over the past four years being placed on probation due to low readiness scores, the problem this dissertation in practice will address is the lack of a comprehensive professional development program supportive of VPK teachers in effectively implementing the 2011 Early Learning and Developmental Standards for Four-Year-Olds in developmentally appropriate ways to increase the academic achievement of their students and to decrease the number of centers placed on probation (Readiness Rate, 2014). Through the design and implementation of a suitable professional development program that is aligned with the needs of VPK teachers; including the necessary support services to ensure that they will have continued assistance in this area, you will then see an increase in those centers who are able to effectively implement the 2011 Early Learning and Development Standards for Four-Year Olds, and thus see a decrease in the number of VPK centers within the targeted county on probation due to low readiness scores.

Significance

The significance of this program design is that it takes into account the various elements of successful professional development plans while providing the delivery of instruction in a supportive learning environment. Based on an extensive literature review, results have indicated that the reliance on training alone is insufficient in the

transferring of skills to actual implementation, and that additional supports are necessary for those behaviors to become practiced on a daily basis (Sheridan et al., 2009). Though there is still a need to secure further research in this area, the current findings have been embedded into a professional development training specifically designed for VPK teachers and directors. Using this model in conjunction with the targeted agencies and personnel should result in a decrease in centers receiving a Provider on Probation status within Volusia County. Providers will have the opportunity to participate in an extended training program where they will receive assistance in how to successfully deliver a curriculum based on the 2011 Early Learning Standards for Four-Year-Olds. By creating rich and developmentally appropriate lessons aligned with the 2011 Early Learning Standards for Four-Year-Olds, children will receive a quality educational experience each day. This, in turn, will lead to higher scores on the Florida VPK Assessment.

Incorporating the specific strategies outlined above into a comprehensive professional development program, VPK teachers and directors will receive continuous support, provided to them in small, scaffolded, individualized, and attainable steps to ensure mastery of the content. Utilizing provisions including the mentoring and coaching opportunities, as well as the technical assistance and online resources, this program will continuously monitor the recipients to see that they experience success in their own work environments. Instruction will be delivered in accordance with their current level of understanding, while providing for multiple opportunities for practice to strengthen their level of understanding.

To effectively determine the needs for this program design, an extensive review of literature was conducted, delving into practices deemed successful for those working in the field of early childhood education. Because this population has unique characteristics, it cannot be assumed that the general professional development approaches would be appropriate and beneficial to this targeted population. Additionally, informal interviews were conducted with both lead VPK teachers and directors who currently provide VPK services to children within Volusia County. Those interviewed represented both Providers on Probation (POP) and non-POP centers in an attempt to secure a balanced view of the training and support services they received pertaining to the Florida 2011 Early Learning Standards for Four-Year-Olds. Further data were secured by employees from the ELC-FV and the VPK Regional Facilitator for the Volusia area.

Resolving the Problem of Practice

It was the intent of the researcher to design a comprehensive professional development program for VPK teachers to support them in effectively implementing the 2011 Early Learning & Developmental Standards for Four-Year Olds through the use of research-based support in developmentally appropriate ways to increase the academic achievement of their students and to decrease the number of centers placed on probation. Through the use of effective trainings, designed in accordance with the needs of the teachers and delivered in research-based formats, teachers will be viewed as active participants. They will learn beside one another and take the lead in their learning. Mentors will be working next to them, guiding and modeling for them as to what constitutes effective lesson planning and how to use the standards accordingly.

Furthermore, one will see communities of practice, (CoP) established in nearby centers so that supports can be continued when certain personnel are no longer available, and teachers can take the lead in their own learning.

Once teachers have a firm understanding of the standards and ways they can effectively incorporate them into their daily lesson plans, they will be much more efficient in coordinating the use of their time; allowing them additional opportunities to spend time teaching their students. The result will be a deeper comprehension of the content being delivered to the children, with teachers expanding their understanding of the different concepts and exploring various teaching strategies. Moreover, it is likely that teachers will take the lead in other areas, operating as leaders in other trainings or even serving as mentors to others, having had the opportunity to strengthen their own understandings. They may also continue their own coursework, taking additional classes at the local college or even furthering their own education.

An important caveat worth repeating is that this professional development program cannot be viewed as the answer to all of the current issues faced in the early childhood community; however, it can serve as an innovative framework which can be built upon. By exploring grants and other funding opportunities, it would be interesting to see all of the meaningful ways to build upon this model and incorporate so many additional learning prospects.

The context for this problem of practice takes place in a county in Florida with a population of approximately 500,800 people. At the time of the study, there were approximately 229 child care centers housed within the county, some of which provided

the Voluntary Prekindergarten program that requires training for personnel on the 2011 Early Learning & Developmental Standards for Four-Year Olds. As previously noted, due to the lack of a comprehensive professional development program supportive of VPK teachers in effectively implementing the 2011 Early Learning and Developmental Standards for Four-Year-Olds, there is a need for a comprehensive professional development program that is aligned with the needs of the VPK teachers to assist in implementing the standards effectively and efficiently with the necessary support services in place to ensure that they can continue to do so independently.

Additionally, this professional development program will take place in the targeted county at the various child care centers of those participating VPK teachers as well as the local college and the area's Early Learning Coalition. The sites will vary depending on the classroom dates, the times of the meetings, and the coordination of the centers. Once the teachers register, the meetings will be established according to the location of the teachers to make it user-friendly. For example, if there are three centers registered on the west side and six centers on the east side, coordinators will plan accordingly so as to accommodate the needs of participants and to avoid excessive travel. The locations will be coordinated in cooperation with center directors as well so facilities can be utilized for after-hours training.

The purpose for holding many of the trainings at the centers is to accommodate the teachers because they are working at the centers, making it easy for them to remain there and have the trainers come to them. Additionally, other teachers who work nearby often do so until close. Trainings conducted at the centers at the close of the day will

accommodate their schedules, limiting their need to travel. This arrangement will also permit the teachers of other centers to visit another center, something that they seldom get a chance to do. This will afford them the opportunity to see other classrooms and exchange ideas.

There will be times when the local college and Early Learning Coalition will be used as a meeting location as well. This will be when the training necessitates that all teachers be present and that certain equipment be in place such as a computer, projector, and screen. The Coalition has resources such as curriculum planning tools and materials for larger groups where teachers can access them and use them to explore different materials to use when lesson planning necessitates. Both the college's Early Childhood Education department and the Coalition can serve as great resources for large groups and will serve as the central location when those meetings are required.

Goals of the Program:

What follows are the two major goals for this program:

1. To support VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year Olds/Mathematical Thinking Component in a developmentally appropriate manner through various coaching and technical assistance opportunities.
2. To help instill in each teacher and director, a desire to continue and sustain professional growth opportunities for personal development; especially as it pertains to their understanding and use of the complete set of the 2011 Early Learning and Developmental Standards for Four-Year.

Expected Outcomes

It's important to note that the domain of Cognitive Development and General Knowledge/Mathematical Thinking is referenced in this framework and only serves as an example. This can be easily applied to any other domain included within the Standards.

1. VPK teachers and directors will attend required standards trainings and submit the necessary lesson plan documentation to his/her coach in accordance with predetermined deadlines.
2. With assistance from workshop leaders, teachers and directors, participants will create personalized Individualized Professional Development Plans (IPDP), based on their personal needs and strengths towards the successful implementation of the 2011 Early Learning Standards for Four-Year Olds/Mathematical Thinking Component.
3. VPK teachers and directors will be able to successfully identify the various Benchmarks, Areas, and Standards associated within the 2011 Early Learning Standards for Four-Year Olds/Mathematical Thinking Component and apply them appropriately when developing lesson plans.
4. VPK teachers and directors will adhere to predetermined deadlines as outlined by the program where they will be held accountable for the implementation of the standards within their own lesson plans in a developmentally appropriate manner.

5. VPK teachers and directors will produce weekly lesson plans demonstrating the use of one area of the Mathematical Thinking Component of the standards within their daily practices.
6. VPK teachers and directors will demonstrate how to secure VPK Assessment data and use it in accordance with the 2011 Early Learning Standards/Mathematical Thinking Component to design lessons based on the needs of the students in his/her classroom.
7. Participating directors of VPK programs will work to create a Community of Practice, (CoP), within their own center to provide for additional supports and camaraderie as it pertains to the implementation of the standards.
8. VPK teachers and directors will actively participate in the online support system designed to provide individualized consultation based on their specific needs as it relates to the successful use of the 2011 Early Learning Standards for Four-Year Olds.

Key Elements of the Design:

The key elements of this design include a core set of concepts from which the training program will be developed. They include special consideration of the participants' learning characteristics and background knowledge and how they can be aligned with the delivery of the program. The program will also allow for ample time for the trainings to take place and for learners to digest and practice the skills, thus leading to mastery. Additionally, it will include the establishment of timelines to recognize the attainment of important benchmarks, noting particular accomplishments along the way.

Another valuable element of the training will address the use of supportive resources that will ensure teachers and directors can access these components to assist them in meeting their goals.

Before even beginning the training, it is essential to have a solid understanding of the characteristics of those learners who will be the recipients of this instruction. Research from a 2011 joint project involving both the National Association of Child Care Resource & Referral Agencies (NACCRRA) and the National Association for the Education of Young Children (NAEYC) indicated that in order for any training to be effective, it must be responsive to all learners' particular backgrounds, taking into account their own experiences, goals, abilities, current role, as well as their cultural and linguistic backgrounds. Failing to acknowledge the particular needs of the audience directly defies the concept of differentiated instruction. This program will be aligned with the needs of the participants, based on surveys shared prior to the trainings to truly meet the requests of the members, while also in accordance with the goals of the professional development. Participants will be responsible for drafting their own individual professional development plans (IPDPs), in conjunction with their supervisors, to support their personal goals and align them with the training. They will, in turn, receive continuing education units (CEUs) that can be used to renew their currently held credentials.

Additionally, adult learning principles will be applied to the teaching opportunities, following the suggestions of NACCRRA and NAEYC (2011), to include interactive activities, instructional supports such as handout and visual aids, and learning

exercises to extend upon the concepts learned in class. As indicated by Kenner and Weinerman (2001), providing learning strategies that can be easily implemented in their own workplaces through the use of repetition can help adult learners to fully embrace the information. Also, it is essential to take into account the characteristics of adult learners and base the learning strategies around these theories. As Garet et al. (1999) advised, providing for active learning opportunities while focusing on content that is specific to their own classrooms is certain to contribute to producing change in the practice of participating teachers. Furthermore, allowing opportunities for teachers to actively engage in practicing, discussing, and planning ways to use the new skills leads to a greater chance of change in the teacher's practice (Desimone et al., 2002).

The next fundamental element for this training entails the duration of the program. In accordance with findings from the Center for Public Education (2013), this professional development opportunity will take place over a two- to three-month period, allowing time for teachers to internalize the new strategies and concepts learned and work towards successful implementation in their own classrooms. Oftentimes, teachers are provided with a three-hour learning experience and then left to fend for themselves concerning the actual execution of the newly-learned strategies. Minimal, if any assistance is provided to address the various issues the teachers many encounter along the way, thus leading many potential programs being thrown by the wayside because of failure to provide the necessary supports. To further reinforce this concept, Joyce and Showers (as cited in Center of Public Education, 2013) indicated that it takes an average of approximately 20 separate practice occasions for a teacher to actually master a newly

learned strategy or skill. During this program, teachers and directors will be afforded many opportunities for practice and feedback so as to guarantee they can utilize the standards effectively on their own.

As mentioned earlier, workshops provided for teachers seldom offer supportive resources from which the teachers can draw upon to effectively implement the newly learned strategies. Elements of this professional development program will include a host of different supports to include technical assistance, mentoring, coaching, and online resources. NAEYC (1993) created a conceptual framework for professional development in the field of early childhood education and found that one of the essential elements must include opportunities to receive feedback based on observations from supportive personnel. Establishing communities of practice will also serve to reinforce the desired teacher practices. One of the goals of these communities is the creation of a network from which teachers and directors can draw from as a means of support in their specific learning endeavors. Wesley & Buysse (as cited in Sheridan et al., 2009) indicated that the communities of practice have been reported as being significant in sustaining the practices of early childhood teachers. These opportunities, both live and online, will be embedded within the program, allowing teachers to discuss and reflect upon their own practice and how they are working towards mastery in those targeted areas.

It is also important to consider research gathered on teachers and their belief systems. Based on studies cited by Ball and Cohen (1996), teachers tend to have a set of implicit beliefs about the subjects they teach, as well as their students, and their roles and responsibilities, which directly impact how they themselves behave in the classroom.

Furthermore, as indicated by Fives and Gill (2014), the beliefs a teacher holds are unique to each individual, and are distinct from knowledge; with knowledge being verifiable, as opposed to beliefs which can be subjective. For example, Burgess (2001) reported significant interplay between teacher beliefs and teacher practice, citing specifically increased scores on measures of developmentally appropriate beliefs about how children think and learn resulting in enhanced classroom practice. It's important to understand that these belief systems can create barriers to effective change, and therefore must be addressed according to Raffo and Hall (2006). What is necessary from the outset is to explicitly identify, understand, and resolve differences between teachers' own predispositions and examine why and how they inform classroom practice. This may be challenging but cannot be ignored.

As VPK teachers and directors embark on this journey, it is crucial that they receive the necessary supports along the way. Current practices of sharing knowledge to a group of teachers and then hoping they return to their classrooms eager to implement them (the spray and pray plan) can no longer be relied upon as a successful form of training. If real learning is to take place, there must be basic elements written into the design to ensure that appropriate supports are provided. Howes, Hamre and Pianta (2012), found that as teachers begin to develop these new practices, it is essential to allow for practice, feedback, and opportunities to reflect upon their current experiences. In 2008, Pianta, Mashburn, Downer, Hamre, and Justice noted that successful professional development in the field of early childhood often includes the coaching component, which correlates to greater changes in teacher behavior as compared to those without that

component. Trivette , Dunst, Hamby and O’Herin (2009) defined coaching best when they described it as a cyclical process wherein the knowledge, skills, collegial relationships, and even the self-confidence are improved as a result of those ongoing coaching opportunities. The coaching element will serve as a vital role in the overall success of this plan.

Another area of importance is the specific content of the professional development opportunities. Many times conferences and workshops are offered with generic strategies applicable to various classroom situations. While the intention is good, the carryover into many of the classrooms does not usually take place. Trainings associated with specific practices, according to Desimone et al. (2002), are much more likely to be used by teachers receiving the training. Furthermore, research from Helm and Wesley & Buysse, indicate that professional development is initially perceived as a process in which the learner takes information in from outside sources to move towards the desired behavior. It is later that a shift occurs, progressing to where the learner takes responsibility for this new information and continuously applies it to their behaviors as well as well as their own professional development growth (as cited in Sheridan, 2009). Designing a program that will assist VPK teachers and directors in seeing the value of these Early Learning Standards and helping them to move beyond the simple skills level, to more of a motivational level will lead to sustained and appropriate behaviors that benefit all children.

Sustainability

Within the past 10 years, research pertaining to professional development has also focused its attention on the issue of sustainability. Although many teachers may attend professional development opportunities, there has been little effort to help them to sustain this practice when they return to their classrooms. Pianta (2006) reported findings that indicated how most in-service trainings provide very little in the form of follow-up opportunities such as observed practices or specific feedback regarding these newly learned skills. Usually, the educational opportunity is delivered from one or two people considered experts in the field. The format is typically in lecture style, with minimal opportunities for exchanging of specific and necessary information. For some, according to Sheridan (2006), there may be short opportunities to rehearse various hypothetical situations, but they are usually limited and provide no real depth as it pertains to successful implementation within their own classrooms. Additional synthesis of research suggests that in order to create true and lasting changes in teacher practices, the professional development must take place over a considerable duration of time (Snow & Lauer, 2005, p.6)

Needs Assessment

Needs for this design were determined through two types of surveys. One was through an informal interview and the other was through an internet survey. Each instrument sought out participants' views pertaining to different topics; one in reference to their experiences with the 2011 Early Learning and Developmental Standards for Four-Year Olds, asking their understanding of the standards and if they were currently

implementing them with fidelity and the other delving into their beliefs and level of confidence about teaching mathematics to young children. Both tools provided a vast amount of information that could then be used in cooperation with other research and data to design an effective professional development program to meet the needs of the participants.

Elements of the Design

Pre-Assessment:

Prior to anyone starting the professional development program, they will be required to take part in a pre-assessment survey in which they will be assessed to see at what level their current understanding resides with regards to the 2011 Early Learning & Developmental Standards for Four-Year-Olds. This is a necessary component for the program, as many participants have entered into trainings only to find that the content is either too easy or exceeds their level of understanding. In an attempt to use the “Goldilocks” method, where the goal would be the “just right” fit, the pre-assessment will help to ensure that placement into the right cohort will ensure that the participant will feel as though his/her needs are being met accordingly.

Professional Development Sessions:

Professional development sessions will take place according to the location of the participant. All efforts will be made to find a location in close proximity to the participant’s current work so as to reduce the amount of travel. These trainings will be held after hours with opportunities for the participants to earn continuing education units

(CEUs) and possibly financial reimbursements as well. Additionally, the trainings will be provided by certified teachers in the content areas; either those on staff from the Early Learning Coalition or members of the local College's Early Childhood Early Education Department. These sessions will provide clear links between theory and practice and will be delivered in a coherent and systematic fashion. Gulamhussein (2013) stressed, in her professional development principles, that engagement in any type of training should not be passive, but instead should connect the participant so they can participate in an active role so as to make sense of this newly learned skill. Just as children learn best when they are actively engaged, this theory also holds true for teachers. Activities including discussions, modeling, role-playing, and even visits to other classrooms can help to further reinforce the concepts being studied. Furthermore, the professional development trainings will extend to as many as 40 hours in duration, to allow time for the teachers to effectively learn the new skills. This is also supported by research studies focusing on teacher professional development in which they found that the longer the duration of the program, the greater the outcome was for the participants (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Further, Corcoran, McVay, and Riordan (2003) also found that teachers who spent 80 or more hours on professional development were conspicuously more likely to utilize that teaching practice as compared to those teachers who spent less than 80 hours of training.

Mentoring and Coaching

Mentoring and coaching are also essential elements of a successful professional development program. It is imperative that teachers be supported during the

implementation stage to assist with any particular challenges they might be experiencing. This is the stage where participants are encouraged to apply what they have learned and reflect upon their practices. Individual or group coaching can take on many different forms, but the format is essentially the same. Practitioners meet the coaches, and they discuss what strategy will be implemented. The coach observes the practitioner's implementation, meet, and discuss following the activity. This sequence can be repeated several times until the person meets mastery. Studies, including work done by Showers (1984), have shown that coaching can be effective at changing both student achievement and teacher practice.

Also included in this stage is modeling. This approach serves as a highly effective method in helping teachers to understand a new skill. For example, hearing about a new strategy might encourage teachers to learn more about it. But to actually see a strategy in action, in a class with real children could be inspiring. With a mentor or coach to provide the modeling and supports necessary to help the teacher with the specific skills, the recipients now have an extra level of assistance that might be just what they need to take their learning to the next level. Cognitive coaching is yet another strategy based on the process of modeling where, according to Garmston et al. (1993), teachers work with a coach, essentially talking out loud about their teaching processes, helping to clarify them as awareness increases. The process often involves a preconference with the establishment of objectives, followed by an observation as well as a follow-up post lesson conference. The entire procedure helps teachers support one another and could be very effective in implementing the standards.

Communities of Practice

Communities of Practice (COPs) include regularly scheduled meetings where participants can convene and discuss ways to meet the needs of the students. The participants are usually people from the same child care center or community who have a vested interest in the issue at hand. They begin to start actively exploring ways to meet the present challenges, looking at current test scores or research or other artifacts and brainstorm ways to address the problem. This often leads to coming together and finding plausible solutions or techniques to address the issue(s) that participating teachers might try in their own classrooms. Each may attempt to work out the problem with this new strategy and then reconvene to discuss the results. This process is repeated over and over, usually modifying the strategies until some kind of workable solution is created.

It is through this cycle that the group is able to customize a plan of action that meets the needs of their unique problem. What also arises is a strong sense of collegiality and community, with the entire group working together as a team, often coaching one another along for the betterment of the group. As noted by Louis and Marks (1998) a positive relationship was found between student achievement and professional learning communities. Furthermore, Wiley, (2002) reported higher mathematics achievement in schools with high-performing professional learning communities.

Further Learning

Professional development is viewed as an ongoing process. In order for teachers to be life-long learners, one must essentially plant a seed and create a desire in them to want to learn more. This is why the framework model with its directional arrows was

created--to show that professional development is truly a never ending cycle. It is the hope that once a skill is completed, individuals will be interested in learning more about another skill and will continue the process.

Expertise Required to Achieve the Outcomes

In order to effectively meet the desired outcomes of this professional development program, it is necessary to ensure that all members of the program are equipped with the essential tools so as to serve the recipients accordingly. The facilitators of this professional development need to have a working knowledge of the intricacies of the program, with special attention to the specific training components; particularly the PACES and PALS components and needs of adult learners. Additionally, all members of the team need to have a solid understanding of the 2011 Early Learning Standards for Four-Year-Olds, with precise knowledge of the various components, standards, and benchmarks. Furthermore, they need to be well-versed in how to embed these standards into appropriate lesson plans for VPK children. Coaches and those offering technical assistance to the teachers shall be required to have specific training in effective coaching strategies, with particular attention to VPK teachers and directors. Additionally, all staff must be versed in the technology tools used to communicate and support the VPK teachers and directors. This will include the online platform for course work and the resources available to the students for additional supports.

Timeline

To effectively and efficiently design this professional development program, a timeline of three to four months has been determined to be the most appropriate and realistic; taking into consideration the necessary research and time required to develop a curriculum of this magnitude. This professional development program will address each of the six areas within the Mathematical Component of the 2011 Early Learning Standards for Four-Year-Olds, with appropriate attention given to each to allow for adequate time to practice and internalize the concepts. Furthermore, the content will be divided into manageable subsets of learning with appropriate supports and opportunities for scaffolding to ensure successful attainment of the content. Figure 14 contains a flowchart explaining the framework for the curriculum plan. The step-by-step process displayed in the flow chart is also elaborated.



Figure 14. Flowchart of framework for the curriculum plan.

- One professional development session for each Mathematical Area (six total) to fully understand the standards and benchmarks and all that they entail;
- Assess their understanding before and after each training;
- Develop their own action steps IPDP to create lessons, etc. (taking responsibility for their own learning);
- Homework to embed the domain into their lesson planning;
- VPK teachers and directors can access resources online such as templates, and review of training and videos for sample lessons to help reinforce concepts introduced earlier;
- VPK teachers and directors must submit lesson plans to instructor for feedback;
- Prepare for site visit with mentor/coach: discuss lesson plan and any barriers to including the domain in planning;
- Reflective practice – participant must journal as to what they found to be valuable – what they gained from experience;
- Post on discussion board in response to question;
- Group meeting to share ideas;
- Repeat process for next mathematical area.

Documentation of Process

This process will be documented using a variety of different formats including, but not limited to workshop sign-in sheets, reflection journals and lesson plan

submissions, coaching logs, online discussion posts, group meeting attendance, and documented calls or emails for additional supports.

Plan for Collaboration

Collaboration serves as a critical component when striving to implement an effective professional development program. It requires working with various teachers, centers, and agencies to ensure that everyone is on the same page with regards to the expectations of their roles. Through the use of a check-in system, those responsible for various tasks will be required to submit a very brief, weekly report indicating their accomplishments. For the participants in the training, this would involve the acknowledgement of tasks completed for the week, whether it is attendance at a workshop, or completion of a homework assignment. This would be submitted to the trainer of the workshop. The facilitators would be responsible for submitting a brief report as well. They would note the accomplishment of their own assigned tasks including plans for any modifications to the existing training outline if deemed necessary. This would be submitted to the project manager. The coaches and mentors would also be required to submit a brief report outlining the tasks for the week including contacts with teachers and their consulting notes. This would be submitted to both the trainer and the project manager.

Methods for Determining Attainment of Goals

Determination of the attainment of the goals for each teacher or director will be based on a completion of documents. The primary source will be the initial IPDP which was created at the onset of the program and serves as the framework for the individualized plan for each participant. Revisiting this plan and assessing each component for mastery will entail reviewing other artifacts including, but not limited to, observation notes from coaches pertaining to practices observed, journal reflections from each teacher, lesson plan examples, specific homework assignments, and participation in CoP groups as well as contributions to discussion boards.

Visual of Framework

Figure 14 provides a visual representation of the framework for this professional development endeavor (Bersin, n.d.). The components of the framework are discussed in the following paragraphs. They include (a) pre-assessment, (b) trainings, (c) mentoring and coaching, (d) communities of practice [CoP], and (e) further learning.



Note. Adapted with permission from high impact HR 2015: Delivering on the promise of talent-driven business value. *Influencer* by J. Bersin (n. d.). Retrieved from http://www.slideshare.net/jbersin/hihr-asia-13/40-Typical_HRBP_Development_Programy_A

Figure 15. Framework for Voluntary Prekindergarten (VPK) Professional Development

Pre-Assessment

Upon entry, participants are pre-assessed prior to the training so as to allow for the instruction to be based upon their specific needs. Too often teachers attend trainings where they receive information to which they have already been exposed or information beyond their understanding. Participants can be fully engaged and remain interested for the entire duration of the training if training is aligned to their particular needs.

Trainings

As the teachers and directors continue through their professional development endeavors, they will receive trainings delivered to them in a coherent and systematic fashion. Training will be based on the current research pertaining to effective research strategies.

Mentoring and Coaching

In conjunction with their coursework, teachers and directors will receive support from both mentors and coaches in various formats. The mentors and coaches can assist by modeling specific lesson planning strategies as well as carrying out entire lessons with VPK children, demonstrating appropriate techniques and protocols.

Communities of Practice (CoP)

Additionally, communities of practice (CoPs) will be established for all participants. These can easily be defined as groups of educators who are passionate about early childhood education and who plan to interact on a regular basis with the intention of working together to learn how to “do it better.” The CoPs will be created within the vicinity of early childhood centers to enable both teachers and directors to convene with ease. Thus, there may be several CoPs developing within one single county. Furthermore, additional plans might be made to bring together the CoPs at a later time for a larger meeting to share success stories and beneficial strategies.

Further Learning

Finally, the last arrow in the Framework schematic shows the professional development process leading back into the circle to reinforce the concept that learning is not simply confined to this one particular training opportunity. Rather, it is an ongoing pursuit to become a better teacher. This is probably one of the most important elements within the Framework, as continuation in the learning process is an essential characteristic of quality early childhood educators. Continuing to dedicate oneself to learning ensures that that each person's skills and knowledge are current and based on sound and developmentally appropriate practices. In order to be effective, teachers must truly never stop learning, but should always look for ways to better themselves.

CHAPTER 4 DISCUSSION AND SUMMARY

Introduction

The purpose of this dissertation in practice was to design and execute a suitable professional development program that would assist VPK teachers in the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds; specifically, the Cognitive and General Knowledge – Mathematical Thinking portion within their daily lesson plans. It is through these trainings and supports that the teachers and directors would learn valuable strategies and receive helpful services to effectively embed the standards within their daily lesson plans and accurately meet the needs of the students within their care. Once those practices are in place, one would see a variety of encouraging outcomes including lesson plans tied directly to the standards, positive teacher and student behaviors, an increase in the VPK Assessment scores, and an increase in the VPK and Provider readiness assessment scores.

This pilot study concentrated its efforts in one county, specifically those targeted child care centers within the central Florida area. This involved surveying a small sample of the designated population of preschool teachers and directors to gain insight into their understanding of the 2011 Early Learning and Developmental Standards for Four-Year-Olds/Mathematical Thinking Component. Specifically, the researcher wanted to determine the teachers' and directors' ability to comprehend and embed those standards into their daily lesson plans. Additionally, a comprehensive review of relevant literature pertaining to effective professional development strategies and early childhood educators was also conducted. The information gleaned from both processes led to the

development of a Framework designed to support prekindergarten teachers and directors in the successful implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds within their daily lesson plans and instruction.

Goals of the Framework

The purpose of the Framework was to provide prekindergarten teachers and directors with the necessary supports to effectively utilize the 2011 Early Learning and Developmental Standards for Four-Year-Olds/Mathematical Thinking Component as the focus for their instruction as well as to increase each center's VPK Provider Readiness score. In 2015, Gomez, Kagan, and Fox concluded that when designing any learning opportunities for early childhood teachers it is essential to "accommodate diverse needs, learning styles and teaching modalities" (p. 178). Taking this valuable research into consideration, the Framework that was created addressed the following goals:

- To support VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds - Mathematical Thinking Component in a developmentally appropriate manner through various coaching and technical assistance opportunities.
- To help instill in each teacher and director, a desire to continue and sustain professional growth opportunities for personal development; especially as it pertains to their understanding and use of the complete set of the 2011 Early Learning and Developmental Standards for Four-Year-Olds.

The desired outcome was to create a comprehensive professional development program that would assist teachers and directors in the understanding and successful implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds with fidelity. These standards outline the skills that four-year-olds should be able to perform by the end of their prekindergarten year. They serve as the foundation upon which all lesson planning and instruction are based. These standards, when executed appropriately within the classroom environment, enable teachers to set appropriate learning goals for the children. Additionally, the standards can assist both teachers and directors in understanding the specific sequence of development for each skill as well as critical factors that influence a child's development. The standards can assist teachers and directors in delivering instruction as well as creating both appropriate and stimulating learning environments for the children in their care, thus supporting them in meeting the readiness skills required upon entry into kindergarten.

Target Audience

The target audience for this pilot study included those VPK teachers and directors currently working in child care centers within the central Florida County. As indicated from survey data, it was the teachers who lacked a comprehensive professional development plan that would assist them in the effective implementation of the 2011 Early Learning & Developmental Standards for Four-Year-Olds. These teachers and directors are the individuals tasked with providing developmentally appropriate instruction to the children within their care. They are required to create and implement

daily lessons aligned with the standards in an effort to prepare their students for successful entry into the local school kindergartens.

There are a number of people who would benefit from this model. Most important would be the VPK teachers and directors who would receive the professional development opportunities. Classroom teachers are tasked with delivering instruction each day to those children entrusted to their care. They must take into consideration the individual learning styles of children, their interests, along with the curriculum standards that mandate which skills the children should be able to master prior to entering into kindergarten. Providing teachers with a comprehensive professional development program with ongoing supports would result in well-informed early childhood educators who can successfully deliver appropriate instruction to their students, who in turn can demonstrate mastery of those targeted readiness skills. Directors serve as key supports for teachers and are ultimately responsible for the delivery of the education in their centers. They serve as instructional leaders and are required to make certain that the teachers in their centers are delivering high quality instruction on a daily basis, utilizing the 2011 Early Learning and Developmental Standards for Four-Year-Olds as the source for all planning. This would also benefit the center itself in that it would meet the state-mandated readiness rates and would avoid being placed on probation because the children from the center scored on or above on those readiness rate screenings.

The VPK children who receive the instruction from these teachers would also benefit from this model. They would become the recipients of a comprehensive education based on effective planning strategies in alignment with the 2011 Early

Learning & Developmental Standards for Four-Year-Olds. They would attend school each day and find themselves immersed in engaging and high-interest lessons grounded in standards aligned to their individual needs. They would receive instruction from learned teachers who understand the role these standards play in lesson planning. The children would ultimately reap these rewards as they enter into kindergarten, demonstrating mastery of those state-required readiness skills.

And finally, it is the parents of those children, as well as the taxpayers, who would also benefit from this model. When parents place their children into an early childhood education center, they assume that they will receive a safe, appropriate, and comprehensive educational experience which prepares them for entry into kindergarten. These parents pay for this service, either personally or through the assistance of state agencies, and hold these expectations accordingly. Furthermore, the taxpayers would also benefit from this model, because the children would be provided with quality educational services designed to prepare them to be successful contributors to their society.

Anticipated Changes

The targeted audience for this Framework included the targeted VPK teachers and directors. The desired outcome was to provide a comprehensive professional development program supportive of VPK teachers and directors in effectively implementing the 2011 Early Learning & Developmental Standards for Four-Year-Olds in a developmentally appropriate manner. This would lead to an increase in the academic achievement of students, thereby decreasing the number of centers placed on probation.

What follows is a list of anticipated changes in areas including teacher and director performance.

- Teachers and directors would be able to effectively identify and explain the various components of the 2011 Early Learning & Developmental Standards for Four-Year Olds, specifically those related to the Mathematical Thinking Component.
- Teachers and directors would be able to successfully embed the 2011 Early Learning & Developmental Standards for Four-Year Olds/Mathematical Thinking Component into their daily lesson plans.
- Teachers and directors would be able to deliver daily developmentally appropriate instruction to the children in their care based on lesson plans aligned with the 2011 Early Learning & Developmental Standards for Four-Year-Olds/Mathematical Thinking Component with fidelity.
- Teachers and directors would be able to effectively access VPK Assessment data and align instruction based on the individual needs of the students in their classrooms.
- Teachers and directors would initiate and actively participate in CoPs aligned to the delivery of the 2011 Early Learning & Developmental Standards for Four-Year-Olds/Mathematical Thinking Component.

The anticipated changes in performance are directly aligned with both the needs of teachers and directors of the targeted centers. The Framework was specifically designed to address the unique needs of the participating VPK teachers and directors.

Taking into account the participants' background knowledge as it related to both the standards and the delivery of instruction in the area of mathematics, the delivery of the professional development opportunities would be distinctive. Trainers would strive to meet the precise needs of those in attendance with the ultimate goal of supporting them with the successful implementation of the 2011 Early Learning & Developmental Standards for Four-Year Olds, specifically in the Mathematical Thinking Component.

Additionally, because the VPK children would be receiving developmentally appropriate instruction aligned specifically with the 2011 Early Learning & Developmental Standards for Four-Year-Olds, it is expected that their kindergarten entry scores would meet or exceed those deemed passing by the state. Furthermore, the targeted early childhood centers where the VPK teachers and directors are employed would observe an increase in their VPK Provider Readiness Rate which measures how well a provider has prepared the VPK children for success in kindergarten based on the standards.

Evidence of Change

Through targeted professional development opportunities, responsive coaching experiences, and CoPs, there were a number of expected changes that would take place for the participants through the implementation of the Framework. Embedded within each goal were procedures for monitoring progress as well as documenting successful attainment.

Goal 1: To support VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds – Mathematical Thinking Component in a developmentally appropriate manner through various coaching and technical assistance opportunities.

Opportunities to assist both teachers and directors with the implementation of the standards included a comprehensive professional development plan designed to meet the needs of those participants. This approach included attendance at required trainings, as evidenced by rosters and pre and post-gain surveys completed by all participants. Examination of CoP attendance records, including dates and members present, would be analyzed to discern success. Monitoring of VPK teacher and director progress would also take place through the intermittent review of the IPDPs they created at the onset of the program, noting progress towards their personal goals. Documentation of weekly lesson plan submissions showing correct use of the standards is another form of measurement used as evidence of change. Observations of data analysis sheets including disaggregated data from the VPK Assessment would also be monitored as a means of assessing both the teachers and directors and their ability to individualize instruction. Use of checklists to demonstrate teachers' and directors' successful attainment of VPK assessment data for planning purposes would be referenced and noted to monitor progress as well. Referencing the weekly logs and anecdotal notes of the coaches who visited the teachers and directors to provide support and model correct lesson planning and demonstration would also serve as documentation of mastery. Many of these approaches were chosen based on the work of Buysse and Wesley (2009) in which they found that

combining various pedagogical strategies can assist in reinforcing the desired behavior of early childhood teachers. Finally, examination of CoP attendance records, including dates and members present, would be analyzed to discern success.

Once teachers begin to utilize the standards as a guide for lesson planning, one would expect to see certain behaviors demonstrated by students in classrooms. Specifically, one would observe children actively engaged in high-interest lessons geared toward their current cognitive level of understanding for that particular skill, as the standards mirror the cognitive processes of children of this age. Additionally, because the Florida VPK Assessment provides formative data three times a year, these scores would also serve as valuable information to document progress toward meeting or exceeding each standard and would enable teachers to further each child's learning based on those results. This could happen through small group lessons and even individualized support.

Goal 2: To help instill in each teacher and director, a desire to continue and sustain professional development growth opportunities for personal development; especially as it pertains to their understanding and use of the complete set of the 2011 Early Learning and Developmental Standards for Four-Year-Olds.

This particular goal presents some challenges concerning the ability to document measurable data; however, it plays a vital role in the success and continuation of this dissertation in practice. Wesley and Buysse (as cited in Sheridan et al., 2009) observed that as early childhood educators move further along the professional development continuum, they increasingly take personal responsibility to further their growth in this

area through the use of goal-setting, reflective practices, and continued study of best practices in the field. Methods for documenting change in this goal include exit interviews for both teachers and directors, relating specifically to their continued professional development plans. In addition, specific tracking of each targeted member's attendance in future staff development trainings can be monitored for added evidence as it pertains to their accrual of continuing education credits.

Expected Results

Howes, Hamre, and Pianta (1998), in their study of successful professional development practices, concluded that to determine the effectiveness of a professional development intervention, one must observe both the changes in the behaviors of teachers as well as the participating children's skill levels prior to the project onset of the project. Within this Framework there are specific measures which, upon mastery, would designate the targeted goals were achieved. The chief indicator would be the successful use of the 2011 Early Learning & Developmental Standards for Four-Year-Olds, Mathematical Thinking Component, when planning and delivering instruction for VPK children. With this information in mind, there would be careful analysis of lesson plans which would provide insight into the participants' achievement of this goal, specifically the use of the standards as they relate to appropriate instructional practices. Observation notes from visiting coaches would also serve as documentation, noting the attainment of goals including the designing and delivery of lessons in accordance with the 2011 Early Learning & Developmental Standards for Four-Year-Olds, Mathematical Thinking Component. These anecdotal records in conjunction with conversations with the coaches

would be used to designate goal achievement for those teachers and directors taking part in the Framework. Furthermore, analysis of all VPK students' final VPK assessment scores in relation to their entry scores will be considered when determining mastery. Also considered will be the specific early education center's readiness rates in comparison to the previous year's rates. Tracking each participant's future staff development transcripts to ascertain continued professional development participation, specifically as it relates to the understanding and implementation of the complete set of the 2011 Early Learning and Developmental Standards for Four-Year-Olds, will assist in determining whether or not this goal was achieved.

Modifications

The purpose of this Framework was to remain sufficiently flexible to be incorporated into a variety of different professional development situations while, at the same time, addressing the main focus of supporting VPK teachers and directors in the successful implementation of the 2011 Early Learning & Developmental Standards for Four-Year-Olds. Understandably, there will be situations in which this Framework will require certain modifications relating to unique situations. For example, the number of required trainings might be reduced or increased based on the current understanding and use of the standards. In addition, the number of coaching sessions might also be readjusted as they relate to the specific supports required of the target group. Moreover, the CoP groups could be reformatted to allow for more participants or to reduce the number of participants to allow for more personalized attention. With this flexibility,

many of the Framework's components can be modified and adapted to meet the various professional development programs.

Anticipated Impact

The purpose of this dissertation in practice was to develop a comprehensive professional development program that would assist VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds. Through the use of the Framework for VPK Professional Development, the intent was to deliver comprehensive training to those targeted in this pilot program. From the county level, this plan would help to impress upon both the local Early Learning Coalition and the state, the need to provide additional professional development supports, especially as related to the understanding and implementation of the standards. Evidence from this program would reinforce the importance of embedding specific components into many, if not all, professional development opportunities including the use of coaching, reflective practices, and CoPs as a means of meeting the diverse and specific needs of those practitioners.

Limitations

Recognizing the possible limitations of action research is an essential element of any quality study. In order to present a balanced description of this design, it is important that one consider those potential constraints that may have impacted the potential success of a project. Following is a discussion of three different types of possible limitations in

the design of the program, the impact it would have, and the data used to formulate the design.

Data limitations for this study included the small number of participants surveyed. In order to gain true insight into the views of VPK teachers and directors pertaining to their professional development opportunities concerning the 2011 Early Learning and Developmental Standards for Four-Year-Olds, it would be necessary to reach out to neighboring coalitions to determine the current supports available to their VPK teachers and directors. To verify the success of this professional development endeavor, it would also be essential to implement this in larger communities, making certain that this Framework was impacting a much larger population.

Another possible drawback was that of impact limitation. Understanding that the study was only designed for a small group of VPK teachers and directors, it is imperative to consider the inclusion of other populations. Accommodating a larger area to include surrounding counties and allowing for other teachers and directors to participate, rather than focusing solely on those dealing directly with VPK, would help to ensure that the study would yield comprehensive findings.

Finally, reflecting upon the original design of this action research study, it is important to understand that there might have been specific constraints that could be amended to allow for the inclusion of other subject matter located within the standards. Limiting the content of the professional development to the mathematical thinking portion of the 2011 Early Learning and Developmental Standards for Four-Year-Olds, could have restricted the outcomes as well as opportunities for further growth. These are

all necessary limitations to consider and note, especially by those interested in potentially implementing this action research.

CHAPTER 5 IMPLICATIONS, RECOMMENDATIONS, AND FINAL THOUGHTS

Introduction

This dissertation in practice was focused on designing a professional development model that would assist VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds, specifically, the cognitive and general knowledge—Mathematical Thinking Component, within their daily lesson plans. The impetus for creating this model came from my personal involvement with VPK teachers and directors.

I was contracted by the Office of Early Learning to assist the coalition in providing the mandatory three-hour training to those working with VPK children within this targeted county. I was required to follow a scripted presentation and allowed time at the end for any questions or concerns. I completed more than 15 trainings, interacting with many providers within the local area. While spending time visiting the various early childhood centers with tasks associated with my full-time job, I soon discovered that teachers and directors of VPK children were still uncertain as to how to use the standards as a resource for planning their daily instruction. Further conversations with providers also revealed a lack of technical support from the local coalition with regard to achieving this goal. These exchanges confirmed that a comprehensive professional development plan was necessary to support the VPK teachers and directors with the implementation of the 2011 Early Learning and Developmental Standards for Four-Year-Olds.

Implications of the Framework

The Framework was designed to approach the professional development component as one cyclical in nature with the practitioner being assessed upon entry to determine her unique needs in accordance with the topic of study. Aligning the specific needs of the participant to the content and support services provided is critical to ensuring an appropriate match. Through this customization approach, one is able to begin the training and implement the supports based on the current level of understanding that the participant has, without spending time trying to determine what it is they need. This approach differentiates itself from other trainings in that it is based on content that is specific to the needs of the teachers. The next component of the Framework represents the actual instruction the practitioners would receive. These trainings would be grounded in relevant and research-based practices, delivered to them in a coherent and systematic fashion, while applying appropriate adult-learning strategies. Working alongside the teachers and directors, the trained facilitators can support them individually with the attainment of their specific work-related goals.

The next area of the Framework contains the elements of mentoring and coaching. These opportunities allow practitioners the necessary supports to put research into practice while working in their own classrooms. These one-on-one sessions enable the coaches to not only observe the teacher but to provide specific feedback pertaining to what she saw. This on-the-spot service is not only effective, but it provides instantaneous support in real classroom settings.

The following area in the Framework addressed the need for CoPs. This format essentially allows for professional development to be viewed as an ongoing practice, enabling the participants to revisit concepts and secure supports from peers and sometimes a facilitator. These meetings can take place in neighborhood centers or even in online virtual communities allowing providers to access information and insights 24 hours a day. The ultimate aim of a CoP is to help bring the research directly to providers, making it possible for them to put these practices in place with supports from their peers (Sheridan et al., 2009).

The final component of this Framework, Further Learning, reinforces the notion that professional development is viewed as an ongoing process. Many occupations require that staff continuously receive training to keep current on recent research practices. This notion holds true for early childhood educators as well. Allowing opportunities through different pathways to earn continuing education credits tailored to specific jobs should be available to all employees in the field of early childhood education. Partnering with local and state agencies helps to ensure that a variety of different professional development opportunities are easily accessible and affordable for those in the field.

Recommendations for Further Work and Research

Early childhood educators are required to have a thorough understanding of child development. At the same time, they are tasked with providing appropriate and engaging lessons. Though in recent years accountability has entered into this arena, the resources to support these endeavors remain limited. There has been extensive research conducted

supporting appropriate practices when delivering professional development; however, often times these strategies are overlooked when working with those in the field of early childhood education. Issues such as funding, low wages, and high-turnover rates seem to interfere with the process. Current trends indicate a renewed interest in the field of early childhood education along with supportive funding. Therefore, it is imperative that those responsible for early childhood education programs look for the most appropriate and efficient ways to provide these professional development services to those in need.

No longer can we rely on the traditional approaches to deliver effective professional development. Rather, we must embrace strategies based on relevant research and best practices. Through novel and creative approaches, I believe that essential training can be provided to all early childhood educators. Overcoming the challenges is possible provided those interested are willing to listen and respond to the true needs of this group of professionals.

Program Impact

Reflecting on the past three years spent in the Ed.D. program I have grown in a number of ways. My skill-set has increased tremendously, enabling me to approach projects as a true researcher would. Learning essential skills such as searching out academic writings and extracting relevant information has permitted me to conduct successful literature reviews. Through this program I have also learned to approach problems in a scholarly fashion, taking into account the different perspectives and possible solutions. Furthermore, I have also strengthened my writing skills, expressing myself in a scholarly manner and supporting my claims with factual research. It is with

all of these experiences that I view myself as a competent professional in the field of education.

APPENDIX A
SURVEY PROTOCOL AND INTERVIEW DATA

Name and location of interviewee: _____

1. Please tell me about yourself (i.e., what ages do you/have you taught, educational background, years of experience, certification/degrees, current center/school.
2. How is the lesson plans monitored at your site?
3. How is instruction monitored at your site?
4. How many professional development opportunities did you attend concerning the 2011 Early Learning and Developmental Standards for Four-Year-Olds?
5. What challenges/strengths did you experience from the professional development you received pertaining to the 2011 Early Learning and Developmental Standards for Four-Year-Olds?
6. What resources are you provided to ensure that the standards are successfully implemented in your center/school? What are your thoughts about these resources? Do you feel they will help you to reach your goal of a successful pass rate for your VPK students?
7. What professional development/training or support do you value pertaining to teaching Four-year-olds?

Sample and Procedures

The interviews were held at the child care site of the participant. They were conducted in a quiet room which allowed for confidentiality.

Interview Protocol

A list of POP centers was compiled from the Florida Readiness site so as to secure the names and addresses of potential interviewees. I attempted to recruit them through either a phone call or center visit, in which I explained the intent of my research project. If the candidate indicated that they would be interested in participating, I then arranged for a time to conduct the interview that was conducive to their schedule, making sure to secure the permission of the owner of the center.

Each candidate who participated in the interview was assigned a number which correlated with their name and was kept secured by the researcher.

Data Analysis

The quantitative and qualitative data was transcribed and coded, with the summary of those results on the following page.

INTERVIEW DATA FOR ANALYSIS

Listed below are the results from the informal interviews with both directors and VPK teachers.

- Please tell me about yourself, i.e. what ages you have taught, educational background, years of experience, certification/degrees, current center/school.**

Data indicates highest level of education with the exception of the Director's Credential certification and CDA.

45 hours	CDA	AS in Early Ed.	Director's Credential	BS in Education	MS in Education
	8	1	10	4	1

Data indicates age groups interviewee has worked with.

Infants	1's	2's	3's	4's	5's	Elem.
5	4	4	5	6	6	2

Data indicates number of years working in the field of Early Childhood Education.

0-5 Years	6-10 Years	11-15 Years	16-20 Years	20-25 Years	26+ Years
0	2	5	1	2	2

- How are lesson plans monitored at your site?**

Self	Peer	Director	Outside Agency
2	1	8	1

Additional Comments:

*Ours are placed online for parents to see.

*We seldom get feedback from our submissions.

*Director is not diligent in the task.

3. How is instruction monitored at your site?

Self	Peer Teacher	Director	Outside Agency
1	1	9	1 (ELC)

4. How many professional development opportunities did you attend concerning the Early Learning and Developmental Standards (total hours of instruction received).

3 hours of training	6 hours of training	9 hours of training	12 hours of training
6	2		4

5. What challenges/strengths did you experience from the professional development you received pertaining to the Early Learning and Developmental Standards for Four Year Olds?

Challenges	Strengths
*None *No idea how to implement in classroom. *Need support groups for follow up. *My classroom is filled with so many different personalities, it's hard to meet all of their demands and still do the standards. *Not really supported. Just told to do this. I need someone to show me how.	*Increased learning. *Beneficial *Informative *More is better *Always believe in continued improvement. *Manuals were helpful. *Like to challenge the staff. *Just got some extra materials from the trainings...they are nice. *Great to have book to refer to and some lesson plans. *Standards book was helpful.

6. What resources are you provided to ensure that the standards are successfully implemented in your center/school?

- *Nothing unless you are a POP center.
- *None that I know of.
- *None – I use Google a lot.
- *My teachers do a lot of supplementing their curriculum on their own.
- *We got a standards manual and a game.
- *The staff at the ELCFV is always very helpful. I call them frequently.
- *Game at the last standards training, but nothing from the school.
- *None
- *Someone from DOE is supposed to come by and help.

What are your thoughts about these resources?

- *They are ok.
- *Just learning about them.
- *I like the pilot program Marge is offering. Wish we could send teachers to it.
- *Wish we had more...isn't that always the case?

7. What professional development/training or support do you value pertaining to teaching Four-year olds?

- *Scope and sequence would be helpful. I don't know how to get this done.
- *When do I teach what?
- *More training for the VPK teachers. Can they go to the pilot program with Marge? That would be a nice set of second ears.
- *Why can't we attend the trainings offered through the Volusia County Schools? That would be helpful to be able to get their professional development opportunities too.
- *We do a lot of research on our own....no real support.
- *I think it would be helpful if we all used the same curriculum. Why can't the Coalition just assign us one? Then the transient population of children would not be impacted. Need consistency.
- *Training on the curriculum that they are required to do. WE need this training to help us.
- *More training on those children who are developmentally delayed.

- *Scope and sequence for each 9 weeks for VPK children. I need this to help me plan.
- *I know about the standards, but don't understand how to implement them.
- *More hands-on trainings. Show me – don't tell me. Like in the area of math instruction and science.
- *Why can't the ELC buy a few of the curriculums and train their staff who then trains us? You have to buy it which is expensive and then try to get some training out of it too. That's a lot of money I don't have.
- *Need more support with children with behavior problems. They have never been to school before and have issues.
- *So many academics...how do I cram in one small session? I need help making the most of my time with the children.

APPENDIX B
VOLUNTARY PREKINDERGARTEN (VPK) TEACHER SURVEY/DATA

Dear VPK Teacher

Tomorrow you will receive a request to follow a link to fill out a brief survey in support of an important research project being conducted by a member of the University of Central Florida graduate program. The survey is being sent to several VPK teachers in the area and will ask questions regarding your confidence and beliefs about teaching math to prekindergarten children.

The study being performed will help me to design a professional development program that can assist VPK teachers such as yourself in ways that can best aid you in delivering the curriculum in alignment with the 2011 Early Learning and Development Standards for Four-Year Olds; specifically in the area of math.

Thank you in advance for your time. Only with the assistance of educators like you can this research project be successful.

Sincerely,

Cathy Twyman

University of Central Florida Graduate Program

College of Education

4000 Central Florida Blvd.

Orlando, FL 32816

Thank you for your willingness to participate in this survey. The main purpose of this survey is to help me to plan early math professional development learning opportunities that better meet the needs of Voluntary Prekindergarten teachers just like you.

**VPK Teachers and their confidence and beliefs
about teaching math to prekindergarten children.**

Teacher Beliefs about Preschoolers and Math					
Most children in my class ____.	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1. <u>enter preschool</u> with little math knowledge	1	2	3	4	5
2. have the <u>cognitive abilities</u> to learn math	1	2	3	4	5
3. <u>should be helped to learn math</u> in preschool	1	2	3	4	5
4. are <u>very interested</u> in learning math	1	2	3	4	5
5. need to learn math in preschool to be <u>ready for kindergarten</u>	1	2	3	4	5
6. learn a great deal about math through their <u>everyday activities</u>	1	2	3	4	5
7. need structured <u>preschool math instruction</u>	1	2	3	4	5
8. should be helped to learn math using a <u>published math curriculum</u>	1	2	3	4	5

Teacher Confidence in Helping Preschoolers Learn Math					
I am confident in my knowledge of_____.	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1. what the children in my classroom know about math <u>when they enter preschool</u>	1	2	3	4	5
2. reasonable math <u>goals</u> for preschoolers	1	2	3	4	5
3. the <u>best practices and strategies</u> for helping preschoolers learn math	1	2	3	4	5
4. local or national <u>standards</u> for preschoolers	1	2	3	4	5
5. the best ways to <u>assess</u> children's math knowledge and understanding throughout the year	1	2	3	4	5
I am confident in my ability to _____.	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
6. <u>observe</u> what preschoolers know about math	1	2	3	4	5
7. <u>incorporate</u> math learning into common preschool situations (such as art or dramatic play)	1	2	3	4	5
8. <u>plan</u> activities to help preschoolers learn math	1	2	3	4	5
9. <u>further preschoolers' math knowledge</u> when they make spontaneous math comments/discoveries	1	2	3	4	5
10. <u>make sense of preschoolers' confusions</u> when they learn math	1	2	3	4	5
11. <u>translate</u> assessment results into curriculum plans	1	2	3	4	5

Teacher's Confidence in Their Personal Math Abilities					
	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1. Math was one of my best subjects in school.					
2. Just the word "math" can make me feel nervous.	1	2	3	4	5
3. I'm not a "math person."	1	2	3	4	5
4. I like coming up with creating ways to solve math problems.	1	2	3	4	5
5. I can easily convert fractions into percentages and decimal numbers.	1	2	3	4	5
6. I have a bad sense of direction.	1	2	3	4	5
7. I'm good at looking at numeric data and finding patterns.	1	2	3	4	5
8. I'm good at estimating how tall something is or the distance between two locations.	1	2	3	4	5
9. I can easily rotate objects in my mind.	1	2	3	4	5

Adapted with permission from "A Survey Study of Early Childhood Teachers' Beliefs and Confidence about Teaching Early Math," by J. Q. Chen, J. McCray, M. Adams, & C. Leow, C. (2014). *Early Childhood Education Journal*, 42(6), 367-37.

APPENDIX C
INSTITUTIONAL REVIEW BOARD APPROVAL



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

Approval of Exempt Human Research

From: UCF Institutional Review Board #1
FWA00000351, IRB00001138

To: Catherine Twyman

Date: February 26, 2016

Dear Researcher:

On 02/26/2016, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Project Title: Supporting Prekindergarten Teachers through Appropriate Professional Development Practices
Investigator: Catherine Twyman
IRB Number: SBE-16-12068
Funding Agency:
Grant Title:
Research ID: n/a

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

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

Signature applied by Joanne Muratori on 02/26/2016 05:30:24 PM EST

IRB Manager

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