

Developmentally appropriate practice (DAP): An examination of preservice teachers

Brian Raftery

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Committee Members:

Dr. Kim Ujcich Ward, Chair, Thesis Advisor

Dr. Robyn Ridgley, Committee Member

Dr. Tom Brinhaupt, Critical Reader

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ABSTRACT

The purpose of this investigation was to assess pre-service early-childhood teachers' beliefs and intended future use of developmentally appropriate practices (DAPs) in early childhood environments and their views on how practices impact children's outcomes. Fifty-three pre-service teaching majors completed assessments regarding perceptions of teaching practices and expectations of child development from vignettes. Results indicated that TBS and IAS were significantly positively correlated with one another, but not with the vignette child outcomes. Significantly more positive child outcomes were indicated by those considering the DAP scenario compared to those evaluating the developmentally inappropriate practices scenario. Those with and without applied teaching experience did not differ in their perspectives or child outcome expectations. Implications of these findings and methods are discussed.

TABLE OF CONTENTS

LIST OF TABLES	v
LIST OF APPENDICES.....	vi
CHAPTER I. LITERATURE REVIEW	1
DAP and Language	3
DAP and Cognitive Development	12
DAP and Social Skills	15
DAP and Behavior.....	19
Teacher’s and Preservice Teacher’s DAP Beliefs	22
Statement of Problem and Hypotheses	26
CHAPTER II. METHOD..	30
Participants	30
Instruments	31
Demographic Survey.....	31
Teacher Beliefs and Practices Scale.....	31
Vignette Assessment.....	35
Procedure.....	36
CHAPTER III. RESULTS	37
CHAPTER IV. DISCUSSION.....	42
Limitations and Directions for Future Research	47
REFERENCES	49
APPENDICES	55

LIST OF TABLES

Table 1. Demographic variables by full sample and experience group.....	32
Table 2. Correlations among TBS, IAS, and Vignette for DAP scenario	38
Table 3. Correlations among TBS, IAS, and Vignette for DIP scenario	38
Table 4. Dependent variables for experience by scenario groups.....	41

LIST OF APPENDICES

APPENDIX A. DEMOGRAPHIC FORM 56

APPENDIX B. TEACHER BELIEFS AND PRACTICES SCALE 58

APPENDIX C. VIGNETTE ASSESSMENT 65

APPENDIX D. CONSENT LETTER 70

APPENDIX E. IRB APPROVAL LETTER 72

CHAPTER I

LITERATURE REVIEW

The National Association for the Education of Young Children (NAEYC) proposed guidelines for Developmentally Appropriate Practice (DAP) for early childhood learning environments (NAEYC Position Statement, 2009). These guidelines have become the hallmark of the structure and approach to preschool and early grade school instructional environments that enhance student learning. It is the most widely and acceptable set of practices of teacher instruction of early childhood education.

There are several guidelines and suggestions for instructors to create an environment that is developmentally appropriate. An example is having a daily schedule that has mostly activities available where the children choose the activities in which they want to engage. This mainly leads to free play with small groups of children, but it is also developmentally appropriate for teachers to set up these free play environments where the children can interact with others, all while teachers can enhance skills through embedding learning opportunities. Examples of embedding are playing blocks with a small group of children and asking them to identify colors, how many there are, or suggest that they build together. Instructors who set up environments in this manner are following developmentally appropriate guidelines.

Guidelines also suggest that it is acceptable to use direct instruction and whole group activities. However, this approach should not be used for the majority of the daily routine, but should be used when attempting to build a specific skill (e.g., alphabet

naming, talking about the calendar). Other developmentally appropriate practices include positive teacher/child relationships, having materials and activities that are developmentally appropriate, having some activities that are individualized, such as playing with a favorite toy/activity, engaging in activities that are aimed to build skills but doing so at the individuals skill/ability level, teachers planning daily schedules that are useful for promoting development, among other techniques (Camilli, Vargas, Ryan, & Barnett, 2010).

A particular focus of research in the areas of DAP has been on how teachers' beliefs impact what they practice in their classrooms. Research has shown consistently how early childhood teachers' beliefs about DAP are related to their actual practice (e.g., Hedge & Cassidy, 2009; Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001; McMullen et al., 2006). Given that actual practices are linked to an instructor's belief system, pre-service teachers also have received some attention in research. Beliefs can arise from and be heavily impacted by what is taught to a prospective teacher, so it is critical to know what pre-service teachers are being taught in their training programs to examine to what extent they are learning DAP methods of instruction. Therefore, the focus of the current study is on DAP beliefs of pre-service teachers and how these beliefs may be related to one's knowledge and expectations of the impact of DAP on various areas of children's development. Additionally, empirical studies suggest that DAP may impact different functional domains of child development differently. This study will assess prospective teachers' knowledge of DAP as well as their expectation of the effects

of DAP on children's learning and behavior. The following literature review describes findings related to the impact of DAP on young children's language development, cognitive skills, social skills, and behavior. Additionally, the literature on teacher's beliefs and practices related to DAP is reviewed. Finally, a study to investigate the relationship between these perceptions and expectations is proposed.

DAP and Language

It is recommended that in order to enhance language in a developmentally appropriate manner, preschool environments should give multiple opportunities for the children to observe and practice language skills, and this can be done through play/informal activities, as well as in structured ways (Camilli et al., 2010; NAEYC Position Statement, 2009). If the environment is attempting to enhance language development via play, then it is also developmentally appropriate for teachers to interact with the children and embed learning opportunities (e.g., identifying shapes, reading along with students and asking questions). It also is useful and appropriate to enhance language using direct instruction and teaching to children in large groups or as a whole, in order to build a particular language skill (Camilli et al., 2010). Examples of this include sitting in a large circle reading out loud, singing songs, or engaging in alphabet activities with whole class at the table. If this type of direct instruction is used, it is only developmentally appropriate if it used for some of the day, and most of the day should still be in a play or small group style.

There is evidence that suggests that preschool teaching practices have a positive impact on children's language development. For instance, both typical and at-risk state funded preschool children were compared on different components of language including alphabet, letter-word recognition, and vocabulary (Connor, Morrison, & Slominski, 2006). Three different instruction types were identified via an observation and coding system: child-initiated, in which children played freely with little involvement from the teachers; teacher-initiated, in which children were mainly in whole or large groups with the teacher choosing/leading activities, and one that was mainly play with child chosen activities but with teachers interacting and encouraging interactions and embedding learning opportunities. All of the children, regardless of the instruction type, experienced vocabulary growth (Connor et al., 2006). Although having mainly direct instruction through teacher-initiated activities did have an impact on language, it was no different than the child chosen instruction types, and a predominant teacher-directed style is not developmentally appropriate. Connor et al. (2006) found that when teachers and students were both initiating activities, for instance embedding learning opportunities via small groups, this group yielded similar language growth as compared to the other two groups, and this group was developmentally appropriate, where as the other two were not. The researchers used acceptable instruments in measuring vocabulary growth, alphabet, and letter word recognition, by using the Woodcock-Johnson III Test of Achievement. However, the researchers identified instruction types by videotaping classrooms rather than experimentally controlling this variable, and used a coding system, the Noldus

Observer Pro System, but did not report interobserver agreement data to indicate the accuracy of the data collected by observation.

Mills, Beecher, Dale, Cole, and Jenkins (2014) also assessed the effects of instruction style on language, but with preschool children who had developmental delays. Specifically, the amount of language, vocabulary diversity, and complexity were assessed using recordings from wireless microphones attached to the participants, and the recordings were transcribed using computer software. The students were randomly assigned to one of two interventions, Enterprise Language (EL) or Direct Language (DL). The EL intervention is reflective of DAP in which children initiate most of the daily activities and interactions, and language was promoted by the teachers naturally throughout the day using DAP approaches, such as embedding. In contrast, the DL intervention is where the teachers selected activities, initiated interactions, and specifically targeted language skills via direct instruction.

Results indicated no significant differences in language complexity and diversity between groups, but amount of language directed toward peers was higher for the EL classroom compared to the DL classroom (Mills et al., 2014). Specifically, more language developed when children were engaging in instruction involving mainly free play, with teachers assisting in setting up interactions and enhancing language via embedding. The instruction type described in this study is DAP, because it is necessary for teachers to help initiate and promote interactions and exploration during free-play/child-directed activities. These results indicate that children with developmental

delays benefit from this developmentally appropriate practice when considering impact on language acquisition. However, the measure being used to assess language development was rather complicated, not used widely in research, and the language complexity and diversity of the participants did not significantly differ between the two instruction types (Mills, et al., 2014). A strength of this study was that the observers were trained by experienced researchers, and they trained until 90% reliability was met on past recordings, prior to coding the study data. Reliability data also were obtained throughout the study, although percent of time doing so and results were not reported. Lastly, random assignment of the interventions was used.

Fuligni, Howes, Huang, Hong, and Lara-Cinisomo (2010) also compared the impact of two different instruction types on language, but used a widely used time-sampling procedure, the Emergent Academic Snapshot (EAS). The two instruction types included a “high-free choice” approach, in which children spend most of their days involved in child-initiated activities, and a balanced approach, in which children spent equal amounts of time in child and teacher directed activities, yet still spent a portion (32%) of their time in child directed activities. Teacher-directed activities included being read to, being engaged in math, letter and sounds activities, and art/music activities that were led by the teacher.

The children in the two different instruction groups were compared on language development and other school readiness skills. The participants were low-income preschool children who were recruited from public and private based center programs and

also from family childcare homes. There was more of a language increase for the balanced group than the child-directed group at the end of an academic year compared to the beginning (Fuligni, et al., 2010). The researchers used reliable instruments in both identifying instruction types and measuring language development, by using the Peabody Picture Vocabulary Test (PPVT) to assess language gains, and EAS for identifying instruction types. It is important to highlight that both groups of children that were identified appeared to be using developmentally appropriate practices, and both led to gains in language development, although the group with more direct teach involvement improved more.

Another study that assessed the effect of instruction type on school readiness skills, including language, used data from two large studies, the National Center for Early Development and Learning Multi-State Study of Pre-Kindergarten (NCEDL), and State-Wide Early Education Programs Study (SWEEP) for their analysis (Chien, Howes, Burchinal, Pianta, Ritchie, Bryant, Clifford, Early, Barbarin, 2010). The participants were preschool children who were recruited from 701 state funded public preschool programs. Of the 701 programs, random classes were selected, and four random children (two boys and two girls) within each classroom were targeted. The instruction type groups were identified based on the highest percentage of time spent in engaging in certain activities (i.e., free play, small group, individual time, and whole group), teacher-child interactions types (e.g., routine, simple, elaborated, scaffold, didactic), and time spent in specific academic activities using EAS. Using the EAS, the four groups that were identified

included free play, individual instruction, group instruction, and scaffold learning (Chien et al., 2010).

Language skills were assessed at the beginning and end of one academic year using multiple reliable measurements which included: PPVT, the Oral and Written Language Scale (OWLS), the Woodcock-Johnson III Test of Achievement (WJ III), and a teacher report, the Early Childhood Longitudinal Studies-Kindergarten Cohort. The group that had the least amount of gains in language development compared to any of the other groups was the free choice group. Specifically, this group had less gains at the end of the academic year in language and literacy, naming letters, WJ letter-word identification, and teacher report of language (Chien et al., 2010). Children in the free choice group spent more time in selecting where they wanted to play and learn, and they were involved with activities such as pretend play and reading. This group can be classified as a predominantly child-initiated approach to instruction and learning. Furthermore, teachers did not use developmentally appropriate instruction methods, such as embedding during free play. The other three group profiles consisted of either having more time spent on individual activities like doing worksheets, being involved in more small or large group teacher-directed activities, or experiencing more teacher scaffolding/embedding. The results suggest more is needed in preschool classrooms to promote language development in preschool children than having children engaging in free play activities, with little to no involvement from the teachers. Instructors are expected to be involved during child play activities so that skills can be modeled,

encouraged, and reinforced. One group of children in this study had a developmentally appropriate instructor environment (i.e., scaffolding profile), and gains in scores were higher for this group on language, as compared to the group who only experienced free play and did not experience embedding (Chien et al., 2010).

Using the same participant sample as Chien et al. (2010), Howes et al. (2008) further investigated how language/literacy gains from the beginning to end of an academic pre-school year were related to the following variables: child demographics (gender, age, ethnicity, maternal education), instructional quality (classroom practices that involve children learning and teacher-child interactions), and classroom practices (time spent in reading, letter-sound activities, and oral language activities). These characteristics were captured by using the tool CLASS, which is a reliable observation tool used to capture teacher-child interactions and teacher practices. The ECERS is also a reliable tool that focuses on teacher-child interactions/relations, as the quality of instructor practices. Additionally, it assesses the presence of the materials in the classroom that can enhance learning (La Paro, K., Thomason, A., Lower, J., Kintner-Duffy, V., Cassidy, D., 2012).

Results indicated that children who were in classrooms that experienced a quality instructional climate, compared to others who did not, had more gains in language and literacy skills, and receptive language compared to children who did not experience this type of classroom. Children in the quality instructional climate classrooms experienced instructors who did not focus on direct instruction/teaching facts, they encouraged

interactions among children, allowed them to learn through play, and engaged with children during play to enhance learning opportunities. Examples of this are encouraging language among the children or asking them to identify animals in a book. This type of practice is developmentally appropriate because it is focused on how instructors can build skills while the children are engaging in interesting and chosen activities.

These results are similar to those reported by Mashburn et al. (2008) who assessed instructional climates and the impact on language development. The type of classrooms that have the instruction types discussed were identified using standardized tools that measure classroom processes such as EAS, CLASS, and ECERS. Also, standardized measurements were used in assessing language skills, such as the PPVT and OWLS, all well-established tools for these purposes. The high instructional climate classrooms, as previously described, are reflective of teachers who expose children to play like activities and enhance learning by interacting with the students. This type of classroom practice can be described as developmentally appropriate practice because the practice focuses on building skills but does it through the children's play/interests by using embedding learning opportunities (Howes et al., 2008).

In summary, these studies with a focus on language suggest that preschool classrooms that had teachers who devoted more time directly targeting/influencing language development, which was usually occurring during children's play activities, as compared to teachers who devoted less time doing this, generally had children in their classrooms that developed more language skills (eg., Chien et al., 2010; Connor et al.,

2006; Fuligni et al., 2010; Howes et al., 2008). There was also evidence that teacher directed activities can positively influence language development, but this is only developmentally appropriate for preschool children if it is used for some of the daily activities, but not all of them. The research suggests that it is necessary for teachers to provide environments where children can play, but also for instructors to use those activities as opportunities to build or enhance skills, including language. (e.g., Chien, et al., 2010; Connor et al., 2006; Mashburn, et al., 2008; Mills, et al., 2014). The instructors that devote time to use embedding learning opportunities and using less direct instruction to enhance language are using developmentally appropriate practices. Thus, it is not surprising to find that these instructional practices have positive impacts on preschool children's language.

There are some methodical issues that limit the utility of these findings, however. The participants were not similar across all the studies. For instance, one included typical and at risk participants (Connor et al., 2006), another included children with developmental delays (Mills et al., 2014), and another included low-income children (Fuligni et al., 2010). Also, how the different types of groups/instruction types were identified and defined, such as child or teacher-directed types of instruction, was not consistent across the studies. Although most of the studies used reliable instruments in assessing language development, not all of them did. There were also no training or procedural reliability procedures in most of the studies. Finally, most of the studies discussed were not experimental, that is, all groups and classes pre-existed with no

random assignment to groups; most did not experimentally manipulate the instructional method, therefore, causation cannot be determined and only relational interpretations can be made. Inconsistencies in methodology and limited experimental control of the type of instruction utilized makes interpreting these data with confidence difficult.

DAP and Cognitive Development

It is recommended that in order to enhance cognitive abilities in a developmentally appropriate manner, preschool environments should give opportunities to engage in play/informal activities, as well as in structured ways (Camilli et al., 2010). If the environment is attempting to enhance cognitive development via play, then it is also developmentally appropriate for teachers to interact with the children and embed learning opportunities (e.g., identifying numbers while playing a puzzle, counting blocks). It also is potentially useful and appropriate to teach cognitive abilities using direct instruction and teaching to children in large groups or as a whole, in order to build particular cognitive skills. Examples of this include sitting in a large circle and identifying the date and counting forward and backward, or going over the “number of the day” while at the table. If this type of direct instruction is used, it is only developmentally appropriate if it used for some of the day, and most of the day should still be in a play or small group style (Camilli et al. 2010; NAEYC Position Statement, 2009).

Developmentally appropriate practices in relation to academic and cognitive skills has been researched frequently. Chien et al. (2010) assessed math reasoning skills of

preschool children at the beginning and end of one academic year in four different classroom types. Of the four groups, one instruction type was predominantly child-directed activities, two included children who experienced a scaffolding/embedding instruction type, the other included children who experienced a lot of teacher directed instruction style. Math reasoning skills were assessed using a subtest from a reliable instrument, the Woodcock Johnson Test of Achievement-III. When comparing the groups on the development of math reasoning skills, the predominant free play group experienced less growth during one academic year (Chien et al., 2010). Once again, more is needed than just letting children engage in free play all day. The other two groups devoted time to teaching in one on one situation and also free play. However, within that free play, embedding learning took place, which is developmentally appropriate, and likely the reasons for higher scores.

Other studies also assessed the influence of instruction type on mathematical skills with preschool children with mixed findings. For example, Howes et al. (2008) reported that instructional environments that gave children more opportunities to learn a specific topic or area and encouraged reasoning and communication had no influence on gains in math skills compared to environments that did not give children more opportunities about a specific area (Howes, et al., 2008). In contrast, Mashburn et al., (2008) showed that preschool teachers who scored higher on the domain of “Instructional Support”, which indicates degree of embedding and encouragement during activities, had children with more cognitive gains in WJ III-ACH Applied Problems subtest than

teachers who scored lower on this teaching method domain. As mentioned earlier, instructors who score high on this domain are indicative of developmentally appropriate practices, where active engagement with children and enhancing learning takes place through free play.

In another similar study, Fuligni et al. (2012) assessed math-reasoning skills between two groups of children in classrooms with varying degrees of DAP were compared. Both groups experienced a developmentally appropriate environment, in that most of their day was spent in free time, but one group experienced more scaffolding/embedding. Both groups showed gains in math reasoning skills across the academic year, with neither group showing more improvement (Fuligni et al., 2012). These results indicate that math reasoning was positively impacted in by both types of DAP environments.

A recent meta-analysis reported that the use of direct instruction or small/individualized instruction with preschool children was associated with a higher influence on cognitive development (Camilli, et al., 2010). Populations that were targeted in this meta-analysis included 3-5 year old children enrolled in preschool programs that had interventions for skill development, such as Head Start. The individual instruction group in Chien, et al. (2010) would fall within the category of direct or individualized instruction, based on how the group is defined. The recent meta-analysis shows some support that direct-teaching practices have an influence on preschool children's cognitive and pre-academic development. However, it also shows support for small group

instruction, especially when embedding/scaffolding is occurring in the environments.

Thus, research shows benefit for both ways of instructing.

In addition, the meta-analysis indicated other conclusions emphasizing methodological limitations of this research. One was that the majority of the studies did not randomize the groups. Also, pre-existing variables were not statistically controlled for across most of the literature (Camilli et al., 2010). Given that observations were prominent in all the studies, it is essential to have data showing whether there was proper training and procedural reliability data. Many studies had acceptable methods of training observers, and some had data showing observations were being conducted reliably, but none of the studies had both components. Reliability data are critical when a main component of a study relies on observational data.

DAP and Social Skills

In order to enhance social skills in a developmentally appropriate manner, it is recommended that preschool environments should give opportunities to observe and use various social skills. Allowing child opportunities to engage with one another in both self-selected and teacher initiated small group activities is considered DAP and may enhance social development. However, if the environment is attempting to enhance social skills via play, then it is also developmentally appropriate for teachers to interact with the children and embed learning opportunities and encourage social interaction (e.g., Reszka, Odom, & Hume, 2012; Stanton-Chapman & Snell, 2011; Tsao et al., 2008). An example of this is to pretend play with a doll while three other students participate in pretending,

too. Within each group of children, it is important for an adult to be present so that social skills can be modeled, encouraged, and reinforced.

It is also useful and appropriate to enhance social skills using direct instruction and teaching to children in large groups or as a whole (Mashburn, 2008; Reszka et al., 2012; Tsao et al., 2008). Examples of this instruction include sitting at a table reading aloud, and the instructor encouraging interactions with them and with the peers about the story. If the only goal is to enhance social skills during an activity, then if this type of direct instruction is used, it is only developmentally appropriate if it used for a small part of the day. Most of the day should be spent with children playing and adults interacting with and among them, which is developmentally appropriate and enhances social skills.

Using DAP also has been linked to social skills in both children with and without developmental delays. Kemp, Kishida, Carter, and Sweller (2013) conducted their study with preschool children with different delays and disabilities from a variety of child-care centers (e.g., private, government) from different parts of Australia. Three different activity types were categorized using a momentary time sampling procedure, the Individual Child Engagement Record-Revised (ICER-R). There was more active social engagement in free-group settings as compared to group activities for the children, including those with developmental delays and autism (Kemp, et al., 2013). Active engagement was defined as using verbalizations towards a teacher or peers, or manipulating a toy along side with others. The “free-group” is reflective of a child-directed environment, and the group activity was very similar to a teacher-directed

practice. Although the ICER-R is not a widely used observational measure, it did have some recent supportive history for its reliability (e.g., Kishida & Kemp, 2008).

In a related project, Reszka et al. (2012), evaluated social participation as a function of a specified initiator. The initiator was described as the degree to which either an adult or child controlled the activities, and the initiator was classified using a time-sampling procedure, the CASPER-III. Participants were from four different types of preschool classrooms including community based, public, Head Start, and blended programs. Results indicated that when adults were the initiators, children interacted with adults more, and during child-initiated activities, children interacted more with peers. This study demonstrates how different instruction practices can influence the use of social skills among children with disabilities or delays, and with whom the interactions would be. Tsao et al. (2008) found similar results when assessing use of social skills in children with developmental disabilities. Typically developed children were also assessed in the Tsao et al. study, and those children were also more likely to socialize in child-directed activities than in adult-directed ones. Similar results emerged are reported by Mashburn et al (2008) who showed that preschool children who were in less rigid and less structured classrooms engaged in more teacher-reported social engagement with teachers and other peers compared to children in classrooms that were more rigid. The children in this study included typically developing children.

A different example explored a specific social intervention aimed at teaching turn-taking skills in preschool children with disabilities (Stanton-Chapman & Snell,

2011). During free play activities, during which children chose what activities, materials, and people with whom they interact, an interventionist taught the children verbal and nonverbal ways to interact with others through play. This would be considered a child-directed experience, with a teacher embedding learning opportunities to teach and promote use of social skills through play. An instructor being involved in setting up a playful environment in which peers are likely to interact is DAP. In this study, preschool children with disabilities increased their play and peer engagements, and their solitary play behaviors decreased after the intervention. The type of instruction in this study is different than child-directed practices alone, because an instructor was involved with play and attempted to enhance social skills. This type of practice is more developmentally appropriate than child-directed practices alone.

In summary, there appears to be support that child-directed activities have an influence on social skills development and use. The research on social skills development in preschool children is more focused on children with disabilities, but there is also at least some that target typically developing children too. The only differences are that children with disabilities require a teacher to initially teach them how to interact with other peers, and encourage them to communicate with others during play, which is scaffolding or embedded learning. There is a difference in a pure child-directed practice and a child-directed practice with embedded learning, and an instructor embedding is more influential on prompting social skills. It was also concluded that children socialize more with adults in adult-oriented activities, but more with peers in child-directed. In

addition, similar to research of DAP on language and cognitive development, there were no experimental studies which instruction practices were randomly assigned.

DAP and Behavior

Within the guidelines set forth for DAP teaching strategies, it is suggested to promote appropriate behaviors and decrease likelihood of challenging behaviors in early childhood classrooms by using specific instructional qualities (Fox, Hemmeter, Snyder, Binder, & Clarke, 2010). These include acknowledging/encouraging appropriate behaviors, having rapport with the child, giving feedback, modeling behaviors, having developmentally appropriate and interesting materials available, arranging the class in small groups so there is a good child-adult ratio, and having a consistent schedule. These methods are consistent with developmentally appropriate practices, and are based on the Teacher Pyramid Model (e.g., Fox et al., 2003). The model consists of three different strategies aimed at promoting emotional development, and how to prevent/address problem behaviors in early childhood environments. The three strategies include universal, secondary, and tertiary (Fox et al., 2003)

Universal strategies are the initial strategies and are used to promote social and emotional development as well preventing problem behaviors for all children. Examples of this include building positive relationships with all the children and focusing on interactions with children to learn how to respond to challenging behaviors. Using universal strategies to decrease problem behavior has been supported research within the last 20 years (Blair, Fox & Lentini, 2010; Joseph & Strain, 2004).

Secondary strategies are useful for children who are at risk. The approach is to teach social skills and other appropriate behaviors to the individual child in need. The secondary strategies are also beneficial for the classroom level by giving strategies that focus on the importance of children engaging in order to prevent problem behaviors, setting up physical environments so children have opportunities to engage, and intentionally teaching social and emotional skills to all children (Joseph & Strain, 2004).

Lastly, tertiary strategies of the Teaching Pyramid model are when behavior persists and an individualized behavior plan needs to be developed by several relevant team members. Tertiary strategies can be things such as an Individualized Educational Plan or having accommodations (e.g., behavior therapy, speech therapy) in order to prevent challenging behaviors. Tertiary strategies are evidence-based approaches that help decrease challenging behavior in children who have persistent problem behaviors (e.g., Blair, Fox, & Lentini 2010; Fox, Dunlap, & Cushing, 2002). Specifically, children with behavior or developmental disorders may require unique plans, which should consist of preventing problem behaviors and promoting positive ones.

Other research focuses more specifically on DAP and the attempt to decrease preschool children's problem behaviors. Mashburn et al (2008) measured instructional practices using a reliable observational tool, the CLASS, and compared them to teacher ratings of children's problem behavior using the Teacher-Child Rating Scale (TCRS). Participants were over 2,400 preschool children in a variety of different preschool settings. When classroom climates included DAP-specific instructional characteristics, results

indicated there were fewer teacher-reported problem behaviors. Such characteristics included: reassurance with the children, were encouraging, provided comfort, gave directions and feedback about behaviors, and had appropriate behavioral management techniques. These characteristics were linked to teacher's self-report of fewer problem behaviors and are consistent with DAP.

Clarke-Stewart, Lee, Allhusen, Kim, and McDowell (2006) also linked classroom practices to children's behavior with four-year-old children. Participants were either from the U.S. or Korea. In the U.S. the children were enrolled in preschool programs while Korean children were enrolled in either preschool or kindergarten programs. One measure assessed teachers' beliefs of classroom practices, which was the Modernity Scale of Children-rearing Educational Beliefs. This self-report scale has been used in past research to discriminate between traditional teacher-directed practices and DAP, but could be outdated since it was developed in the mid 1980s. Two other reliable observational instruments assessed the degree to which instructors actually used DAP in their classrooms (i.e., Classroom Practices Inventory (CPI) and the Observational Record of Caregiving Environment (ORCE). Additionally, the behaviors of the children were evaluated using a self-report measure (i.e., The Teacher Report Form of the Child Behavior Checklist) and an interval time sampling observational measure (the ORCE).

Results indicated that teachers from Korea had more of a teacher-directed style than the U.S., in which the U.S. had practices more like child-directed activities and instructional environments consistent with DAP. Children's behaviors differed in many

aspects between the two countries. American children were rated by their teachers as having less internalizing and externalizing behaviors than Korean children. On the other hand, Korean children were rated higher on self-reliance and sustained attention. Lastly, there were no observed differences in anger, aggression, or noncompliance (Clarke-Stewart, et al., 2006). It was predicted that the teacher-directed classrooms would have more frequent occurrences of externalizing problem behaviors, but opposite results emerged. The U.S. population used developmentally appropriate practices and there were fewer reported behavior problems.

In summary, the body of research on how instruction styles impact children's behavior shows that DAPs are a good option for promoting appropriate behaviors and for preventing challenging ones. The Teaching Pyramid is a conceptually and empirically-based resource for how to use DAPs (Clarke-Stewart et al., 2006; Mashburn et al, 2008;).

Teacher's and Preservice Teacher's DAP Beliefs

Teachers' beliefs about practices may be related to what type of teaching style they have. Using developmentally appropriate practices was linked to teacher's self-reported beliefs of DAP, using the Teacher Beliefs Scale (Maxwell, McWilliam, Hemmeter, Ault, & Schuster, 2001). In this study, the participants were K-3rd grade teachers from 40 different public elementary schools. The TBS is a Likert scale that has items consisting of statements directly from NAEYC recommendation of early childhood teaching practices, and they reflect developmentally appropriate practices. It also consists of developmentally inappropriate practices, which are not consistent with

recommendations of early childhood education. The researchers used multiple assessments to relate the perspectives of pre-school teachers' teaching philosophies and their actual practices, including two different self-reports and observations. The participants were 57 teachers from different types of programs including, childcare settings, preschool programs, and Head Start programs (Maxwell et al., 2006).

Results indicated that teachers who implemented child-directed practices more often than teacher-directed had beliefs that were more related to DAP. On the other hand, teachers who practiced more teacher-directed activities than child-directed were less likely to have DAP beliefs and had more “traditional” ones, which were defined as a direct instruction with a teacher leading the classroom activities. McMullen et al. (2006) found similar results in that instructors who used child-directed activities the most had beliefs that were more closely aligned with DAP than those who did not instruct using child-directed activities.

Other recent research supports the idea that early childhood educators who had stronger developmentally appropriate beliefs were more likely to use DAP than teachers who had less of a DAP belief system. Using the Teachers Beliefs Scale (TBS)¹, the Instructional Activities Scale (IAS), and an observational tool the Classroom Practice Inventory (CPI), 40 kindergarten teachers from an urban city in India, were assessed on their beliefs, stated practices, and actual practices of DAP (Hedge & Cassidy, 2009). The TBS and IAS are subscales under the Teacher Beliefs and Practices Survey (TBPS), which is a revised version of the original measure of DAP, the Teacher Questionnaire

(Charlesworth et al., 1991). The researchers gave surveys first before observing the teachers, to eliminate any biases when completing the survey. Overall the results revealed that teachers' beliefs were more developmentally appropriate than their stated or actual practice (Hedge & Cassidy, 2009). That is, instructors were using DAP much less than what they reported about their beliefs about DAP. It is important to mention the participants were from India, and results may not generalize to other populations (e.g., U.S. Americans).

In summary, early childhood teachers who have more beliefs for DAP, generally use DAP in their classrooms, compared to teachers who have less beliefs regarding DAP. Moreover, research also suggests that early childhood teachers, overall, have more DAP beliefs about classroom practices than actual implementation of those practices. This finding could be due to the teachers filling out the surveys in a way that they appear favorable/desirable, which is not uncommon when filling out surveys. This evidence is important when researching teacher's beliefs about DAP, because it is clear that beliefs are not a definite indicator for level of actual use of DAP in early childhood classrooms. Also, a factor that was consistent across the research that was not outlined above, is that having an actual teaching experience was correlated with more developmentally appropriate beliefs, as compared to not having experience (e.g., Akin, 2013; File & Gullo, 2002; Kim, 2011; Maxwell et al., 2001; McMullen, et al., 2006). These studies that assessed experience as a factor of DAP beliefs also cited several previous research suggesting that having more experience has an effect on beliefs. Examples of experience

used in past research can include being an actual preschool teacher, being further along in their education, or being an intern as a requirement for earning a degree.

Given that a teaching philosophy or belief can have an impact on actual teaching practices, there has also been research on pre-service teachers beliefs about appropriate teaching practices in preschool. The research on pre-service teacher perspectives is relatively new, but there is already evidence about their beliefs that developmentally appropriate approaches are the best methods of teaching (e.g., Akin, 2013; Kim, 2011). Sixty-five early childhood students from a university completed the TBS to assess their beliefs about DAP. Results indicated that the majority of the participants believed it was important to use practices that represent DAP (Kim, 2011). File and Gullo (2002) also found similar results where undergraduate early childhood students believed it was important to use practices consistent with DAP.

Akin (2013) also used the TBS to assess pre-service teachers beliefs. The participants were 507 students from four different universities in Turkey. Results indicated that the participants had beliefs consistent with the items that described DAP (Akin, 2013). In this study, it was mentioned that there was a stronger preference for items that described practices that were predominantly child-centered, compared to teacher-centered, which is a developmentally appropriate viewpoint.

Rentzou and Sakellariou (2011), assessed 55 pre-service kindergarten teachers that were recruited from a Greek University. Unlike the majority of U.S. education programs in universities across the country, the students in Greece start have teaching

experiences after the completion of their general education course requirements (i.e., second year). Thus, they are still considered students because they are still enrolled in college, even though they have teaching experience much earlier than U.S. students. Again, the TBS and IAS were used to assess beliefs and reported practices of DAP and DIP. Results indicated a difference in reported beliefs and practices. There were higher beliefs in DAP, than actual practices of DAP, which is consistent with the literature on practicing teachers and their reported beliefs and practices.

In general, preservice teachers, most of whom are likely undergraduates, have beliefs that are consistent with DAP. This finding suggests that preservice teachers are being taught the appropriate ways of instructing in early education. All of the literature on pre-service teachers' beliefs used similar tools and yielded similar results. A strength of the literature is that many different populations and countries have been studied and have yielded similar results.

Statement of Problem and Hypotheses

As stated by the NAEYC, DAP suggests that mainly child-directed practices with teacher embedding are the appropriate methods of instructing, and the evidence supports that recommendation. Specifically, DAP guidelines suggest that in child-directed practices, instructors should organize the environment with materials that encourage play and communication, and they should be actively involved with play by interacting with them and embed learning opportunities to build skills. Guidelines from DAP also suggest that it is acceptable to use instruction at times, but this should not be the majority of the

day, and more opportunities for embedding learning via play should take place throughout the day. If direct instruction takes place, the developmentally appropriate way to do this is to focus on building skills, such as writing and reading. (Clarke-Stewart, et al., 2006).

Using child-directed practices with instructor embedding helps with typical developing children, as well as with children who have delays or disabilities. These DAP environments help enhance the children's cognitive abilities, language abilities, and also benefits their social skills. DAP environments also have a positive impact on the behavior of both atypical and typically developing children's behavior.

There are many inconsistencies and potential problems in this area of research. The majority of studies did not randomly assign their groups to certain kind of intervention, but used pre-existing groups. Also, the way in which studies defined groups was very inconsistent, unclear, and sometimes subjective. For instance, some studies defined groups based on whether they predominantly practiced activities that were teacher led or child led, but others assigned groups based on what they were simply exposed to like play materials or academic materials. Another potential issue is that the characteristics of participants that were used across the literature were widely different. Typically developing children, children with disabilities and delays, and children with a low Socio Economic Status were some of the participants included. Comparing practices across studies with very different participant characteristics makes it hard to validate the effects of the intervention. Lastly, given that data are frequently collected using

observational tools, the majority of studies did not include reliability measures for the direct observations. Collecting observations reliably is critical in this body of research, because it decides how to operationally define different groups (large, small) and practices (child and adult-directed activities). Thus, lacking reliability data affects the validity of results arising from the studies, because readers are not sure data was collected accurately, and procedures were carried out appropriately.

Nevertheless, even with methodical issues within in this body of research, research has consistently demonstrated that use of DAP in preschool classrooms result in greater gains in many components of children's development, compared to instructional environments that are not DAP. For this reason, it is still important to assess pre-service teachers knowledge of what constitutes as DAP. Likewise, the research is limited and new on pre-service teacher's views about DAP. Another main focus of this study was to assess pre-service teachers opinions about how DAP may affect certain outcomes of children, specifically their academic, language development, social skills, and behaviors. Also, the study will assess how different teaching experiences may be related to participants' beliefs of DAP, intended DAP, and perception of how DAP impact children's development. Lastly, it is the first study to our knowledge, that assesses pre-service teacher's intended future practices of DAP.

It was predicted that beliefs about what DAP is, intended future use of DAP, and the view of how teaching practices impact children's developmental outcomes, will be related to one another positively for each participant. It also was predicted that

knowledge, intended DAP use and expectations about DAP impact on child's behavior will differ across experience. Specifically, participants with any sort of teaching experience were expected to have higher scores on each of the three scales (TBS, IAS, and DAP Vignette) than those who have no experience. Those with experience will have higher scores on each of the four categories in the Vignette (cognitive, social skills, behavior, and language). This prediction is based on the possible amount of exposure to the topic of DAP and DIP because they are further along in there programs and have actual experience.

CHAPTER II

METHOD

Participants

A total of 53 pre-service teachers participated in the study. Participants were recruited from advanced level undergraduate courses in Early Childhood Education (ECE) and Child Development and Family Studies (CDFS) courses. Of the participants, 50 (94.30 %) were female and only 3 (5.70 %) were male. Most of the participants were in their early 20's, ranging in age from 19-38 years old ($M = 22.42$, $SD = 3.80$). Table 1 presents a summary of the demographics of the full sample.

Participants were enrolled in one of two undergraduate programs at MTSU (i.e., ECE and CDFS) with an emphasis on preschool education. These majors were chosen due to their training for careers in early childhood environments (i.e., birth-grade 3) in which DAP is expected to be practiced. Participants were recruited from 3000/4000 level courses so they likely would have completed most of the coursework within the major. Most ($n = 49$; 92.5 %) of the participants were enrolled in ECE. Three participants were enrolled in CDFS programs; one participant did not specify her major. The average total number of college credits earned was 84.74 ($SD = 39.36$), and the average total number credits earned in their major was 36.45 ($SD = 30.02$). However, there was a considerable number of the participants that did not answer the questions asking about total credits earned (18 missing) or total credits earned in major (22 missing).

A total of 31 participants (58.5 %) had residency, practicum, or actual teaching experience; 22 participants (41.5 %) did not have any such applied experience. Only 2 people reported that they had actual teaching experience, of 6 and 12 months' duration, respectively. As for specific experience, 8 participants were enrolled and 4 had completed the Preschool Practicum. A total of 18 participants were enrolled in the Infant and Toddler Practicum and 6 had completed it. Only 5 participants were enrolled in Residency I Early Childhood Education, and the rest had not completed or were not yet enrolled in it. Lastly, none of the participants had enrolled or completed Residency II Grades Pre-K through 3rd Grade, CDFS Professional Seminar, or CDFS Internship.

Instruments

Demographic Survey. A demographics survey was developed to assess characteristics of the participants that may impact beliefs and practices, and also to control for possible extraneous variables (See Appendix A). The following demographic information was obtained: age, gender, academic major, number of hours in major completed, number of hours total completed, internship experience, practicum experience, residency experience, and actual teaching experience.

Teacher Beliefs and Practices Scale (Kim & Buchannan, 2009). The Teachers Beliefs and Practices Scale (TBPS) is a 72 item scale assessing one's beliefs and activities related to teaching practices (see Appendix B). There are two subscales within the TBPS, the Teacher's Beliefs Scale (TBS), with 42 items, and the Instructional Activities Scale (IAS), with 30 items. The

Table 1

Demographic variables by full sample and experience group

	Full Sample (<i>n</i> = 53)		Experience (<i>n</i> = 31)		No Experience (<i>n</i> = 22)	
	<u>N(%)</u>	<u>M(SD)</u>	<u>N(%)</u>	<u>M(SD)</u>	<u>N(%)</u>	<u>M(SD)</u>
Age		22.42 (3.80)		22.84 (3.79)		21.82 (3.83)
Cred. Hrs		84.74 (39.36)		99.20 (38.32)		65.47 (32.75)
Cred Hrs Maj.		36.45 (30.02)		46.76 (30.58)		1.14 (0.35)
Gender						
Male	50(94.3)	-	29(93.5)	-	21(93.5)	-
Female	3(5.70)	-	2(6.50)	-	1(6.50)	-
Major						
ECE	49(92.5)	-	30(96.8)	-	19(86.4)	-
CDFS	3(5.7)	-	0	-	3(13.6)	-
Other	1(1.9)	-	1(3.2)	-	0	-
Experience						
Actual Teaching	2(3.8)	0.36 (1.88)	2(6.40)	0.64 (2.50)	0	
Preschool Pract						
Enrolled	8 (15.1)		(8)25.8			
Completed	4 (7.5)	-	(4)12.9	-		-
Infant/Tod Pract						
Enrolled	18(34.0)		18(58.1)			
Completed	6 (11.3)	-	6 (19.4)	-	0	-
Res I Early	5(9.4)	-	5(16.1)	-	0	-
Res II prek-3	0	-	0	-	0	-
CDFS Prof Sem	0	-	0	-	0	-
CDFS Intern	0	-	0	-	0	-
Semesters of Experience?						
0	26					
1	(49.1)					
2	18(34)					
3	4(7.5)					
	5(9.4)					

TBS is designed to assess the beliefs about the importance of DAP methods, and the IAS measures how frequently teachers and future teachers practice DAP in their classrooms. The scale items are reflective of the NAEYC guidelines for DAP. All of the TBS items are rated on a 5-point Likert scale (1 = at all important, 5 = extremely important). The IAS items are also rated on a 5-point Likert scale (1 = almost never, 5 = very often).

This scale takes concepts directly from the recommendations from NAEYC guidelines, so questions on the assessments reflect developmentally appropriate practices. Some examples of DAP from both subscales are: It is ___ for teachers to provide opportunities for children to select many of their own activities; ___ Select from a variety of learning areas. It also has items that reflect developmentally inappropriate practices, which may be useful to see if pre-service students plan on implementing methods based on a teaching philosophy that is not recommended. Examples of DIP items from both subscales are: It is ___ for children to work individually at desks or tables, most of the time; ___ Circle, underline, and/or mark items on worksheets. The IAS also is widely used and is an acceptable measure of teacher's perspective on their frequency of using activities in the classroom that are related to DAP.

The first step in scoring the TBS and IAS is to reverse score the items that are describing developmentally inappropriate practice (DIP). DIP's are beliefs about instructional practices that are not recommended and are not developmentally appropriate in preschool environments. A total score then is computed by adding up the responses for each item. The maximum total score for the TBS is 210 and for the IAS is 150. Higher

scores on both scales represent stronger beliefs of DAP and stronger intended practices of DAP, and lower scores are weaker beliefs and more intended practices of DIP.

Psychometric properties of the TBS and IAS suggest moderate support. Internal consistency has been studied for both subscales. The results for the TBS showed acceptable reliability (Cronbach's $\alpha = .858$), and the IAS had good reliability and very close to criteria for acceptable levels ($\alpha = .787$; Kim & Buchannan, 2009). Factor analyses also were conducted within the same study to examine the structure of the TBS and IAS. Results indicated the items are measuring concepts of DIP and DAP. Results also indicated moderate positive correlations between the scores of the survey and actual observations of classroom teaching from researchers using the ECERS, $r = .332$ for TBS and $r = .455$ for IAS.

Also within the same study, construct validity was evaluated using Pearson Product Moment (PPM) between the total score on the TBPS and TEAS. The TEAS is a measure that has been used in research to assess teacher's attitudes towards early childhood instruction and teaching practices. High scores on the TEAS represent a strong belief for DAP. Results indicated acceptable construct validity between the two scales ($r = .332$) (Kim & Buchannan, 2009). Content validity was also utilized in the past using experts in the field (Kim & Buchannan, 2009). Overall, the results indicated acceptable reliability and validity for the measures.

The TBS and the IAS were used in the current study to assess pre-service teachers' beliefs and their stated future practices of DAP. This is the first study, to our

knowledge, that assessed inexperienced pre-service teachers' possible future practices of DAP. Only one other study used actively enrolled students to measure their actual practices of DAP, but they already had teaching experiences (i.e., Rentzou & Sakellariou, 2011).

Vignette Assessment. The Vignette Assessment was developed for this study to assess each participant's perceptions about how DAP affect the outcomes of preschool children's cognitive skills, language, social skills, and behavior. There were two variations of the scenarios, one that described an example of a teacher implementing DIP and the other DAP, in the same classroom environments and with the same children (see Appendix C). After reading the scenario, the participant completed a 16-item questionnaire, using a 5-point Likert scale (1 = this will not improve at all, 5 = this will improve a great deal) to indicate expected improvement in 4 areas of the target child's development. Each question asks to what extent the teaching practices in the scenario would result in positive outcomes for the specific skill set or behavior pattern of children in the scenario, including cognitive, language, social skills, and overt behavior (see Appendix C). This assessment was used in the current study to measure expectations of how implementing DAP in classrooms can affect the outcomes of preschool children's skills and behaviors.

Scoring on the Vignette Assessment involved totaling the items for each area of child development (i.e., language, cognitive, social, and behavior) as well as calculating a total score for all 16 items. There are four items for each area, so the maximum score for

each area is 20, which represents the respondent's expectation of improvement for that area of skill. Scores for the total can range from 16 – 80. Higher scores on this assessment represent expectation of more improvement in child's behavior as a result of teaching practices.

Procedure

Data collection began once approval from the IRB was obtained (See Appendix D). The researcher went to the classrooms in which the professors agreed to have their students take the survey. First, an informed consent letter was given to the students to complete (see Appendix E). As stated in the consent form, participants completed the survey anonymously to ensure confidentiality. The researcher handed out packets, half of which had a DIP scenario and half that had a DAP scenario as the vignette. Each survey packet included a vignette and all three of the additional assessments (i.e., demographics questionnaire, TBPS, and Vignette Assessment items), but the order of the assessment tools was randomized to control for order effects. It took participants between 15 and 25 minutes to complete.

CHAPTER III

RESULTS

For the full sample, the mean score for the TBS was 158.84 ($SD = 14.87$), and for the IAS was 104.12 ($SD = 10.65$). An independent samples t-test evaluating the predicted improvement in child development, as measured by the Vignette Assessment, indicates a significant group difference $t(44) = -6.30, p < .0001$, with those reading the developmentally appropriate scenario expecting more child improvement ($M = 59.70, SD = 8.64$) than those reading the DIP scenario, ($M = 42.91, SD = 9.40$). TBS and IAS scores across these two groups (i.e., DAP and DIP scenarios) did not differ.

It was predicted that beliefs about what DAP is, intended future use of DAP, and the view of how teaching practices impact children's outcomes would be related to one another. Specifically, scores on the TBS, IAS and Vignette of DAP total scores would be positively correlated and the TBS and IAS will be negatively correlated with the DIP Vignette total score. This prediction was based on research showing that scores on the TBS and IAS are positively correlated with one another. Further, it was predicted that such views also would be predictive of expectations of the impact of DAP on a specific child's development. Pearson product moment correlations were used to test these hypotheses. See Tables 2 (DAP scenario) and 3 (DIP scenario) for the correlation coefficients for these analyses. The analyses partially supported these hypotheses. As predicted, results indicated that the TBS and IAS total scores were significantly positively correlated with one another, but neither were related to the total score on the

Table 2

Correlations among TBS, IAS, and Vignette for DAP scenario

	IAS	Vig Tot	Vig Comm	Vig Cog	Vig Soc	Vig Beh
TBS	.55**	.21	.13	-.06	.27	.29
IAS		.22	.12	.10	.21	.25
Total Vig			.87**	.77**	.71**	.76**
Vig Comm				.67**	.54**	.52*
Vig Cog					.33	.39
Vig Soc						.40

*p < .05; **p < .01; ***p < .001

Table 3

Correlations among TBS, IAS, and Vignette for DIP scenario

	IAS	Vig Tot	Vig Comm	Vig Cog	Vig Soc	Vig Beh
TBS	.53**	.35	.27	.25	.27	.29
IAS		.15	.24	.03	.21	.25
Total Vig			.86**	.90**	.58**	.76**
Vig Comm				.79**	.34	.39
Vig Cog					.37	.54**
Vig Soc						.40

*p < .05; **p < .01; ***p < .001

Vignette Assessment for the DAP scenario. Contrary to predictions, however, there also was a significant positive correlation between the TBS and IAS total scores but none with the Vignette Assessment for the DIP scenario.

Additional correlational analyses were conducted using the Vignette subscores and TBS and IAS to determine patterns of predicted improvement in child development for each scenario. Pearson Product Moment correlations were calculated between each of the four Vignette Assessment subscores and the TBS and IAS. For the DAP vignette, there was no significant relationship between any Vignette subscore and the TBS or IAS (see Table 2). The pattern between the subscores indicates a significant positive correlation between the communication subscore and the other three subscores (i.e., cognitive, social, and behavior).

For the DIP Vignette, there was no significant positive relationship between the TBS or IAS with any of the Vignette subscores. The pattern of relationship among the subscores shows a significant positive relationship between vignette cognitive subscale and the communication and behavior subscales, but not with the social skills score (see Table 3).

Finally, it was predicted that knowledge, intended DAP use and expectations about DAP impact on child's development would differ across experience with teaching. Specifically, participants with experience were predicted to have higher scores on each of the three scales (TBS, IAS, and Vignette) as well as on the Vignette subscales (i.e., cognitive, social skills, behavior, and language). This prediction was based on research

that indicates that the amount of exposure to the topic and the actual application/use of DAP and DIP within their training experiences can positively effect DAP beliefs. MANCOVAs were conducted to assess group (experience) differences on the TBS, IAS, and Vignette Assessment by Vignette type (i.e., DAP or DIP). Results indicated no significant interaction, $F(1, 42) = .62, p = .71$, and no significant differences between the experience groups, $F(6, 39) = .198, p = .975$, but a significant effect for Vignette type, $F(1, 42) = 9.2, p < .001$. Follow up comparisons were conducted for each dependent measure (i.e., TBS, IAS, Vignette Assessment total and the four the subscales). No significant interaction was found for any of the measures, and no experience group differences were found for any of the dependent measures. Child outcome expectations, as measured by the Vignette assessment, were significantly different for the scenario type, with those evaluating the DAP environment reporting more child improvement than those with the DIP scenario for total score and all subtest scores. Table 4 provides mean scores (and SDs) for all dependent variables by experience group and vignette type.

Table 4

Dependent variables for experience by scenario groups

	Experience		No Experience	
	<i>DAP</i>	<i>DIP</i>	<i>DAP</i>	<i>DIP</i>
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
TBS	158.27(13.83)	157.85(10.54)	153.88 (16.87)	159.10(18.71)
IAS	104.20(12.59)	104.23(9.30)	101.50(4.99)	104.60(11.39)
Total Vig	58.40(9.93)	42.92(9.20)	62.13(5.19)	42.90(10.16)
Vig Comm	14.67(2.77)	11.38(3.62)	16.38(2.20)	10.50(3.44)
Vig Cog	14.07(2.94)	11.62(3.38)	15.88(2.42)	11.50(3.10)
Vig Soc	15.80(2.93)	10.46(2.57)	16.25(1.67)	10.90(3.03)
Vig Beh	13.87(3.27)	9.46(2.47)	13.63(2.88)	10.00(3.46)

CHAPTER IV

DISCUSSION

Research indicates that developmentally appropriate teaching practices have positive impacts on children's development. Specifically, research shows that if a preschool environment includes developmentally appropriate teaching practices, then improvements in children's development such as cognitive abilities, language and communication, use of social skills is expected (e.g., Chien et al., 2010; Connor et al., 2006; Fulgini et al., 2012; Mashburn et al., 2008; Mills, et al., 2014), and there are fewer problem behaviors as compared to developmentally inappropriate environments (e.g., Blair et al., 2010; Fox et al., 2010, Joseph & Strain, 2004; Stanton-Chapman et al., 2011). In addition, research suggests that some teaching practices can help improve children's development, such as using direct instruction to focus on academic topics for the majority of the day, as long as those techniques are embedded in child-focused activities and don't dominate the teaching environment (Camilli, 2010; Chien et al., 2010; Connor et al., 2006; Fulgini et al. 2012). Thus, it is suggested that some direct instruction and whole group activities can occur, just not for the majority of the day, and the rest should be dedicated to more developmentally appropriate teaching practices (i.e., child-directed activities, embedding learning opportunities). In addition, research suggests that preschool instructor's beliefs about developmentally appropriate practices are positively related to actual practice. That is, the closer an instructors belief system is to developmentally appropriate teaching practice, then the more likely that their actual

instructing is more DAP, as compared to a more DIP viewpoint. Lastly, research has shown that students in undergraduate training programs that train those for careers in early childhood education environments generally have developmentally appropriate beliefs (Akin 2013, Hedge & Cassidy, 2012; Kim 2011; McMullen et al., 2006).

The current study was designed to assess undergraduate pre-service teachers' beliefs/knowledge of what constitutes as developmentally appropriate practice in early childhood education and how those factors are related to expected child outcomes. Students' intended future use of DAP was assessed as well as their viewpoints on how developmentally appropriate or inappropriate practices can impact different areas children's development. Finally, we investigated how teaching experience was related to these variables.

The total mean scores for the IAS and TBS were 104 and 158, respectively. Materials for these scales indicate that higher scores on these two scales indicate a stronger endorsement for DAP beliefs and practices, but descriptors (e.g., moderately appropriate perspective) or "cutoff scores" are not provided. Research on the TBS and IAS focuses on the relationship between the two scales, as well as relationships with other variables such as teacher-child relationships (e.g., Kim, 2011). Thus, it is difficult to analyze the meaning behind the total mean scores for the TBS and IAS. The highest possible score on the IAS is 150, so a mean score of 104 suggests a moderate intent to use DAP instructional activities; likewise, the highest score on the TBS is 210, so a mean of 158 in this sample suggest a moderate belief in the value of DAP.

As predicted, the results indicated that participants who read the DAP scenario indicated more expected improvement in child development in all areas assessed as compared to the participants who read the DIP scenario. These results indicate that the participants expected that DAP would lead to better improvement in children's development in cognitive, social, language, and behavior, than DIP. Interestingly, they reported these expected improvements even though the scenarios were globally described rather than DAP or DIP focusing on specific skills development.

Next, it was predicted that beliefs about what DAP are, intended future use of DAP, and the view of how teaching practices impact children's development, all would be related to one another. Specifically, scores on the TBS, IAS and Vignette of DAP total scores were predicted to be positively correlated and the TBS and IAS were predicted to be negatively correlated with the DIP Vignette total score. The results somewhat reported the hypotheses. First, TBS and IAS scores were positively correlated for all participants, indicating that the more DAP one's beliefs, the more likely they were to indicate intended use of those practices. Also, these scales were both positively correlated with expected child outcomes for those with the DAP scenario. These findings indicate that those who believe and intend to use DAP expected improvement in children's skills when the children were exposed to DAP. However, participants with the DIP scenario also had TBS and IAS scores positively correlated with child outcomes. These results suggest that belief and intended use of DAP was also positively related to expected child outcomes when the children were exposed to DIP, which was not predicted. One reason for this

relationship could be that the DIP scenario has some appropriate teaching practices included (e.g., small group activities, some direct teacher instruction) so some positive relationship between practices and development could be expected. Another reason may be that the practices described are too vague. If the scenarios gave more examples and details to what the instructors specifically do during specific activities, then the relationship between expected improvement in child development and beliefs/intended future use for the DAP scenario may have been stronger than the participants with the DIP scenario.

Additional correlational analyses were conducted using the vignette subscores to determine patterns if there were different patterns of expected improvement in child development for each scenario (i.e., DAP and DIP). Specifically, participants with the DAP scenario had scores with significant positive relationships for Vignette subscore communication and subscores cognitive, social, and behavior. This indicates participants with the DAP scenario believed that when children's communication abilities were being positively impacted by teaching practices in the scenario, then an increase in other abilities like social skills, cognitive, and behavior were expected, a developmentally appropriate viewpoint. Additionally, there was a significant positive relationship the cognitive subscale and the communication subscale and behavior subscale, for participants who completed DIP scenario. Some positive relationships in the DIP scenario are expected, and are not technically inappropriate viewpoints, because some of the practices being described can help enhance children's development. However, the pattern

of positive relationships suggests improvements with cognitive development would be related to communication and behavior, but not social skills. This is an interesting pattern and is consistent with the outcome data on DAPs, which show improvement in socialization and interaction skills in children.

It also was predicted that knowledge, intended DAP use and expectations about DAP impact on child's behavior would differ across participants with and without teaching experience. Specifically, participants with any sort of teaching experience were expected to have higher scores on each of the three scales (i.e., TBS, IAS, and Vignette) as well as the DAP Vignette assessment subscores than those who had no experience. The results did not support this hypothesis. Specifically, the results indicated that none of the dependent measures were different across experience groups, regardless of scenario type. This finding suggests that experience was not related to developmentally appropriate viewpoints and teaching practices and expectations in an early childhood education scenario. Previous research has shown some support for the relationship between experience and DAP beliefs, but that was not the case in this study. The lack of group differences may have been affected by the small sample size and may also have been affected by the small amount of teaching experience of those in the "experience group". The amount of experience among the participants was primarily 1 or 2 semesters. It is likely that this brief experience did not impact DAP beliefs or expectations.

Limitations and Directions for Future Research

There were many limitations of the study. First, the sample size was small and included primarily all pre-service teachers from the education major and few from early childhood development. The small and relatively homogenous sample limits the generalizability of the results and well as limited the group comparisons we were able to conduct. Specifically, there was very little variability in experience between the participants, in that the participants mostly had similar amounts of teaching experiences (see table 1). Additionally, we originally proposed to compare education and early childhood majors, but the limited sample did not allow for that analysis. Additionally, not all participants completed the full survey, so some analyses had smaller samples. Specifically, there was data missing from the questions relating to how many hours of classes completed. Future studies with the busy pre-service majors might consider a shorter survey or an online survey that could be completed at a participant's leisure.

Another primary limitation of this study is the Vignette assessment. The wording of the questions for the Vignette assessment may also have affected scores. That is, the directions state to rate how each teaching practice might impact a child's development, using a 5-point rating scale. Never in the directions did it state anything about identifying if the scenario was developmentally appropriate viewpoint. Therefore, we do not know how the participant viewed the appropriateness of the teacher behavior in the scenarios. Additionally, the DIP scenario did involve several DAP teacher behaviors. It may have been difficult to discriminate between the DAP and DIP practices as they were described

in the scenarios. In future research, the differences between DAP and DIP practices could be more clear. Specifically, the Vignette Assessment could be revised so that practices in each scenario are more clearly DAP or DIP, and more detail could be provided to describe specific target skills to which the DAP is being applied; this specificity may help to assess the participant's understanding of which skills may be most affected by the teaching techniques employed. Further research is needed to assess whether or not the scenarios are valid, and if the Vignette assessment questions are reliable and valid. Finally, the use of scenarios as a valid method for assessing pre-service teachers' potential for actual use of these techniques needs to be evaluated. Further pursuing empirical work in these areas can help to advance our understanding of how pre-service teachers perceive and potentially use DAP with young children.

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APPENDICES

APPENDIX A

DEMOGRAPHIC FORM

Do not include any personally identifiable information on this form to ensure your anonymity.

Tell us about yourself:

1. Major:
 - A) Early Childhood Education
 - B) Child Development and Family Studies
 - C) Other (specify) _____
2. Number of credit hours completed total:
3. Number of credit hours completed in major:
4. Age: _____
5. Gender:
 - A) Male
 - B) Female
6. Do you have residency practicum, or actual teaching experience?
 - A) Yes (go to number 7)
 - B) No (Stop here)
7. If answered yes above, indicate how much experience you have
 - A) Actual Teaching Experience (specify years of experience and what grades or age group):
 - B) Preschool Practicum (check one):
 - Currently enrolled: _____
 - Completed: _____
 - C) Infant and Toddler Practicum (check one):
 - Currently enrolled: _____
 - Completed: _____

D) Residency I Early Childhood Education (check one):

-Currently Enrolled: _____

-Completed: _____

E) Residency II Grades Pre-K through 3 (check one):

-Currently Enrolled: _____

=Completed: _____

F) Internship for Child Development and Family Studies: (check what applies to you)

CDFS 3390 CDFS Professional Seminar (100 hour internship)

-Currently enrolled: _____ -Placement:

-Completed: _____

HSC 4101 Internship: CDFS (300 hour)

-Currently enrolled: _____ -Placement:

-Completed: _____

APPENDIX B

TEACHER BELIEFS AND PRACTICES SCALE

Recognizing that some things in education programs are required by external sources, what are **YOUR OWN PERSONAL BELIEFS** about early childhood programs? Please circle the number that most nearly represents YOUR BELIEFS about each item's importance for early childhood programs. (1 = Not at all important; 5 = Extremely important)

1. Rank the following (1 - 6) by the amount of influence you believe that each has on the way you plan, or will plan, and implement instruction, *after considering children's needs*.

Please use each number only once.

(1 = Most influence; 6 = Least influence)

Parents	_____
School System Policy	_____
Principal/director	_____
Teacher	_____
State Regulations	_____
Other teachers	_____

PLEASE READ BEFORE BEGINNING.

When answering the following questions, please circle the number that most nearly represents your belief of each item's importance for preschool programs.

	Not at all Important	Not very Important	Fairly Important	Very Important	Extremely Important
2. As an evaluation of children's progress, readiness or achievement tests are _____.	1	2	3	4	5
3. To plan and evaluate the curriculum, teacher observation is _____.	1	2	3	4	5
4. It is _____ for activities to be responsive to individual children's interests .	1	2	3	4	5
5. It is _____ for activities to be responsive to individual differences in children's levels of development .	1	2	3	4	5
6. It is _____ for activities to be responsive to the cultural diversity of students.	1	2	3	4	5
7. It is _____ that each curriculum area be taught as separate subjects at separate times.	1	2	3	4	5
8. It is _____ for teacher-child interactions to help develop children's self-esteem and positive feelings toward learning.	1	2	3	4	5
9. It is _____ for teachers to provide opportunities for children to select many of their own activities.	1	2	3	4	5
10. It is _____ to use one approach for reading and writing instruction.	1	2	3	4	5

	Not at all Important	Not very Important	Fairly Important	Very Important	Extremely Important
11. Instruction in letter and word recognition is _____ in preschool.	1	2	3	4	5
12. It is _____ for the teacher to provide a variety of learning areas with concrete materials (writing center, science center, math center, etc.).	1	2	3	4	5
13. It is _____ for children to create their own learning activities (e.g., cut their own shapes, decide on the steps to perform an experiment, plan their creative drama, art, and computer activities).	1	2	3	4	5
14. It is _____ for children to work individually at desks or tables most of the time.	1	2	3	4	5
15. Workbooks and/or ditto sheets are _____ in my classroom.	1	2	3	4	5
16. A structured reading or pre-reading program is _____ for all children.	1	2	3	4	5
17. It is _____ for the teacher to talk to the whole group and for the children to do the same things at the same time.	1	2	3	4	5
18. It is _____ for the teacher to move among groups and individuals, offering suggestions, asking questions, and facilitating children's involvement with materials, activities, and peers.	1	2	3	4	5
19. It is _____ for teachers to use treats, stickers, and/or stars to get children to do activities that they don't really want to do.	1	2	3	4	5
20. It is _____ for teachers to regularly use punishments and/or reprimands when children aren't participating.	1	2	3	4	5
21. It is _____ for teachers to develop an individualized behavior plan for addressing severe behavior problems.	1	2	3	4	5
22. It is _____ for teachers to allocate extended periods of time for children to engage in play and projects.	1	2	3	4	5

	Not at all Important	Not very Important	Fairly Important	Very Important	Extremely Important
23. It is _____ for children to write by inventing their own spelling.	1	2	3	4	5
24. It is _____ for children to color within pre-drawn forms.	1	2	3	4	5
25. It is _____ to read stories daily to children, individually and/or on a group basis.	1	2	3	4	5
26. It is _____ for children to dictate stories to the teacher.	1	2	3	4	5
27. It is _____ that teachers engage in on-going professional development in early childhood education (e.g., attend professional conferences, read professional literature).	1	2	3	4	5
28. It is _____ for children to see and use functional print (telephone book, magazines) and environmental print (cereal boxes, potato chip bags).	1	2	3	4	5
29. It is _____ to provide many daily opportunities for developing social skills (i.e., cooperating, helping, talking) with peers in the classroom.	1	2	3	4	5
30. It is _____ that books, pictures, and materials in the classroom include people of different races, ages, and abilities and both genders in various roles.	1	2	3	4	5
31. It is _____ that outdoor time have planned activities.	1	2	3	4	5
32. It is _____ for parents/guardians to be involved in ways that are comfortable for them.	1	2	3	4	5
33. It is _____ for strategies like setting limits, problem solving, and redirection to be used to help guide children's behavior.	1	2	3	4	5
34. It is _____ for teachers to integrate each child's home culture and language into the curriculum throughout the year.	1	2	3	4	5
35. It is _____ for teachers to solicit and incorporate parent's knowledge about their children for assessment, evaluation, placement, and planning.	1	2	3	4	5

	Not at all Important	Not very Important	Fairly Important	Very Important	Extremely Important
36. It is _____ to establish a collaborative partnership/relationship with parents of all children, including parents of children with special needs and from different cultural groups.	1	2	3	4	5
37. It is _____ for the classroom teacher to modify, adapt, and accommodate specific indoor and outdoor learning experiences for the child with special needs as appropriate.	1	2	3	4	5
38. It is _____ that services (like speech therapy) be provided to children with special needs in the regular education classroom by specialists within the context of typical daily activities.	1	2	3	4	5
39. It is _____ that teachers maintain a quiet environment.	1	2	3	4	5
40. It is _____ to provide the same curriculum and environment for each group of children that comes through the program.	1	2	3	4	5
41. It is _____ to focus on teaching children isolated skills by using repetition and recitation (e.g., reciting ABCs).	1	2	3	4	5
42. It is _____ to follow a prescribed curriculum plan without being distracted by children's interests or current circumstances.	1	2	3	4	5
43. It is _____ to plan activities that are primarily just for fun without connection to program goals.	1	2	3	4	5

FOR THE FOLLOWING QUESTIONS, PLEASE THINK ABOUT HOW OFTEN WOULD CHILDREN IN YOUR CLASSROOMS DO THE FOLLOWING ACTIVITIES. (NOTE: FOR EACH ITEM THINK ABOUT HOW OFTEN YOU WOULD IMPLEMENT THE ACTIVITY BEING DESCRIBED, IN THE FUTURE WHEN YOU ACTUALLY START TEACHING.)

	Almost Never (less than monthly)	Rarely (monthly)	Sometimes (weekly)	Regularly (2-4 times a week)	Very Often (daily)
1. build with blocks	1	2	3	4	5
2. select from a variety of learning areas and projects (i.e., dramatic play, construction, art, music, science experiences, etc.)	1	2	3	4	5
3. have their work displayed in the classroom	1	2	3	4	5
4. experiment with writing by drawing, copying, and using their own invented spelling	1	2	3	4	5
5. play with games, puzzles, and construction materials (e.g., Tinker Toys, Bristle Blocks)	1	2	3	4	5
6. explore science materials (e.g., animals, plants, wheels, gears, etc.)	1	2	3	4	5
7. sing, listen, and/or move to music	1	2	3	4	5
8. do planned movement activities using large muscles (e.g., balancing, running, jumping)	1	2	3	4	5
9. use manipulatives (e.g., pegboards, Legos, and Unifix Cubes)	1	2	3	4	5
10. use commercially-prepared phonics activities	1	2	3	4	5
11. work in assigned ability-level groups	1	2	3	4	5
12. circle, underline, and/or mark items on worksheets	1	2	3	4	5
13. use flashcards with ABCs, sight words, and/or math facts	1	2	3	4	5
14. participate in rote counting	1	2	3	4	5
15. practice handwriting on lines	1	2	3	4	5
16. color, cut, and paste pre-drawn forms	1	2	3	4	5
17. participate in whole-class, teacher-directed instruction	1	2	3	4	5

	Almost Never (less than monthly)	Rarely (monthly)	Sometimes (weekly)	Regularly (2-4 times a week)	Very Often (daily)
HOW OFTEN DO CHILDREN IN YOUR CLASS:					
18. sit and listen for long periods of time until they become restless and fidgety	1	2	3	4	5
19. have the opportunity to learn about people with special needs (e.g., a speaker or a character in a book)	1	2	3	4	5
20. receive rewards as incentives to participate in classroom activities in which they are reluctant participants	1	2	3	4	5
21. see their own race, culture, language reflected in the classroom	1	2	3	4	5
22. get placed in time-out (i.e., isolation, sitting on a chair, in a corner, or being sent outside of the room)	1	2	3	4	5
23. experience parents reading stories or sharing a skill or hobby with the class	1	2	3	4	5
24. engage in child-chosen, teacher-supported play activities	1	2	3	4	5
25. draw, paint, work with clay, and use other art media	1	2	3	4	5
26. solve real math problems using real objects in the classroom environment that are incorporated into other subject areas	1	2	3	4	5
27. get separated from their friends to maintain classroom order	1	2	3	4	5
28. engage in experiences that demonstrate the explicit valuing of each other (e.g., sending a card to a sick classmate)	1	2	3	4	5
29. work with materials that have been adapted or modified to meet their needs	1	2	3	4	5
30. do activities that integrate multiple subjects (reading, math, science, social studies, etc.)	1	2	3	4	5

APPENDIX C

VIGNETTE ASSESSMENT

Scenario 1 (DAP Scenario, will delete before distributing survey).

Ms. Brown is the lead preschool teacher with one assistant teacher in a self-contained classroom. There are 20 children between the ages of 3-5 years old in the classroom daily; fifteen are typically developing and 5 have various developmental delays and disabilities. Ms. Brown organizes the daily schedule with many opportunities for the children to choose the activities in which they want to engage. The children in the class spend the majority of their day in small groups or individual activities, often engaging in free-play with peers. The teachers set up free-play environments in ways that increase the likelihood that children interact with other peers, and learn through self-exploration. Additionally, teachers are involved with play by taking opportunities during free-play to teach the children age-appropriate developmental skills, such as identifying colors out of a book while reading a story. They spend some time devoted in whole group or teacher-led instruction during the day. Teacher instruction is provided mostly during small group activities or during free-play activities naturally.

Scenario 2 (DIP scenario, will delete before distributing the survey)

Ms. Brown is the lead preschool teacher with one assistant teacher in a self-contained classroom. There are 20 children between the ages of 3-5 years old in the classroom daily; fifteen are typically developing and 5 have various developmental delays and disabilities. Ms. Brown organizes the daily schedule with little opportunities for the children to choose the activities to engage in. The children in the class spend the majority of their day in large group and teacher-directed activities, such as all children in a class participating in an art activity simultaneously at the table while the teachers instruct to them what to do. The teachers have some time devoted to letting the children engage in free-play, but usually are in whole group or teacher directed activities. During free-play, the teachers let the children play with what they want, and have no influence on what occurs during their playtime activities. The materials and toys that children play with vary in their functions or purpose (i.e., playing with a string and beads to work on motor skills).

Below is a list of areas of a preschool child's development that may be impacted by participation in a structured preschool. Think about the children in Ms. Brown's class that you just read about. For each item below, indicate how much of an improvement you would expect to see in that area of the children's development over a course of one school year. Use the rating scale of 1-5 (1= this will not improve at all, 5 = this will improve a great deal).

1) Number of words spoken

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

2) Complexity of language used (e.g., difficulty of word pronunciation)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

3) Letter and word knowledge (e.g., alphabet or word naming)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

4) Receptive language (e.g., verbal comprehension)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

5) Counting numbers

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

6) Rhyming and sound playing

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

7) Reading comprehension abilities (e.g., name of character in story)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

8) Naming/saying numbers

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

9) Social engagement among peers (e.g., interacting by using communication)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

10) Social engagement among adults (appropriate reciprocal conversations)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

11) Cooperative play among children (taking turns, problem solving).

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

12) Solitary play

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

13) Disruptive (e.g., aggression, anger, destructive) behaviors

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

14) Crying, changes in mood

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

15) Avoiding activities or others (e.g., both peers and adults)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

16) Compliance (e.g., to adult directives)

1	2	3	4	5
This will not improve at all	This will improve a little bit	This will moderately improve	This will improve a good deal	This will improve a great deal.

APPENDIX D

CONSENT LETTER

Principal Investigator: Brian Raftery

Study Title: Developmentally Appropriate Practice (DAP): An Examination of Pre-Service Teachers.

Institution: MTSU

Name of participant: _____ Age: _____

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

1. Purpose of the study:

You are being asked to participate in a research study, because the study pertains to appropriate teaching practices and classroom environments in early childhood education (preschool), and the major you are enrolled in likely covers this topic somewhere during your educational experience in undergraduate school (e.g., during junior year).

2. Description of procedures to be followed and approximate duration of the study:

If you decide to participate, you will be asked to complete a survey. The survey will take approximately 10-15 minutes to complete.

3. Expected costs:

n/a

4. Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

n/a

5. Compensation in case of study-related injury:

n/a

6. Anticipated benefits from this study:

a) The potential benefits to science and humankind that may result from this study are to assess the knowledge of future teachers (college students) of what actually is an accepted teaching practice, in the jobs that you possibly would be working in the future.

b) The potential benefits to you from this study are that you can see yourself what kinds of teaching practices are actually practiced in the environments that you will likely be working in at a future time.

7. Alternative treatments available:

n/a

8. Compensation for participation:

n/a

9. Circumstances under which the Principal Investigator may withdraw you from study participation:

n/a

10. What happens if you choose to withdraw from study participation:

There will be no consequences.

11. Contact Information. If you should have any questions about this research study or possible injury, please feel free to contact Brian Raftery at bmr3p@mtmail.mtsu.edu or my Faculty Advisor, Dr. Ward at Kimberly.Ward@mtsu.edu.

12. Confidentiality. All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board or Federal Government Office for Human Research Protections, if you or someone else is in danger or if we are required to do so by law.

13. STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I have read this informed consent document and the material contained in it has been explained to me verbally. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.

Date

Signature of patient/volunteer

Consent obtained by:

Date

Signature

Printed Name and Title

APPENDIX E

IRB APPROVAL LETTER

IRB**INSTITUTIONAL REVIEW BOARD**

Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129
IRBN005 Version 1.0 Revision Date 06.03.2015

EXEMPT APPROVAL NOTICE

10/23/2015

Investigator(s): Brian Raferty

Department: Psychology

Investigator(s) Email: bmr3p@mtmail.mtsu.edu

Protocol Title: "Developmentally Appropriate Practice (DAP): An Examination of Pre-Service

Teachers' Beliefs and Future Use of DAP "

Protocol ID: 16-1092

Dear Investigator(s),

The MTSU Institutional Review Board, or a representative of the IRB, has reviewed the research proposal identified above and this study has been designated to be EXEMPT. The exemption is pursuant to 45 CFR 46.101(b) (1) **Evaluation/Comparison of Instructional Strategies/Curricula.**

The following changes to this protocol must be reported prior to implementation:

- Addition of new subject population or exclusion of currently approved demographics
- Addition/removal of investigators
- Addition of new procedures
- Other changes that may make this study to be no longer be considered exempt

The following changes do not have to be reported:

- Editorial/administrative revisions to the consent of other study documents
- Changes to the number of subjects from the original proposal

All research materials must be retained by the PI or the faculty advisor (if the PI is a student) for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

NOTE: All necessary forms can be obtained from www.mtsu.edu/irb.