

6-26-2020

How Can Play-Based Learning in Primary Grades Be Used to Support Teaching of State Standards?

Laura Smith
smithl11@csp.edu

Follow this and additional works at: https://digitalcommons.csp.edu/teacher-education_masters



Part of the [Early Childhood Education Commons](#)

Recommended Citation

Smith, L. (2020). *How Can Play-Based Learning in Primary Grades Be Used to Support Teaching of State Standards?* (Thesis, Concordia University, St. Paul). Retrieved from https://digitalcommons.csp.edu/teacher-education_masters/28

This Thesis is brought to you for free and open access by DigitalCommons@CSP. It has been accepted for inclusion in Graduate Teacher Education by an authorized administrator of DigitalCommons@CSP. For more information, please contact digitalcommons@csp.edu.

How Can Play-Based Learning in Primary Grades Be Used to Support Teaching of State
Standards?

Laura Smith

Concordia University, St. Paul

MA in Education: Curriculum and Instruction

ED 590: Dr. Kelly Sadlovsky

Second Reader: Professor Elisabeth Amirahmadi

June 18, 2020

Table of Contents

Abstract.....	4
Chapter One: Introduction.....	5
Definitions.....	6
Conclusion.....	7
Chapter Two: Literature Review.....	9
What is Play?.....	10
Free Play.....	10
Continuum of Play.....	11
Perspectives on Play.....	13
The Relationship Between Play and Learning.....	13
The Teacher’s Role in Play.....	15
Using Play/Play-Based Learning to Meet State Standards in Primary Grades.....	16
Easing Transitions and Strengthening Alignment between Preschool/Primary Grades.....	17
Connecting Play-Based Learning to Academic Content.....	18
Dramatic Play.....	22
Literacy.....	24
Math.....	25
Science.....	25
Assessment.....	28
Challenges to/Supports Needed for Successful Implementation of Play-Based Learning.....	29
Time Constraints/Increased Academic Expectations.....	29
Teacher Pre-Service Preparation.....	31

Additional Challenges.....	32
Needed Supports.....	33
Teacher Identity.....	36
Reality of Play Implementation.....	39
Conclusion.....	40
Chapter Three: Research Summary and Conclusion.....	42
Need for Clarity on Definitions Related to Play.....	42
Children’s View of Play.....	43
Teacher Involvement in Play.....	43
Teacher Preparation.....	44
Play Related to Content Areas and Social-Emotional Development.....	44
Assessment.....	45
Challenges to Successful Implementation of Play-Based Learning.....	45
Supports Needed for Successful Implementation of Play-Based Learning.....	45
Review/Importance of Play-Based Learning to Support the Teaching of State Standards...	46
Conclusion Regarding How Findings Answer the Research Question.....	47
Chapter Four: Discussion/Application/Future Studies.....	49
Summary of Research Insights Gained that Will Improve Instructional Practice.....	49
Examples of How Research Will Be Applied for Instructional Improvement.....	51
Suggestions for Possible Future Studies.....	53
Conclusion.....	54
References.....	56

Abstract

Although data supports the benefits of play and play-based learning as instructional tools for children birth to age eight, many teachers of children in grades kindergarten-second grade succumb to a narrow selection of tools chosen for academic teaching and learning. Lack of common play definitions, the pressure of accountability standards, high stakes testing, lack of training in play theory, and conflicted feelings about how to implement play-based learning all contribute to this. The research focus question for this paper was: How can play-based learning in the primary grades be used to support the teaching of state standards? This document, using a variety of journal materials and a report, sought to address the debate about what play is and outline the validity of play and play-based learning as useful, developmentally appropriate tools for standards-based instruction in the primary grades. It also addressed challenges to delivering play-based learning and supports needed for effective implementation of play-based learning.

Key words: developmentally appropriate practice, play, continuum of play, play-based learning, primary grades, state standards

Chapter One: Introduction

Play as a teaching tool in the primary grades has virtually vanished in most classrooms. Much research exists documenting the benefits of play for children ages birth-eight (Jay & Knauss, 2018; Nolan & Paatsch, 2018) and play is one component of developmentally appropriate practice (Coppole & Bredekamp, 2009). A report by the American Academy of Pediatrics reviewed by Miller and Almon (2009) summarized the crucial nature of play to child development as play facilitates the development of creativity, imagination, physical, social-emotional, and cognitive skills.

What were considered first and second grade expectations only a few years ago are now kindergarten learning goals. At the same time, play, a major stress reliever, has disappeared from the school day (Miller & Almon, 2009). Not only are teachers under more pressure due to greater testing and accountability standards, children are as well. Play provides an outlet for stress and pressure while supporting the development of children's social-emotional skills. These social-emotional skills become the foundation upon which the ability to handle other aspects of life and learning are built. Executive function skills such as self-regulation, attention span, and planning develop through play. At a time when children need play more than ever to balance the pressure caused by the push for academic achievement, it has been taken away.

Due to elusive common definitions related to play, lack of training in play pedagogy, pressures of accountability standards, and lack of clarity regarding the implementation of play-based learning, many educators fail to recognize play as a valid means of purveying academic content and choose more teacher-directed, didactic practice (Miller & Almon, 2009). This paper analyzed research based on the guiding question: How can play-based learning in the primary grades support the teaching of state standards?

Definitions

There is often misunderstanding about what play is, so a first step in elevating play as a component in teaching kindergarten-grade two children, is to define key terms related to play, so all stakeholders (teachers, administrators, and parents) are on the same page when it comes to discussing play and related terms. Following are definitions to provide a base for readers of this paper to include developmentally appropriate practice (which encompasses play), a broad definition of play and kinds play, and common educational terms related to the topic. Types of play will be expanded in the literature review.

Developmentally appropriate practice (DAP) is an instructional approach for children ages birth-eight years that emphasizes knowing a child’s developmental level while also aiding them in accomplishing challenging but reachable goals. Instruction takes into account the child’s age and development, individual needs, as well as a learner’s social and cultural background. DAP matches curricular goals and activities to a child’s development and incorporates research-based teaching practices regarding how children best grow and engage in learning. A strong philosophy of human development principles provides the basis for instruction (Copple & Bredekamp, 2009). This is Vygotsky’s *zone of proximal development (ZPD)* in action.

Play is multifaceted and has various definitions. A common understanding of play in early learning has been defined as “...freely chosen, actively engaging, opportunistic, pleasurable, creative, and concerned more with means than ends...” (Pyle & Danniels, 2017, p. 274). Pyle and Danniels (2017) have expanded the definition of play to include a *continuum of play*. This has extended the understanding of play from “free play” only to a continuum of play-based learning options that can provide for holistic child development and be used to teach various curricular requirements. Five kinds of play are identified: free play, inquiry play, collaboratively

created play, playful learning, and learning through games. Play-based learning occurs when teachers need to teach a specific skill and use playful, engaging, experiences to the degree possible to teach that skill. “Focused learning through play and experiential learning are also ways to describe classroom practices linked to adult goals” (Miller & Almon, 2009, p. 65).

For the intent of this paper, the term *primary grades* is used to indicate children kindergarten through grade two. *Formal methods* are considered teacher-chosen, with the goal of skill mastery through practices such as seatwork, repetitive drills, and a focus on academic gains in reading and math (Walsh, McGuinness, Sproule, & Trew, 2010). *Learning standards* are short, written expectations of student knowledge and performance at each grade level. They are used as guiding principles in public-school curriculum, instruction, and evaluation from local to national levels (The Glossary of Education Reform, 2013). *High stakes testing* is “...any test used to make important decisions about students, educators, schools, or districts, most commonly for the purpose of accountability” (The Glossary of Education Reform, 2014, para 1) while *accountability* is the attempt by school or government personnel to ensure students are learning grade-level standards and teachers are teaching mandated standards effectively.

Conclusion

The program essential question “In light of early childhood theories, philosophies, and current research in the field regarding best practice, what is the future of programming and practice in early education?” connects to the research question in multiple ways. According to current theories, philosophies, and current research in early childhood education, children learn best through play (Jay & Knaus, 2018). Yet in today’s primary grade classrooms, children are often being denied the opportunity to learn through play. This current practice is out of sync with what is known regarding how children best learn. Consequently, there needs to be advocacy for play

and curricular modifications to bring future early education programming and practice into alignment with current theory, philosophies, and documented research regarding the benefits of play and playful learning. This document examined definitions of play, the connection between play and learning, the teacher role in play, and topics related to using playful learning to address state standards. It also spoke to barriers surrounding successful implementation of play and play-based learning in the primary grades as well as supports needed to counter these challenges. Information in the following pages provides a literature review of related professional material, a summary and conclusion of the research findings; discusses research discoveries, offers an application of the findings to current practice, and addresses implications for future studies.

Chapter Two: Literature Review

A number of articles were reviewed that examined the topic of play in the primary classroom. While there is much literature about the role of play in the preschool years as a positive mode of curriculum and instruction delivery, there is much less information about utilizing play as a means of teaching children in grades kindergarten through grade two-especially when high academic standards are also expected to be met (Nolan & Paatsch, 2018). Research found that play is beneficial to kindergarten through grade two students, but the amount of play has been reduced in primary classrooms since the advent of rigorous academic standards (Bowdon, 2015; Miller & Almon, 2009). Even when schools have gone so far as to mandate play-based teaching, it is still difficult to implement successfully. This is due to a variety of reasons including lack of common language regarding definitions of play (Miller & Almon, 2009; Pyle & Alaca, 2018; Pyle & Danniels, 2017; Wallerstedt & Pramling, 2012), high expectations regarding accountability standards and student performance (Miller & Almon, 2009, Pyle & Danniels, 2017; Taylor & Boyer, 2020), lack of teacher training in child development and play-based methods (Brown, 2017; Fowler, 2016; Jay & Knaus, 2018; Walsh et al., 2010), and teacher identity issues amongst peers (Nolan & Paatsch, 2018).

Several topics of information related to the use of play-based learning to support state standards arose during the literature review. Various definitions of play, the relationship of play and learning, the role of teacher involvement in play, categories of information related to using playful learning to address state standards, challenges to providing play-based learning, and the needed supports for the successful implementation of play and play-based learning in the primary grades all emerged as relevant categories and will be discussed in the following literature review.

What is Play?

Shared language provides understanding regarding the purpose and benefits of play. “An appropriate definition of play is necessary for effective play policy development and implementation” (Stegelin, 2005, p. 76). There are many definitions of play, which has made it difficult for the educational community to formalize a mutual understanding of play that provides a platform from which all educators can work (Miller & Almon, 2009; Pyle & Danniels, 2017; Wallerstedt & Pramling, 2012).

There continues to be a need to better define play and improve teacher proficiency/confidence levels in using play to meet academic content (Walsh et al., 2010). Teachers held much diversity in their definitions of “play”. Miller and Almon (2009) found that much of what instructors considered play, researchers found to be teacher-directed activities that included minimal child-chosen play, creative thinking, or inventiveness. The researchers also found that children need a balance of child-initiated, open-ended free play as well as teacher-guided playful learning for growth in all domains of early childhood development.

Free Play

Play has been defined as child-chosen and child-directed activities (Lozon, & Brooks, 2019; Miller & Almon, 2009; Pyle & Danniels, 2017). This type of play may be referred to as “free play”. Children need to feel secure so process-type, open-ended activities can be explored in a relaxed environment. Children explore and examine many materials, objects, and toys as play occurs. Exploration skill usually precedes a focused play stage. Play is critical for healthy development of the *whole-child* which encompasses the areas of cognitive, physical, social-emotional, language, and creativity (Miller & Almon, 2009). Play mirrors the child’s larger social and cultural contexts such as the child’s home and community background (Stegelin,

2005). True play is generally thought of as child-chosen, process-driven, and self-motivating. Types of play include large-motor, small-motor, mastery, rules-based, construction, make-believe, symbolic, language, arts, sensory, rough-and-tumble, and risk-taking play (Miller & Almon, 2009).

Continuum of Play

In a qualitative study by Pyle & Danniels (2017), an expanded definition of play-based learning was developed. In this study, 15 kindergarten rooms were observed and 15 teachers were interviewed to determine how play-based learning was used in a suburban, urban, and smaller urban district in Ontario, Canada. Ontario had implemented a full-day kindergarten program over the course of five years (2010-2014). The program kept the earlier program's academic standards but required a play-based pedagogical approach in teaching those standards. The program also outlined individual and social skills children were to learn during their kindergarten year. Rigorous academic expectations, personal care skills, and social-emotional skills all were to be addressed with DAP.

The 15 teachers in the Pyle & Danniels (2017) study had a diverse background of experience and were at different points in the implementation of the full-day kindergarten program. Seven of the teachers had attended trainings where play-based learning was discussed but was not the trainings' only topic. Six teachers had no experience in learning through play, and two teachers had taken courses selected independently to learn more about using play-based learning. Data, collected twice over three years, was used to determine the use of play-based learning in these classrooms. In the first phase, researchers used field documentation, photos, and videos to collect information witnessed during 56-70 hours of observation in three classrooms. In the

second phase, the remaining 12 classrooms were observed for ten or more hours. Data was detailed using the same activities as in phase one.

Researchers focused on the environment in the classroom, instructional moments such as circle time, and both child/teacher-led play activities. The teachers were also interviewed for approximately an hour each regarding the purpose of play for kindergarten children, how play facilitated learning, and the responsibility teachers should own in children's play. During the data analysis, five groupings of play materialized. These included play types that fell along a continuum of child-directed to teacher-directed play. Child-directed free play was at one end of the spectrum. Next was inquiry play, then teacher and child-directed collaborative play, then playful learning, and finally, learning through games which is generally teacher-directed. Teacher involvement existed at various levels for each kind of play and the authors placed teacher and child-directed collaborative play as a "middle ground" between direct instruction (teacher-directed) and free play (child-directed). It was noted that play on the continuum should be child-centered, but not necessarily child-directed (Pyle & Danniels, 2017).

Data from teacher interviews identified four categories of information. These included: kindergarten teacher viewpoints regarding the role of play in kindergarten, learning in play contexts, kinds of play utilized in the classrooms, and the teacher's responsibility regarding involvement in students' play. Major findings from this study noted that an expanded menu of play/instruction types were needed to go beyond free play, direct instruction, and a teacher-involved but child-initiated middle-ground play type. All kinds of play in the study provided opportunities for learning in all domains of child development. It was hoped that the definition of play-based learning as a continuum of learning practices would expand the kinds and purposes of play in the kindergarten classroom and be used to teach academic standards (Pyle & Danniels,

2017). Research found the need for an expanded definition of play beyond free play in the primary grades when using play to meet academic standards (Walsh et al. 2010).

Perspectives on Play

Many articles about play have focused on adult viewpoints (Pyle & Alaca, 2018). Recent information from children's interviews has added another dimension to the subject of play—especially as it relates to learning. Multiple scholars have noted the importance of the teacher's role in play. This differs from past perspectives which said teachers should not interrupt children's play. The level of teacher involvement in play influences children's perspectives on the interconnection of play and learning (Pyle & Alaca, 2018). Teacher involvement in play can also focus and extend learning (Lozon & Brooks, 2019).

The Relationship between Play and Learning

In a qualitative study that explored the views of kindergarten children regarding their interpretation of play and its connectedness to learning, Pyle and Alaca (2018) interviewed 134 kindergarten children in ten classrooms. The study took place in Ontario during the last year the kindergarten program was transitioning to a full-day schedule. Children were expected to reach high academic standards, but curriculum and instruction were to be play-based. The children were junior and senior kindergarteners (three to six- years-old). The researchers observed each classroom for ten hours during large and small group literacy settings as well as during play times. Observations were documented with field reports and videos. Children were also interviewed and shown photos of various educational settings (large group, small group, and play situations) and asked questions that related to identifying the activity as play or learning. Types of play and literacy activities were documented during play. Teacher involvement/noninvolvement was also noted while interviews and observations in each

classroom were compared to see if there were similar perspectives between children and researchers.

Children in all ten kindergarten classes said they learned social-emotional skills during play. Play provided teachable moments and practice for social skills, conflict-resolution, collaboration, and rules of play. Regarding academic content, researchers found that children in classrooms with multiple types of play perceived play and learning as intertwined, while children in classrooms with only free play perceived play and learning as separate concepts. For example, when literacy concepts such as writing were added to a dramatic play center, children viewed literacy (writing or looking at books) as connected to their play experiences. When children were in free play only classes and literacy skills were not integrated into their play experiences, children viewed play and literacy as separate activities. Reading was something children engaged in at times other than play periods (Pyle & Alaca, 2018).

Where the activity took place also impacted a child's view of learning as work or play. Children were more likely to say they were playing if they were on the floor and working if they were at a table. Singing was labeled play on the playground but work in the classroom. One limitation that may need further clarification in future studies was the uncertainty as to whether or not the children had a solid understanding that work and play could be separate entities but that learning could still be an outcome of play (Pyle & Alaca, 2018). Wallerstedt and Pramling (2012) also noted the need to view play and learning as integrated entities instead of separating them on the basis of various factors such as where the activity took place (home or school), the motivation for the activity (intrinsic or extrinsic), or if the child chose the activity (intentional or unplanned) and instead observe how play is a part of children's learning activities.

In a qualitative study that observed the relationship between play and learning, Wallerstadt and Pramling (2012) conducted a project that included 27 children ages six to eight years along with their three teachers. All participants were part of a three-year arts in early education research project, so the researchers were regular visitors to the children's classrooms. In this particular study, part of the larger project, the teachers were trying to teach students how to understand the beat and musical counting in order to learn what the children did with new learning during free time. The children received three music lessons aimed to assist children in developing the ability to listen to music. The lessons lasted approximately 40 minutes each, were recorded, transcribed, and interpreted. When children finished the lesson and went to free play time, several utilized what was learned during the instructional time and worked on "the beat" as they played with drums. This study found that play and learning were integrated and that children kept using the learning even when it was play time. Play was not a break from children's learning (Wallerstedt & Pramling, 2012). A limitation of this study was the small number of examples.

The Teacher's Role in Play

Teacher involvement in play also impacted the children's view of play and learning as being connected. If teachers were involved in the child's play, the children tended to view the play as being intertwined with learning (Pyle & Alaca, 2018). Literature points to the need for teachers to be involved with children's play experiences—both in planning the activity and in guiding children during play activities that "lead" development (Lozon & Brooks, 2019; Miller & Almon, 2009; Sliogeris & Almeida, 2019). Teachers need to be skilled questioners who intentionally provide guidance and scaffolding in addressing learning goals and standards (Lozon & Brooks, 2019; Taylor & Boyer, 2020). During play-based learning, the teacher should be

actively involved by extending learning based on curricular goals, student interest, and by guiding children's learning experiences (Taylor & Boyer, 2020; Sliogeris & Almeida, 2017). Through intentional conversation, teachers can use content specific language to introduce and review vocabulary and concepts specifically related to the subject being studied (Lozon & Brooks, 2019). Van Oers and Duijker (2012) name specific instructional strategies teachers can implement to extend learning during play experiences. These include "orienting...structuring and deepening ...broadening...contributing...[and] reflecting" play (pp. 518-519).

However, Pyle and Alaca (2018) found that at times, teachers were uncertain regarding when to get involved in children's play. Personal beliefs about the function of play and individual ideas about teacher responsibility regarding involvement in the child's play influenced how teachers implemented play-based learning in classrooms. Teacher's views of the importance of play impacted when and how play occurred in the classroom. It also determined how much educators implemented play-based learning in the classroom (Taylor & Boyer, 2020). Tension between the traditional free-play proponents and advocates of more traditional, teacher-led instruction was also found (Walsh, et al., 2010).

Using Play/Play-Based Learning to Meet State Standards in the Primary Grades

While increased academic expectations for young children are widely documented (Miller & Almon, 2009), the expectation that teachers will teach the standards and children will be expected to achieve the standards, remains. How then, do educators use play-the means by which research demonstrates children learn best-to meet those standards? Can play and play-based learning provide a developmentally appropriate means for meeting rigorous academic standards?

Easing Transitions and Strengthening Alignment between Preschool and the Primary Grades

Walsh et al. conducted a multi-method study (classroom observations, academic skills tests, teacher and parent interviews/surveys regarding views of curriculum and children's learning, principal interviews reflecting program impact perceptions, and child interviews addressing transition experiences) of 24 schools in Northern Ireland that were implementing a program called the Enriched Curriculum (EC) into the Years One-Four of primary school (the U.S. equivalent to prekindergarten through second grade). Children, ages four to eight years, were tracked through their first four years of formal education. The goal of implementing the program was to ease the transition of children as they moved from play-based preschools and homes into more teacher-directed elementary schools. Instructional methods in the EP utilized more play-based activities and less seatwork in order to stimulate children's imagination, social-emotional development, and participation. Literacy instruction promoted oral vocabulary development and beginning literacy skills instead of formal reading instruction. Math skills emphasized number foundations by sorting, matching and counting versus formal math skills. Outdoor play was also important (Walsh et al., 2010).

Children's learning was quantified by using the Performance Indicators for Primary Schools (PIPS), standardized tests that best reflected children's achievement who had received instruction in more didactic classroom settings versus play-based settings. In Years One and Two, as the researchers expected, the children in the play-based learning centers had lower reading scores than those children in more teacher-directed, scripted curriculum, control groups. However, in Year Three, children's scores rose and by Year Four, children in the play-based settings tested at the same levels as their classmates in a more traditional classroom. Part of the dip in scores in Year Two was attributed to the possibility that those teachers lacked play implementation

confidence and play training. This may have kept Year Two teachers from leading the children in their learning experiences and instead the teachers allowed children to learn as they were ready. Parents and teachers had concerns about the value of play as it related to reading and number proficiency. A limitation of this study may have been that not all teachers in Years One-Year Four were equally comfortable with the implementation and role of play-based pedagogy (Walsh et al., 2010).

Connecting Play-Based Learning to Academic Content

Rigorous academic content and play-based learning do not automatically align. Outcome goals are integral to standards while play is often a process-based activity (Wallerstedt & Pramling, 2012). Teachers who embed play theory in classrooms must carefully implement skills instruction via developmentally appropriate methods (Pyle & Alaca, 2018; Taylor & Boyer, 2020; Van Oers & Duijkers, 2012). In places where play is mandated as the content delivery vehicle, play is expanding, but continued support is needed to ensure curricular requirements are addressed. (Pyle & Alaca, 2018). In a meta-analysis of play-based learning, Taylor and Boyer (2020) examined theories and past research that has influenced play-based learning, types of play, as well as positive social-emotional and cognitive outcomes arising from play-based learning. They found play-based learning is child-centered and an instructional strategy that can bridge developmentally appropriate practice with content-based expectations.

In order to use play-based learning to teach grade level standards, the academic learning goal needs to be rooted in the play-based activity. Second, the experience must be understood by the children. Third, the academic information and play should connect with the child's existing knowledge, and fourth, the academic material and play-based activity need to be developmentally appropriate for the individual child (Taylor & Boyer, 2020). Depending on

how play was used, teachers reported that playful learning could be used to address academic standards if teachers designed activities to do so (Pyle & Danniels, 2017). The main role of play-based learning is for children to learn while playing.

Vygotsky noted that through play, children show growth in thought processes and in understanding the world. This is one way play can be considered a development leading activity (Taylor & Boyer, 2020). Elkind expanded on using play specifically as a leading activity for children ages four to seven (Van Oers & Duijker, 2012). Involving children in play planning also engaged learners (Pyle & Alaca, 2018). Children's views on the role of play and learning as intertwining concepts indicates classroom environments can be created that teach academic concepts and provide developmentally appropriate "leading" activities (Pyle & Alaca, 2018).

Using an inquiry-based approach in a Saskatoon, Saskatchewan grade one classroom, teacher Kirsten Kobylak (2017) conducted a researcher as participant project examining the use of play-based instructional principles to teach a space-themed science unit. The teacher aimed to connect play-based pedagogy with first grade science outcomes. A second study goal was to examine the use of play pedagogy as a valid instructional tool past kindergarten into the first grade. Kobylak also researched personal feelings of dissonance between teacher use of play in kindergarten and its disappearance from curricular documents when the teacher transitioned to first grade instruction.

Factors guiding the play-based learning unit included: balancing a child-centered curriculum while meeting required instructional objectives, ensuring children's cognition is deepened and holistic early childhood development occurs within the play-based learning context, and educating parents on the merits of play-based learning in a primary grade. Children's definitions of play and work were explored when students were queried about the meanings of play and

work, if they could learn while playing, how students self-identified play experiences, and named supplies needed for play to occur.

The space theme was chosen based on student interest and children were heavily involved in the planning and implementation of the play-based inquiry. The researcher developed an essential question for the unit, “Why is it important to explore new worlds?” to drive planning and learning. Children participated in functional play activities comprised of sensory experiences. Students explored possible moon textures, created “moon dough” (play dough), pretended flour was dust from the moon, used clay to make moon shapes, and created craters from various materials. Students participated in constructive play when children researched the International Space Station (ISS) and made a model of it, conducted experiments such as crystal growing in the ISS lab, documented and drew moon phases, authored realistic moon books, created lists of space related vocabulary words, and created a song describing a moon creation theory. Dramatic play was utilized as students pretended to be an astronaut, commander, mission expert, or scientist who conducted experiments in the ISS, role-played an astronaut’s daily workout regimen, or created craters through the recreation of meteors striking the moon. Participants played games with rules when children engaged in space-themed tag, used problem-solving skills to determine dramatic play roles and behavior rules in the dramatic play center and ISS, and took turns in the dramatic play center. Child-driven, social play arose from the listed play activities and new play scenarios began.

The teacher/researcher identified needed areas for explicit instruction. These included how to conduct research using the computer, how to identify a main idea, and instruction on note-taking skills when researching. Children also needed specific instruction on informational paragraph construction. The explicitly taught skills allowed for language arts content expectations to be

met within the context of play-based learning. The teacher/researcher also identified three specific science content standards that were addressed through the moon-themed science inquiry study.

Assessment of student learning and engagement was ongoing and included student work examples, teacher observations, anecdotal records, questioning, and participant conversations. The researcher noted that science proficiency is often conducted through a narrow lens and that using a variety of documentation methods provided a wider scope with which to gauge student learning. Other curricular outcomes met during the assessment process included "...writing, language development, cooperative behaviors, mathematical conversations, designing and manipulating objects into representations of their learning, descriptions and explanations how their ideas resulted in their projects, artistic representations, and demonstrations of their learning in relation to our inquiry question specifically related to science" (Kobylak & Kalyn, 2017, p. 40).

Findings showed that children identified work as teacher assigned duties and activities labeled play occurred when the child was in charge, learning new things, and experiencing enjoyment. Children intrinsically valued play which led to the achievement of academic goals when appropriate materials and activities were provided by the teacher. Students were highly engaged in the play-based inquiry. The role of the teacher in guiding and fine-tuning play was critical in extending learning and directing learning to meet curricular outcomes. Documentation using children's artifacts provided much data regarding student learning. Multiple learning domains were able to be addressed during play-based learning as well as cross-curricular academic expectations. Play-based learning activities were incorporated to align with curricular expectations. School-home relationships were strengthened due to family involvement in the

learning activities as families provided books, artifacts, and lined up guest speakers (Kobylak & Kalyn, 2017). A limitation of the study is that it is one example of a play-based learning situation. There is also a possibility of bias since the researcher and teacher were the same person.

Dramatic Play

Dramatic play was found to help children increase word knowledge, develop retelling skills, advance problem-solving capability, create multiple and flexible thinking abilities, and expand the capacity to shift between narrative and logical thoughts (Miller & Almon, 2009). These are all skills supporting standards-based achievement. Symbolic play and the manipulation of props and tools in dramatic play centers provided children opportunities to develop multiple literacy skills including oral language, verbal understanding, and spoken language skills (Pyle & Alaca, 2018).

In a meta-analysis using a variety of current sources, the researcher focused on an extension of dramatic play called *process drama* and its use with children ages three to eight years to develop social-emotional and executive function skills as well as to meet academic and arts standards (Brown, 2017). Process drama is teacher-guided, but also teacher-student collaborative as participants work together to design an imaginary setting and then use the context to examine a specific condition, period in history, or story. The purpose of process drama is not to perform for others, but for participants to learn a variety of skills such as role-playing, critical thinking, conflict resolution, and empathy. Brown (2017) highlights the ability of process drama to provide symbol-making practice—the ability to utilize one item for another such as pretending a cardboard tube is a hot dog, a hammer, or a wand. In this way, children developed the abstract skill of using one thing to represent another just as one must do in

curricular areas such as literacy and numeracy—using letters to symbolize a sound or word, or numbers to represent quantities.

Citing one example of process drama used with first and second graders, the researcher shared how process drama played out in a primary grade class in meeting curricular goals. Children were learning about American immigration through the story of *Odyssey* by Homer. First, children interviewed their parents and/or grandparents to learn ancestry information. Then, each child used this information to create a fictitious character to role-play as an immigrant traveling to America via Ellis Island. Literacy activities were embedded in the process drama as children designed a ship, chose what to pack and leave, played authentic games the immigrants would have played on the ship, experienced ship life, reached the destination, went through inspections at Ellis Island, chose a place to live, became candidates for jobs in America, and wrote letters home. Teacher-directed activities such as conversations and reading about historical events was also part of the unit study. During the six-week process study, children addressed cross-curricular academic standards including literacy (reading and writing), mathematics, and social studies.

At the conclusion of the six-week program, the researcher noted that students achieved beyond expectations in literacy skills such as understanding and word fluency as well as in writing, and social studies skills. Children involved in a year-long process drama program showed greater gains in empathy than children in other arts programs. The researcher also found a lack of educator knowledge about process drama and a scarcity of teacher training regarding process drama as an instructional tool. The researcher's recommendation for addressing this was for schools to utilize drama students/departments at nearby universities to tap into drama

resources (Brown, 2017). While supported by multiple documentation sources, this study was limited by the example of only one elementary-age classroom.

Literacy

Researchers found that children in classrooms with a wide variety of play types viewed literacy as integrated in their play—such as when literacy materials are included in a learning center (Pyle & Alaca, 2018). Children noted that they could write about their building creations, write stories, or write about their play activities. Children in these groups played word games such as Bingo, perused books, and participated in writing activities during playtime. Their teachers also created literacy and academically rich centers with many learning resources (Pyle & Alaca, 2018).

Play-based learning can be used to develop story creation, retelling, and summarizing skills. By using props, children can organize characters into roles and develop the ability to tell a story from beginning to middle to end. Literacy skills become more advanced as children draw, write, or videotape story creations or retells (Taylor & Boyer, 2020). Van Oers and Duijkers (2012) found vocabulary development of children in a play-based setting was better than that of children receiving more didactic word acquisition tasks. In a review of one study that included more than 1500 young children from ten nations, researchers found that the language skills of these children at age seven advanced when children were allowed to choose learning experiences rather than receive instructor-chosen lessons. The same study found that the cognitive level of the children at age seven advanced when children learned in small groups or individual play rather than in large-group settings (Miller & Almon, 2009).

Interaction with adult-provided scaffolding was shown to improve children's literacy skills. When teachers provided play centers with robust literacy support, such as a variety of paper,

pencils, pens, and books, and then demonstrated or discussed how to use these materials, children incorporated more literacy activities in play. Both teacher-led and child-led play with literacy materials encouraged literacy skill development when teachers were involved (Pyle & Alaca, 2018).

Math

Lozon and Brooks (2019) discussed the ability to use play to integrate literacy and mathematics while teaching science standards. A kindergarten child's proficiency in math (or lack of it) has been shown to be a strong indicator of a child's future success in school (Taylor & Boyer, 2020). Students who had trouble with math in kindergarten tended to have math challenges throughout schooling. Taylor and Boyer (2020) reported on a comparative quasi-experimental study that contrasted a teacher-led math program, a play-based classroom, and a control group to investigate math achievement using different teaching approaches. The group whose teachers used play-based learning showed the highest gains, the teacher-led group had the second highest gains, and the control group had the least growth.

To develop mathematical skills and abstract thinking skills, kindergarten teachers often have children use manipulatives to provide a strong foundation of concrete thinking skills in preparation for future abstract thinking skills. Play-based learning has been shown to improve both math and reading scores as instruction can be differentiated to the children's developmental level. also reported that integrating technology with play-based learning enhanced student math achievement and motivation to engage in numeracy activities (Taylor & Boyer, 2020).

Science

Lozon and Brooks also advocated for the use of play and guiding questions throughout the elementary age grades to explore concepts that connect/crossover all areas of science

(crosscutting concepts) identified in the Next Generation Science Standards (NGSS):

“...patterns, cause and effect; scale, proportion, and quantity; systems and system models; energy and matter; structure and function; and stability and change” (Lozon & Brooks, 2019, p. 89). Using observations of four specific examples of playful science and engineering experiences with children ages four-grade five, the authors outlined specific science and engineering concepts that were integrated in each activity. Through intentional instruction of scientific and engineering concepts, teachers focused children on “...asking questions...defining the problems...carrying out their plan and documenting...analyzing...building [children’s] computational thinking...and showing evidence” (Lozon & Brooks, 2019, p. 90). While several cases demonstrated the ability for teachers to tie play to science and engineering concepts, the small number of classroom examples was a limitation in this study.

Another qualitative study by Sliogeris and Almeida (2019) focusing on science examined how the combination of teacher-guided play and child-selected play helped children in the primary grades develop science skills. In addition, researchers sought to understand teacher impact on children’s science learning stemming from teacher-guided play experiences. This study took place in a rural Australian, non-government school where a play-based curriculum had been implemented in the primary grades. This pedagogy used both intentional, teacher-directed instruction along with process oriented, hands-on children’s experiences. As part of this curriculum, there was a specific play-based learning time of one and one-half to two hours, four mornings each week. Play time consisted of a variety of play centers related to student interest and current subjects of study—including science topics. Children chose a play center and were provided teacher guidance in their learning. Learning concepts were expanded during the rest of

the school day with intentional teaching of goal-oriented content related to science, reading, and mathematics.

Participants included one group of five to six-year-olds in a Foundation One class (U.S. equivalent to kindergarten). A subgroup of seven students who elected to play in the science areas during child-chosen play time provided a portion of the data. During a six-week study, teachers and children focused on a key learning: the interconnectedness of animals, habitats, and the animal's requirements for living. This theme specifically revolved around the topic of small invertebrates. Science lessons included the following components: children were introduced to the learning objective, participated in a child-chosen play session, joined a teacher-guided play-based learning period, and shared in a session to contemplate what had been learned. A variety of activities were provided during both child and teacher-guided play sessions.

Data was collected via observations that included researcher field notes, recordings of participant interactions, and student work examples. Data was transcribed and analyzed by identifying themes, and then specific learning examples were compared and matched to the learning opportunities available within the constructs of the study. The final aspect of data analysis focused on how play-based experiences helped children gain scientific concepts linked to everyday knowledge while in the classroom setting. A range of participant data was collected to reflect viewpoints of the school and children, as well as the researcher/teacher since the researcher was observer and co-teacher. This was to create a sense of trustworthiness in the validity of the study.

Major findings were provided through the examples of four case studies within the whole of the study. First, teacher-guided play influenced the activity in which children chose to engage, in a way that led children to incorporate science concepts into play. Free play did not lead to

scientific knowledge on its own. Teacher generated, open-ended questions extended learning by guiding children to connect scientific knowledge with everyday information and in developing science concepts. Play provided a familiar way for children to learn and explore new scientific concepts. Explicit introduction of key vocabulary and concepts provided a base of information which children incorporated into child-chosen activities. Dramatic play provided opportunities for student science learning. Depending on the activity, school routines and expectations both restricted and encouraged play-based learning depending on the type of activity. For example, it was found that the arrangement of materials in the classroom may have influenced whether children chose to use them (Sliogeris & Almeida, 2017). Again, a limitation of the study was the small number of participants

Assessment

Assessment is another critical component of effective curriculum and instruction. While play-based learning has been found to provide a means for teaching academic content, finding an appropriate means to assess skills addressed during play-based learning has been a challenge (Jay & Knaus, 2018; Taylor & Boyd, 2020). Because misalignment exists between play-based learning and standardized assessments, it was recommended that teachers broaden the range of assessment options available for play-based learning (Jay & Knaus, 2018). It was found that confusion existed regarding what skills to evaluate during play-based learning. To assist in this endeavor, researchers recommended that the kind of play and its purpose should be identified before the skill is assessed. Teacher notes, checklists, photographs, and video all are tools which can provide effective assessment of play-based learning (Taylor & Boyer, 2020). Play also provides material for evaluation and accountability through the use of observations and student projects (Lozon & Brooks, 2019). Playing makes the opportunity available for children to show

what is known as well as tell what is known (Wallerstedt & Pramling, 2012). Jay and Knaus (2018) included a recommendation put out by the Australian Primary Principals Association (APPA) that schools consider using multiple data points to encompass a more holistic picture of child development when assessing children. This recommendation suggested instructors go beyond academic assessment to include social-emotional aspects of development as well. The American Academy of Pediatrics report reviewed by Miller and Almon (2009) cautioned that cognitive growth should not overrun social development.

Challenges to and Supports Needed for Successful Implementation of Play-Based Learning

When examining the use of play-based learning strategies to support standards-based mandates, a number of challenges surfaced in several studies. Some barriers were policy issues needing review. Others were concerns that could be dealt with at the local and district levels. Multiple studies also spoke of supports that could assist in the successful implementation of play-based learning.

Time Constraints/Increased Academic Expectations

In *Crisis in the Kindergarten: Why Children Need to Play in School*, Miller and Almon questioned the developmental appropriateness of current kindergarten standards and the lack of time for play in most kindergarten settings. The authors also advocated for the return of a healthy balance of child-initiated play with involved teachers as well as teacher-guided, playful, targeted learning experiences. This document drew from nine studies which included the following: a time usage study by Jennifer Astuto and LaRue Allen of 142 New York City kindergarten teachers using the Early Childhood Time-Use Scale developed by the researchers; a similar study by Allison Fuligni and Sandra Hone who used the Astuto-Allen Early Childhood Time-Use Scale with 112 Los Angeles kindergarten teachers; a study of 14 kindergarten classes

in Westchester County, New York by the Sarah Lawrence College Child Development Institute; the book *A Mandate for Playful Learning in Preschool: Presenting the Evidence* by Kathy Hirsh-Pasek, Roberta Michnick Golinkoff, Laura E. Berk, and Dorothy G. Singer (2009); the journal article “Children’s Pastimes and Play in Sixteen Nations: Is Free-Play Declining?” by Dorothy G. Singer, Jerome L. Singer, Heigdi D’Agostino, and Raeka DeLong (2008); a report by the U.S. Department of Education regarding the Open Court Reading program (2008); the U.S. Department of Education Reading First Impact Study, Final Report (2008); the journal article “The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds” (2007), and the “International Association for the Evaluation of Study Age-Seven Follow-up” (2007).

Major findings from this study indicated that all forms of play, but especially child-directed, open-ended free play had been reduced to a trivial classroom activity—if it was evident at all. Test preparation, literacy, and math instruction dominated classroom time and test preparation was an everyday routine in 79% (New York) to 82% (Los Angeles) of the kindergarten classes that were studied (Miller & Almon, 2009, p. 20). Mothers and pediatricians were bothered greatly by the diminished amount of play and increased academic expectations as children have an instinctive need for play. The teachers interviewed in the study repeatedly noted that it was difficult to incorporate play into classroom activities due to time constraints and the absence of curricular-embedded play activities. Additional findings demonstrated that highly scripted, teacher-directed instructional materials were used in many kindergartens even though little research existed to validate long-range achievement (Miller & Almon, 2009). Standards-based, teacher-directed instruction had become the most prevalent form of instruction since the 1960s (Van Oers & Duijkers, 2012).

Teacher Pre-Service Preparation

Another factor working against successful delivery of play and playful learning as components of DAP included the lack of child development training for many kindergarten-second grade teachers (Fowler, 2016; Goldstein, 1997; Miller & Almon, 2009). While preschool teachers had training in play-based theory and developmentally appropriate practice, primary teachers often did not.

In a study comparing early childhood and elementary education teacher preparation programs, Fowler (2016) focused on two questions. The first question examined the degree to which the National Council for the Accreditation of Teacher Education (NCATE) elementary (Association for Child Education International-ACEI accredited) and early childhood (National Association for the Education of Young Children-NAEYC accredited) preparation programs overlapped on teacher licensure grade preparation for prekindergarten-third grade certification. The researcher found a high degree of overlap as 10% of elementary preparation programs began in preschool, 53% begin in kindergarten, 30% begin in grade one, and 6% begin in grade two (Fowler, 2016, p. 203).

Using a content analysis of the ACEI and NAEYC teacher preparation standards, the second question compared the two documents for rate of use on the following words/phrases: development, social and emotional development, special needs, community, family, observation, self-regulation, and play. These are words that reflect some of the key foundations of early childhood education. Major findings revealed that the elementary teacher standards were much less inclusive of these words than the early childhood standards were. This reflected a dissonance in the underpinnings of the two documents. NAEYC used the terms *child* and *children* while ACEI used the terms *student* or *students* to identify the learner. ACEI standards

did not include the terms *play* or *self-regulation* at all. Another interesting finding related to the use of the word *relationship*. In the NAEYC standards, the word is used in connection with *people* while the ACEI document used the term in tandem with *concepts* (Fowler, 2016). A limitation of this study may have been that it was a comparison of documents only. Additional material may have been gained from interviews of pre-service preparation faculty.

Additional Challenges

Other difficulties included pressure from school culture (teachers/administration/parents) to meet state grade-level standards (Goldstein, 1997; Nolan & Paatsch, 2017), standardized testing (Goldstein, 1997; Jay & Knaus, 2018), age-graded leveling (Goldstein, 1997), and scheduling (Bowden, 2015; Goldstein, 1997; Jay & Knaus, 2018; Miller & Almon, 2009; Stegelin, 2005). Feelings of angst were reported by some teachers who did not feel completely confident in their ability to implement a play-based curriculum while at the same time move the children along academically (Jay & Knaus, 2018; Walsh et al, 2010). Reading was the subject area that caused teachers the most concern (Walsh et al., 2010).

While teacher-guided dramatic play was found to support various literacy skills, only 12-13% of the teachers interviewed in the Miller and Almon (2009) report had adequate dramatic play supplies for their students (p. 19). Jay and Knaus, (2018) also mentioned the need for more resources in a play-based classroom. Teachers regularly testified to a gap between what they believed to be the value of sand, water, block, and dramatic play and what they believed their administrators' views to be (Miller & Almon, 2009).

Additional challenges noted by Jay and Knaus (2018) found that it took teachers extra time to plan, organize, and bring together needed play-based materials for learning activities. It also took more time to implement play-based learning than it did to use prepared materials.

Participants noted it was time-consuming to learn about the practices and theory behind play-based methods. Some teachers found they needed more space for play and that increased noise became a concern. Teachers observed that students were engaged in the activities during play-based learning, but needed guidance regarding behavior at the centers (Jay & Knaus, 2018).

Needed Supports

Supports needed for the successful implementation of play and playful learning in the classroom included the need for pre-service and ongoing training in the benefits of play and how to implement playful learning (as aspects of DAP) in the primary classroom (Jay & Knaus, 2018; Miller & Almon, 2009; Nolan & Paatsch, 2017). One finding in the Walsh study emphasized the need for teachers to receive direct instruction in DAP and its potential impact on instruction (Walsh et al., 2010). Another necessary scaffolding included support by school leadership (Jay & Knaus, 2018) and for play to be recognized as a legitimate teaching tool so the teacher was acknowledged as a valid instructor within the school culture (Nolan & Paatsch, 2017).

In a case study using qualitative methods, Jay and Knaus (2018) conducted research in a metropolitan school in Western Australia where teachers were mandated to use a play-based curriculum to address rigorous standards. Researchers sought to identify issues teachers were facing regarding the implementation of these two contrasting mandates. Researchers identified challenges and supports necessary for the successful implementation of play-based learning. Seven teachers and two administrators participated; some teachers were full-time and some were part-time. Five teachers had primary education training, two were trained in a birth-age eight early childhood perspective, and instructors had one-17 years of experience. The school in the study was selected because school leadership and staff were intentionally working on the implementation of play-based instruction.

Interviews and observations were used to collect data. All nine participants completed a recorded, semi-formal 20-40 minute interview that was transcribed by the researchers who also observed, recorded, and transcribed four team meetings during the year. Again, the researchers generated codes, looked for thematic patterns, reviewed, defined and named themes, and then produced the analyses. Themes that were identified included supports available for programs utilizing play-based learning and challenges to play-based learning (Jay & Knaus, 2018).

Regarding findings, three teachers said having a supportive administrator who believed in and was knowledgeable about play-based learning was helpful. Five teachers appreciated working with others who were also implementing play-based learning. Instructors liked being able to discuss new practices and implementation of new strategies. Four teachers noted the importance of peer meetings and four teachers mentioned that parents supported play-based pedagogy. No parents had questioned the validity of play. One teacher said it was helpful to observe another play-based classroom while another teacher valued viewing a co-worker's play-based classroom. One teacher with play experience and training was on the team and teachers noted it was very helpful. Five teachers said it was important to have a balance of play-based learning and intentional instruction (Jay & Knaus, 2018). The small study size was a limitation.

Martlew, Stephen, and Ellis (2011) focused on similar teacher support topics in a small-scale qualitative study in Scotland. The setting of the study took place in two districts that were in the process of implementing play-based learning (at times labeled active learning). Participants included six classes of children in their first year of formal education known as Primary 1 (four to five-year-old children). Researchers explored the following topics-what active learning looked like in classrooms, what teachers identified as active learning, and signs of children engaged in the learning activities.

Data was collected through teacher interviews and educators shared observations, lesson plans, examples of student work, and photos. Teacher interviews were recorded and written out. Each teacher was observed four times during the school year. During the observations, classrooms were reviewed throughout the day every ten minutes. At this time, the researcher documented teacher actions, classroom set up, and children's participation levels. Certain children who had been randomly identified and who reflected an equal gender balance were also observed three times in between classroom reviews. The child observations lasted approximately five minutes each while the researcher assessed the child's level of engagement and assigned the child a rating from one (most engaged) to five (least engaged). Classroom arrangements in all rooms supported play-based learning. Classes had similar schedules that included whole group instruction and play-based activity sessions (Martlew et al., 2011).

Findings from this study reported positive teacher attitudes toward play-based learning, but teachers held a variety of beliefs regarding the organization and purpose of play-based learning. Teachers used to a more formal approach found implementing play-based learning a challenge due partly to concerns about reaching grade level standards. Conducting meaningful skill assessment within play-based learning caused teacher concern but photos, student work, and written accounts of conversations provided feedback about student progress. Researchers documented the importance of both teacher-initiated and child-initiated play, but there was little child-initiated play or student to student interaction in any of the classrooms. Researchers suggested a possible reason for this was because of the higher pupil to teacher ratios in formal classrooms versus more staff per student in the preschool classes. In the observed classes, the pupil to teacher ratio was 25:1. Teachers who are attempting to align curricular expectations

with play-based pedagogy need preparation and support (Martlew et al., 2011). The limitation in this study involved its scope of only six classes.

Teacher Identity

In a qualitative study of an early childhood coordinator and two teachers who were beginning the process of implementing a play-based learning curriculum, Nolan and Paatsch (2018) focused on how the teachers viewed their work (the implementation of play) and the effects this had on teacher identities amongst peers. The study took place in Victoria, Australia in a Catholic primary school. One teacher was experienced and one was in the early stages (first two years) of her teaching career. The school had decided to implement play-based curriculum and instruction for children in their first year of formal schooling (U.S. equivalent to kindergarten). The teachers combined two classes of five to six-year-olds into one classroom of 49 children. Small group centers for five to six children were set up around the room and dramatic play centers were established in various places around the room. This included role-play areas with subjects such as a fruit market and props such as dress up clothes and blocks. The teachers observed the interest levels at the stations and changed the centers based on engagement levels/interest.

Both teachers were positive about implementing a play-based curriculum for students and both were versed in the philosophy of play as a valuable tool for early learning. Before beginning play-based curriculum implementation, both teachers observed play-based programs in other schools and received professional development from the researchers that included literature, information on the role and value of play in children's learning, as well as assistance in play-planning. In addition, all staff met with a play expert at the beginning of the play implementation (Nolan & Paatsch, 2018).

At the beginning of the program implementation, the coordinator and teachers wrote a document that said the purpose of the program was to increase oral language skills in children as well as increase social skill competencies. The definition of developmental play identified by the coordinator and teachers included many learning activities where children would have opportunities for intentional conversations and social skill development (Nolan & Paatsch, 2018).

Recorded interviews of the teachers and coordinator together were conducted at the beginning, middle, and end of the year. Each interview was about 45-60 minutes and was held during teacher preparation blocks or after school. Researchers also observed the classroom for two hours-twice during the second grading period and twice during the fourth grading period. Researchers scribed notes, took pictures of play plans, and photographed center resources. These materials were used as conversation starters during teacher/coordinator interviews (Nolan & Paatsch, 2018).

Among other activities, data review involved coding data and then determining themes. Inter-rater reliability was established to ensure consistency of results. A limitation of the study was its small scope. Major findings included a list of adaptations teachers must incorporate in their rooms when using play-based learning. These included using resources effectively. Teachers both talked about the need for play resources and the time it took to collect the appropriate resources for the play experience. As the year progressed, teachers felt more comfortable in finding appropriate resources and also were able to work with school personnel to ensure budget funds for future supply purposes. It also took time to find the best way to set up the room, establish appropriate guidelines for children's behavior, and to decide what/how many play experiences to have out at once. The teachers/coordinator focused on designing play-based

experiences that were linked to learning and adjusted the role they played in the students' play experiences (Nolan & Paatsch, 2018).

Other major findings related to teacher identity within the culture of peers. Teachers using play-based activities at times questioned if they were meeting grade level goals during their teaching. Teachers looked at play activities to match them to academic content to ensure they were meeting academic goals. Also, both teachers indicated peers did not understand or value play as a legitimate teaching tool. Thus the teachers felt they were not respected by other teachers, parents, or the board. The school had also instructed the teachers not to use the word *play* due to misunderstandings about the definition and value of play (Nolan & Paatsch, 2018). All of this impacted the teachers' identities as instructors.

Other factors aiding in successful implementation of play and play-based learning was the establishment of a collaborative play culture for all teachers—experienced and new, preschool and primary (Walsh et al., 2010). This included professional development in play-based learning pedagogy and implementation, the ability to visit other classrooms where teachers are implementing play and playful learning, teacher support teams, and the understanding that it takes time to make philosophical changes (Jay & Knaus, 2018; Van Oers & Duijkers, 2012). Developing a collection of resources such as play-based library materials for the school and establishing professional learning communities (PLCs) that allowed for self-reflection, pedagogical growth, and ownership of play pedagogy assisted in successful implementation of play-based pedagogy (Jay & Knaus, 2018). The integration of new information with old was an ongoing process that also provided support for teacher confidence in play-based competency and understanding (Jay & Knaus, 2018; Nolan & Paatsch, 2018).

Reality of Play Implementation

Hunter and Walsh (2014) conducted a small scale, mixed methods study in Northern Ireland of eight Foundation School classrooms. Four classrooms of Year One and four classrooms of Year Two (U.S. equivalent of kindergarten and first grade) were observed for the study. Play-based methodology was mandated for instruction along with expectations that children would also meet grade level academic standards. The purpose of the study was to examine how teachers implemented required play-based learning and how children responded to this type of curriculum and instruction. In addition to the observations, teacher questionnaires were sent to a group that comprised 26% of primary schools in Northern Ireland. A broad base of Year One and Two teachers had access to the surveys. Researchers received 155 surveys back. The surveys focused on teacher views of play, the teacher's place in play, and the role of play in the Northern Ireland Early Years curriculum. Questionnaires indicated that the vast majority of the teachers (98%) felt play was valuable, 96% believed play contributed to whole-child development, 81% understood the teacher's role in play was important, and 91% said teachers should possess expertise in play skills (Hunter & Walsh, 2014, p. 25). Other findings included that about one-fourth of teachers were unsure of how to play and deliver play activities, there was not a consensus that play always resulted in learning, and teachers were not in agreement about how often teachers should be directly involved in play.

When observing classroom play sessions, researchers scored each play session and measured nine qualities using the Quality Learning Instrument (QLI): well-being, motivation, concentration, confidence, independence, social interaction, respect, higher order thinking skills, and multiple skill acquisition. They were each ranked on a rating scale of one (low)-six (high). Each classroom was observed twice during two complete play sessions. Researchers found

classroom quality scores consistently higher in Year One classrooms versus Year Two classrooms. Overall, Year One scores averaged satisfactory/high overall (mean score of four out of six) while Year Two scores averaged satisfactory (mean score of three out of six).

The major finding of this study was that even though play-based learning was mandated through policy directives and the vast majority of teachers agreed that play-based learning was valuable to children's learning in all developmental domains, the quality of play was wanting. This was due to the demands of grade level accountability standards, lack of teacher training in how to expand educator understanding of play pedagogy, and the lack of an answer to the question of whether it was possible for play to be the means by which grade level standards were met. Researchers recommended continuing to pursue play as an integral part of the classroom setting for young children as research backed it as an important means of children's learning. Researchers suggested playful pedagogies be expanded and integrated into learning and teaching so all classroom activities become playful learning experiences (Hunter & Walsh, 2014). The small scale of the study was the limitation.

Conclusion

This chapter has reviewed literature pertaining to the use of play-based learning in the primary grades to support the achievement of state standards. "...our findings demonstrate that the integration of varied types of play that provided opportunities for teachers to join and extend the play provided contexts for the integration of play and academic learning" (Pyle & Alaca, 2018, p. 1072). Multiple definitions of play have been discussed along with perspectives on play that include the relationship between play and learning as well as the teacher's role in play-based learning. In the section dealing with the use of play/play-based learning to meet state standards in the primary grades, the topics of strengthening the preschool to kindergarten/primary grades

alignment and connecting play-based learning to state standards are addressed along with specific information linking dramatic play, literacy, math, science, and assessment to achieving academic content. Finally, findings regarding challenges to, and supports needed for successful implementation of play-based learning were documented. Following is a summary of this research along with conclusions focusing on the research question: How can play-based learning in primary grades be used to support teaching of state standards?

Chapter Three: Research Summary and Conclusion

Multiple sources documented the importance of play in young children's learning and development (Jay & Knauss, 2018; Nolan & Paatsch, 2018). Play is a positive factor in all areas of child development-cognitive, physical, social-emotional, language, and creativity (Miller & Almon, 2009). Play allows children to learn through exploration and hands-on experiences. Various examples in the literature review demonstrated how careful curriculum planning and implementation of play-based experiences also addressed grade level cognitive goals (Kobylak & Kalyn, 2017; Sliogeris & Almeida, 2017; Taylor & Boyer, 2020). While this information was documented, it was also understood that a misalignment existed between play-based pedagogy and the attainment of state standards (Hunter & Walsh, 2014). A number of factors contributed to this issue including: lack of teacher training in play-based learning pedagogy and implementation (Brown, 2017; Hunter & Walsh, 2010, Jay & Knaus, 2018; Walsh et al., 2010), pressure from accountability standards (Miller & Almon, 2009, Pyle & Danniels, 2017; Taylor & Boyer, 2020), scheduling (Bowden, 2015; Goldstein, 1997; Jay & Knaus, 2018; Miller & Almon, 2009; Stegelin, 2005), and teacher identity issues (Nolan & Paatsch, 2017). Following is a summary of literature review research findings, an examination of the issue of play-based learning as it connects to the teaching of grade level standards, and a discussion of the importance of this topic. A conclusion speaking to how the literature review answered the research question summarizes this section.

Need for Clarity on Definitions Related to Play

Research consistently reported a lack of clarity regarding the definition of play and the need for common definitions to allow all stakeholders to share a mutual understanding of play and its purposes (Miller & Almon, 2009; Pyle & Alaca, 2018; Pyle & Danniels, 2017; Wallerstedt &

Pramling, 2012). There was also a misunderstanding regarding the definition of DAP (Walsh et al., 2010). Some of the confusion about play stems from different philosophies about what play is, who should direct play, and the teacher's role in play (Pyle & Danniels, 2017). Research pointed to the need for an expanded view of play to increase play-based learning strategies available for instruction and learning (Pyle & Danniels, 2017; Taylor & Boyer, 2020; Walsh et al., 2010).

Children's View of Play

When children's perceptions of play were collected, play and learning were viewed as intertwined when a variety of play types were used within the classroom. Children also labeled activities as playing when the teacher was actively engaged in the experience and play took place on the floor or outdoors (Pyle & Alaca, 2018). When the activity was teacher assigned, children viewed it as work. When the child chose the activity, it was labeled play (Kobylak & Kalyn, 2017).

Teacher Involvement in Play

Teacher involvement was essential for successful play-based learning. Teachers needed to be involved in play planning and in guiding children's learning (Lozon & Brooks, 2019; Miller & Almon, 2009; Sliogeris & Almeida, 2019; Taylor & Boyer, 2020). Teachers also had the ability to direct and extend learning through the use of open-ended questions, specific vocabulary, and content concepts (Lozon & Brooks, 2019; Sliogeris & Almeida, 2017; Taylor & Boyer, 2020). Multiple studies found teachers were unsure of when to become involved children's play (Hunter & Walsh, 2014; Pyle & Alaca, 2018; Walsh et al., 2010) and were unsure of how to efficiently employ DAP and play-based learning in a way that would also help children master mandated academic content (Jay & Knaus, 2018; Walsh et al., 2010).

Teacher Preparation

Other factors working against successful delivery of play and playful learning as components of DAP included the lack of early childhood development training for many kindergarten-second grade teachers. While preschool teachers had training in play-based theory and developmentally appropriate practice, primary teachers often did not (Goldstein, 1997; Miller & Almon, 2009). In a comparison between elementary teacher preparation standards and early childhood teacher standards, it was found that elementary standards did not include many of the words/phrases that signaled components deemed critical to early childhood curriculum and instruction. The words play and self-regulation, symbols of early education, were not mentioned at all in the elementary teacher education preparation standards. Early childhood standards classified pupils as *child* or *children* while elementary standards spoke of learners as *student* or *students*. The word *relationships* was used as it related to people in early childhood standards but the word applied to concepts in elementary standards (Fowler, 2016).

Play Related to Content Areas and Social-Emotional Development

Play-based learning positively impacted literacy (Pyle & Alaca, 2018; Taylor & Boyer, 2020), math (Taylor & Boyer, 2020), and science content (Kobylak & Kalyn, 2017; Lozon & Brooks, 2019; Sliogeris & Almeida, 2019). Dramatic play in the kindergarten and the primary grades led to increased word knowledge, problem solving, social emotional, and executive functioning skills (Brown, 2017; Miller & Almon, 2009)—all related to academic achievement. When teachers intentionally planned play-based learning activities to target specific grade level content, play was effective for this purpose (Brown, 2017; Kobylak & Kalyn, 2017; Pyle & Danniels, 2017; Taylor & Boyer, 2020). Children in play-based classrooms were found to have overall positive experiences in social-emotional development and in attitudes toward learning (Walsh et

al., 2010). Children who participated in one-year process drama programs, versus other arts programs, showed greater growth in empathy. Children also developed the ability to work collaboratively (Brown, 2017).

Assessment

Because play experiences often did not align with standardized tests, research found some teachers unsure of how to assess play-based learning. Researchers noted the importance of identifying the play purpose before assessment and using an expanded repertoire of assessment tools. Examples were: teacher journaling, checklists, photographs, and video to document learning. Using multiple data sources that included assessment of social-emotional development was recommended (Jay & Knaus, 2018).

Challenges to Successful Implementation of Play-Based Learning

Challenges to successful implementation of play-based learning included pressure to attain goal-oriented content (Goldstein, 1997; Nolan & Paatsch, 2017) especially in reading (Walsh et al., 2010). High-stakes testing (Goldstein, 1997; Jay & Knaus, 2018) and scheduling were also barriers (Bowden, 2015; Goldstein, 1997; Jay & Knaus, 2018; Miller & Almon, 2009; Stegelin, 2005). Other challenges included time management issues such as play-based learning taking more time to plan and implement than less work intensive teaching activities (Jay & Knaus, 2018). Access to supplies for play-based learning was another concern when implementing play as a curricular tool (Jay & Knaus, 2018; Miller & Almon, 2009).

Supports Needed for Successful Implementation of Play-Based Learning

Researchers observed the need for teachers to receive expanded play pedagogy and play training to ensure effective implementation of play-based learning (Brown, 2017; Hunter & Walsh, 2010, Jay & Knaus, 2018; Walsh et al., 2010). Training included the need for direct

instruction regarding the purpose and pedagogy of DAP (Walsh et al., 2010). Other studies demonstrated that while most teachers in the study valued play in child development, there was a dissonance between instructor ideology and the actual implementation of play-based learning practices (Hunter & Walsh, 2014; Miller & Almon, 2009). Support from school administrators, additional resources for play-based learning supplies (Jay & Knaus, 2018), and play recognized as a valid teaching tool within the school culture, were additional factors providing teachers with confidence and the ability to implement play-based learning (Nolan & Paatsch, 2017).

Review and Importance of Play-Based Learning to Support Teaching of State Standards

This study explored ways that play could be used to support the attainment of state standards in kindergarten through second grade. Because play is naturally engaging to children, it was not only a means for whole-child development, but also a pressure reliever during times when standards accountability increased stress on teachers and students alike (Miller & Almon, 2009). While the appropriateness of grade level standards for kindergarten through second grade have been debated, as long as the standards remain in place, teachers are responsible for teaching the goal-oriented content, and children will be expected to learn the material. Rather than learning through didactic practices, play and play-based learning provided a better match to a young child's learning capacities and social-emotional development (Miller & Almon, 2009; Taylor & Boyer, 2020). According to Pyle and Alaca (2018):

Play-based learning contexts provide an approach that is supported by many as developmentally appropriate to kindergarten education. However, within this potentially valuable pedagogical context, it is necessary to ensure that play environments support the development of the essential academic skills that are the foundation for later learning and are mandated by curricula. (p. 1072)

With intentional planning, Teachers versed on the purpose and implementation of play-based pedagogy were able to provide more developmentally appropriate ways of moving toward the attainment of grade level standards (Brown, 2017; Kobylak & Kalyn, 2017; Lozon & Brooks, 2019)—the Common Core State Standards in the United States. “Contrary to popular belief, the Common Core does not prescribe any specific pedagogy and does not forbid playful learning” (Bowdon, 2015).

Conclusion: How Findings Answered the Research Question

Many teachers are currently mandated to address various grade level standards in multiple content areas such as literacy, math, science, and social studies. Research data demonstrated that appropriately planned and implemented play pedagogy in the primary years could provide a developmentally appropriate means of addressing academic standards in multiple content areas (Brown, 2017; Kobylak & Kalyn, 2017; Lozon & Brooks, 2019). To accomplish this, an expanded definition of play that included not only free play, but other types of play such as inquiry play, collaboratively created play, playful learning, and learning through games was needed (Pyle & Danniels, 2017).

Research verified that with teacher involvement in planning, implementing, and extending children’s play-based learning, play was a curricular tool that could be used to address standards (Brown, 2017; Kobylak & Kalyn, 2017; Pyle & Danniels, 2017; Taylor & Boyer, 2020). While it was possible to utilize play-based learning to meet grade level goals, there were also barriers such as lack of common understandings of play/play-based learning definitions, purposes of play, and play pedagogy (Miller & Almon, 2009; Pyle & Alaca, 2018; Pyle & Danniels, 2017; Wallerstedt & Pramling, 2012). Teachers struggled to adjust the malalignment of rigorous standards with play-based learning. One study pondered whether or not it was possible for play

to meet policy goals, yet agreed there was a place for play in the classroom (Hunter & Walsh, 2014). Research suggested that teacher support such as preservice and ongoing training, professional learning groups, opportunities to observe play-based learning in peer classrooms, and supportive educational environments, heightened the degree to which effective implementation of play-based learning to meet grade level content existed (Jay & Knaus, 2018).

Evidence in the literature review provided fundamental information about using play and play-based learning to address rigorous grade level standards. In addition, research demonstrating the importance of play in a young child's learning, the decline of play as a teaching tool in classrooms, and increasing academic expectations for young children ages birth to eight, connects to the issue of why this is an important topic in the field of early childhood education (Miller & Almon, 2009). Information gained in this study could be used to improve future practice for teachers and administrators who seek to use research-based methods to inform the use of play-based teaching of young children in the primary grades.

Chapter Four: Research Summary and Conclusion

Play-based learning has the potential to be used in the primary grades in multiple ways. Play-based learning is one curricular tool that may be underused in supporting primary age children in the achievement of state standards. The research analyzed in this paper provides learning that can inform practice in ways that can better match curricular content to children's learning styles through play related experiences. This chapter summarizes learning in connection with improving instructional practices, cites specific examples of how the research can inform curriculum and instruction, and provides examples of future studies where more information may be helpful.

Summary of Research Insights Gained that Will Improve Instructional Practice

The first learning came from the research reporting there is no commonly held definition of play (Miller & Almon, 2009; Pyle & Alaca, 2018; Pyle & Danniels, 2017; Wallerstedt & Pramling, 2012). Because of this, when the word *play* is mentioned, it has many nuances of meaning. Some educators think about child-directed *free play* when the word play is mentioned and have concerns about how play can connect to academic standards. Research shows the definition of free play can be extended on a continuum that includes multiple kinds of play with various levels of teacher involvement (Pyle & Danniels, 2017). An expanded view of play means letting go of the belief that *real* play is *always* child-directed and child-chosen without teacher intervention and allowing for a theory that encompasses a continuum of play types that serve multiple purposes in instruction and learning.

A second learning gained from research revealed that when children experience many kinds of play, students tend to view play-based activities that have teacher involvement, take place on the floor, or occur outside as activities where play and learning are intertwined. Children also

viewed activities as play when students were in charge of learning and were gaining new knowledge in a pleasing way. Knowing this information allows teachers to design play activities that incorporate children's beliefs about play and learning. When children are engaged in pleasurable learning, whether it is a play experience or an activity that includes an attitude of playful learning, students can achieve learning goals (Pyle & Alaca, 2018).

A third learning involves the teacher's understanding of play pedagogy. There is often discontinuity regarding pedagogy and practice between preschool and kindergarten/primary teachers. Many primary grade teachers have not been trained in play theory or from a developmental perspective regarding young children's learning (Fowler, 2016). It is important that educators of children birth to age eight understand the significance of play in a young child's development and the potential of play as a vehicle for learning. Teacher training in play theory, purposes of play, and developmentally appropriate practice is needed for all teachers of young children (Miller & Almon, 2009). Another learning relates to the teacher's role in play. It is important for teachers to be well-informed about play, proficient in knowing how to implement play, and knowledgeable regarding when to get involved in play as this can facilitate children's learning and growth in numerous areas (Kobylak & Kalyn, 2017). Teachers who are skillful in using play to extend learning through higher level questions, and intentional about vocabulary and concept integration in play, can link play to learning goals in the primary grades (Lozon & Brooks, 2019; Sliogeris & Almeida, 2019). Assessment of play-based learning should encompass a wide range of tools such as student work, teacher notes, and checklists that demonstrate a child's learning in academic content and in other areas of whole-child development (Jay & Knaus, 2018).

A final learning connected to challenges to and supports needed for utilizing play-based learning effectively. In many ways, policy obstacles make the implementation of play-based learning difficult. Barriers to play exist that are beyond the influence of classroom teachers and need to be dealt with at the policy level. These include rigorous standards, standards-based testing (Miller & Almon, 2009), and scheduling due to a full curriculum (Brown, 2017; Miller & Almon, 2009). Other barriers such as lack of support in the school culture and absence of teacher knowledge regarding play-pedagogy could be compensated for by creating a school philosophy that backs play-based learning by providing ongoing professional development for teachers, administrators, and support staff. Other supports include establishing a school team that values play as an effective instructional tool, allows staff to observe classrooms that have implemented play-based learning successfully, and commits to investing in play over time—knowing that changing educational philosophies, pedagogy, and practices regarding play-based learning does not come quickly (Jay & Knaus, 2018).

Examples of How Research Will Be Applied for Instructional Improvement

To begin, it would be helpful if educational entities at all levels—local, state, and national—recognized and endorsed the value of play in children’s learning. Research documents the validity of play as the way young children best learn, but policy and practice often do not match the research in many kindergarten classrooms (Miller & Almon, 2009). Primary children also benefit from play-based learning (Brown, 2017; Kobylak & Kalyn, 2017). Another policy level concern that relates to play advocacy relates to the state standards. Could standards be adjusted to better align with more play-based instruction found in many preschool classrooms? Another question involves teacher education of primary teachers who are trained within the elementary pedagogy perspective and lack play training. Could preservice training be adapted to

include coursework that acknowledges the value of play as an instructional tool for birth-age eight children? Recommendations of this researcher is for advocates of young children to let their voices be heard at the policy level regarding needed changes in any of these areas.

While current policies require review, it is interesting to note that Miller & Almon (2009) pled for changes to many of these same concerns. In the United States, information showing progress in any of these areas is lacking. Therein lies the conundrum. Can play be used effectively to address grade level standards that may be inappropriate and taught by teachers who have little training in play-based pedagogy? It was interesting to note that the majority of articles regarding play-based learning implementation were researched in foreign settings where countries had mandated play-based learning. Articles discussing play-based learning in the primary grades in the United States were sparse. Even with play being named the required vehicle for teaching academic standards in these foreign countries, rich play was not guaranteed (Hunter & Walsh, 2014).

Research demonstrated that play deserves a place in primary grade classrooms as an instructional and learning tool (Brown, 2017; Miller & Almon, 2009; Sliogeris & Almeida, 2019). Where possible, aligning play-based activities to the standards may help bridge the gap between play and the achievement of curricular goals (Brown, 2017; Lozon & Brooks, 2017; Kobylak & Kalyn, 2017). Research showed that taking the time to carefully plan play experiences resulted in high levels of student engagement and learning (Kobylak & Kalyn, 2017). While policy changes are outside the scope of influence of many teachers, this information points to the need for school level play promotion by those who have the platform to do so. This includes advocacy for creating a school culture that supports play through the creation of common definitions of play and the expansion of free play activities to a continuum

of play options. Assessment beyond standardized tests, including multiple means of data collection to include developmental growth in areas of child development such as social-emotional wellness, provides a more holistic picture of child growth (Jay & Knaus, 2018).

Research noted that while many teachers agreed play was valuable in young children's learning, teachers recognized they lacked knowledge and/or the confidence to implement play in a way that also moved children to the mastery of curricular goals (Hunter & Walsh, 2014). Teacher education including training that encourages DAP with deep knowledge regarding the benefits, purposes, and implementation of play-based learning, peer observation of play-based classrooms, and professional learning groups can provide needed support in teacher implementation and understanding of play-based learning (Jay & Knaus, 2018).

Suggestions for Possible Future Studies

There are a number of suggestions for future studies. First, what does successfully implemented play-based learning aligned with grade level content look like in a primary classroom? Or, what are specific strategies regarding play-based activities that work in meeting grade-level standards? This type of information would provide some starting points for educator, administrator, and parent visualization of how play can be linked to grade-level standards in the primary grades.

Other possible studies relate to current tensions between philosophies, practice, and definitions of play. The first question concerns the shift in classroom pedagogy many children experience when they move from preschool to kindergarten and the subsequent primary years: How can teachers align supportive play philosophy with practice to ease social-emotional discontinuities between the preschool and kindergarten transition? Another study that could provide a valuable foundation for educators regards the confusion about play definitions: What

consensus can the educational community come to regarding the definitions of play? Or, how can educators overcome the debate between free play and teacher directed instruction to encompass an expanded definition of play pedagogy?

Conclusion

In many ways, this research project was enlightening. It highlighted many challenges resulting from policy level decisions that the average teacher cannot impact. It also underscored the ignoring of scientific research showing that play is the means by which young children are wired to best learn (Miller & Almon, 2009). In other ways, the research was positive regarding play-based learning. In a number of countries play-based learning is being mandated. While this alone did not ensure the effective implementation of play-based learning, researchers did note changes in teacher attitudes about the value of play in children's learning. Over time, teachers who were exposed to ongoing training and play pedagogy became more positive regarding play as an important manner by which children learn (Hunter & Walsh, 2014).

While the information answered the research question by showing that it is possible to use a spectrum of play-based learning types as a way to support the meeting of grade level standards, full implementation of play as a learning tool in the primary grades will need a broader level of support if it is to be used as a standard practice in the United States. While individual teachers can implement play within a classroom, this does not allow play to be used to its full potential as an instructional tool—although it is a start. Play-based learning has the potential to address skills in a developmentally appropriate way that recognizes the individuality of the child, the child's developmental levels, the student's interests, and learning content appropriate for children at a particular place in development. Play naturally engages children in learning. Carefully planned play-based learning experiences can enhance grade level achievement.

Will the heavy accountability issues move to a more balanced approach to student development and learning for young children? Only time will tell. If teachers can remember how important play is to children's learning and resist the urge to conform to current instructional pressures, they can use playful learning to incorporate children's interests in classroom activities even though they cannot control policy mandates (Overstreet, 2018). Perhaps it is in individual classrooms and schools where play advocates can make a difference—if not across the educational system, then at least in their own classrooms.

References

(2013, September 23). Retrieved from The Glossary of Education Reform:

<https://www.edglossary.org/common-standards/>

(2014, August 18). Retrieved from The Glossary of Education Reform:

<https://www.edglossary.org/high-stakes-testing/>

Bowdon, J. (2015). The common core's first casualty: Playful learning. *The Phi Delta Kappan*, 33-37.

Brown, V. (2017). Drama as a valuable learning medium in early childhood. *Arts Education Policy Review*, 164-171.

Copple, C., & Bredekamp, S. (2009). Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8: Position Statement. Washington, D.C.: National Association for the Education of Young Children. Retrieved February 2020, from National Association for the Education of Young Children:
<https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/PSDAP.pdf>

Fowler, R. C. (2016). Grade-level overlap and standards mismatch between nationally recognized programs that prepare teachers for grades prek-3. *Journal of Early Childhood Education*, 203-215.

Goldstein, L. S. (1997). Between a rock and a hard place in the primary grades: The challenge of providing developmentally appropriate early childhood education in an elementary school setting. *Early Childhood Research Quarterly*, 3-27.

Hunter, T., & Walsh, G. (2014). From policy to practice?: The reality of play in primary school classes in Northern Ireland. *International Journal of Early Years Education*, 19-36.

- Jay, J. A., & Knaus, M. (2018). Embedding play-based learning into junior primary (year 1 and 2) curriculum in WA. *Australian Journal of Teacher Education*, 112-126.
- Kobylak, K., & Kalyn, B. (2017). Play and exploration in grade one: Extending the principles of early learning. *Journal of Childhood Studies*, 32-44.
- Lozon, C., & Brooks, J. G. (2019). The potential of purposeful play: Using the lens and language of crosscutting concepts to enhance the science and engineering practices of play. *International Journal of the Whole Child*, 88-94.
- Martlew, J., Stephen, C., & Ellis, J. (2011). Play in the primary school classroom? The experience of teachers supporting children's learning through a new pedagogy. *Early Years*, 71-83.
- Miller, E., & Almon, J. (2009). *Crisis in the kindergarten: Why children need to play in school*. College Park: Alliance for Childhood.
- Nolan, A., & Paatsch, L. (2018). (Re)affirming identities: Implementing a play-based approach to learning in the early years of schooling. *International Journal of Early Years Education*, 42-55.
- Overstreet, M. (2018). All work and no play makes jack a dull boy: The case for play at all educational levels. *Reading Psychology*, 216-226.
- Pyle, A., & Alaca, B. (2018). Kindergarten children's perspectives on play and learning. *Family Child Development and Care*, 1063-1075.
- Pyle, A., & Danniels, E. (2017). A continuum of play-based learning: The role of the teacher in play-based pedagogy and the fear of hijacking play. *Early Education and Development*, 274-289.

- Sliogeris, M., & Almeida, S. C. (2019). Young children's development of scientific knowledge through the combination of teacher-guided play and child-guided play. *Research in Science Education*, 1569-1593.
- Stegelin, D. A. (2005). Making the case for play policy: Research-based reasons to support play-based environments. *Young Children*, 76-85.
- Taylor, M. E., & Boyer, W. (2020). Play-based learning: Evidence-based research to improve children's learning experiences in the kindergarten classroom. *Early Childhood Education Journal*, 127-133.
- VanOers, B., & Duijkers, D. (2012). Teaching in a play-based curriculum: Theory, practice and evidence of developmental education for young children. *Journal of Curriculum Studies*, 511-534.
- Wallerstedt, C., & Pramling, N. (2012). Learning to play in a goal-directed practice. *Early Years*, 5-15.
- Walsh, G. M., McGuinness, C., Sproule, L., & Trew, K. (2010). Implementing a play-based and developmentally appropriate curriculum in Northern Ireland primary schools: What lessons have we learned? *Early Years*, 53-66.