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The Effects of Imitation, Modeling, and Prompting on Play Skills
of Young Children with Disabilities

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in Partial Fulfillment of the Requirements
For the Degree of Master of Education

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Abstract

The purpose of this action research was to determine if direct instruction of play skills would improve the play of three-year-old children with disabilities in the inclusive setting. Participants included five children with disabilities ranging in age from 38 to 48 months old. Quantitative data was collected using event sampling to assess the number of different independent play actions performed by participants before and after intervention. Qualitative data was collected to determine commonalities in which intervention action steps resulted in successful imitation. The intervention implemented was a combined systematic approach of contingent imitation, modeling, and a system of least prompts within the inclusive setting during free play. Analysis of data revealed the intervention had a positive effect on the number of different independent play actions performed by three-year-old children with disabilities in the inclusive setting. Acquisition of new play skills promotes acquisition of other skills through play-based instruction. Performance of a larger variety of independent play skills also promotes inclusion and acceptance among typically developing peers. Limitations and need for further study are discussed.

Keywords: young children with disabilities, play skills, inclusive setting

The Effects of Imitation, Modeling, and Prompting on Play Skills
of Young Children with Disabilities

Play in the early childhood community has become the quintessential base for learning over the last decade. Researchers and teachers have come together in embracing the philosophy that children learn best through play. When a young child with a disability enters the preschool classroom, his or her knowledge of play is vastly different compared to typically developing peers. Generally, students with disabilities join the preschool classroom at the time of their third birthday, or as soon as they are identified as needing special education services after their third birthday. Often, the preschool classrooms that these students with disabilities are integrated into are designed for typically developing four-year-old children preparing for elementary school. The wide range of play skills observed during free play in these classrooms proves to show a large gap between delayed three-year-old students and typically developing four-year-old students.

When a three-year-old student with disabilities engages in play, his or her play actions could closely resemble those of a two-year-old or even younger. Examples of these play actions are dumping out toys, clapping two blocks together, or exploring objects through touch. As a result, play with typically developing four-year-old students becomes challenging. The older students identify these students with disabilities as playing like a baby and would rather not engage in play with them. Another effect of play skill deficits is that teachers are not able to introduce and teach other concepts through play.

Research supports learning through play. However, it also supports that in order for a child to learn through play, they must first know how to play. During the first year of school for a three-year-old child with disabilities, goals mainly focus on being acclimated to the school

routine, functional routines, and learning a variety of play skills. Play can be taught through a variety of methods. Methods can include contingent imitation, teacher, peer, or video modeling, and prompting.

Several research studies have investigated the effects of teaching play through imitation, modeling, and prompting. However, most research studies have been conducted outside of the inclusive classroom settings. Ledford and Wolery (2011) recommend interventions be implemented in the inclusive setting in order to promote maintenance and generalization of play skills. Using interventions to teach play skills in the inclusive setting also promotes the implementation of classroom- and play-based instruction. By using classroom- and play-based instructional approaches, teachers are able to promote successful integration and acceptance of three-year-old students with disabilities in the typically developing four-year-old preschool classroom.

By teaching three-year-old children with disabilities how to play appropriately, not only are teachers promoting successful integration and acceptance, but they are also promoting a larger variety of avenues to teach other skills as well. When a child understands how to appropriately build and play with trains and train tracks, teachers can use those toys and play skills to teach math, problem solving, and social skills. For example, a student can build a train and the teacher can model and prompt the child to count how many cars are in their train. The teacher can also model and prompt taking turns driving the train. As a result, the more play skills a child engages in, the more opportunities a teacher has to engage in play-based instruction of other skills needed.

The focus of this research is to determine if direct instruction of play skills will improve the play of three-year-old children with disabilities in the inclusive setting. Research supports

the systematic approach of using imitation, modeling, and prompting to teach play skills to children with disabilities. The use of this approach is also to be combined with toys and interests of the child with disabilities. For further success and benefit, interventions are recommended to take place in the inclusive setting. Through the combination of the inclusive setting, child interest, and a systematic approach of instruction, it is hypothesized that three-year-old children with disabilities will engage in a larger variety of play skills.

Review of the Literature

The importance of play in early childhood has become the center of best practices in preschool classrooms due to heavy research supporting this philosophy. Play is a natural method for investigation, exploration, and learning. Adults even use play to experiment and problem solve. Children use play as a means of investigating the world around them, developing problem-solving skills, and shaping social skills that continue to develop through adulthood. Teachers often embed and use play-based instructional strategies to teach skills in different content areas, such as letter recognition, counting, or knowledge of different occupations. When a child with a disability engages in play, it is often simple and repetitive (Barton & Wolery, 2008). If children with disabilities continue to engage in simple, repetitive play, teachers are faced with the challenge of first having to teach children with disabilities how to play before other skill instruction can be achieved through play-based strategies.

Play

In preschool classrooms throughout the country, play is the main priority and given the largest majority of time during a preschool student's day. According to Lifter, Mason, and Barton (2011), the three-fold rationale behind the heavy emphasis of play is that play is important for a child's experience, a beneficial mode of assessing development, and an important

means of intervention. While engaging in play, children are able to develop play skills as well as problem-solving skills and other emerging content area skills (Pizzolongo, 2014). Play can be defined in a variety of ways based on social, cognitive, or communicative components.

However, at the base of each of these contexts is that play is spontaneous and naturally occurring engaged attention and interest with objects (Lifter et al., 2011). Teachers can use play interests to their advantage to plan instruction and assessment.

Prerequisite skills needed for play skill development. Stockall, Dennis, and Rueter (2014) identify three prerequisite skills that are needed in order for children to develop complex play behaviors. Social referencing is one of the prerequisite skills needed in order to develop complex play. Social referencing occurs when a child receives and interprets how others are acting, and then causally acts according to the inference made (Stockall et al., 2014). By using social referencing, a child is able to determine other's feelings about an object, person, or event. Typical children begin to demonstrate this skill toward the end of their first year of life (Stockall et al., 2014). Eye gaze and eye contact are critical for the development of this skill (Stockall et al., 2014). Once joint attention is established between an infant and caregiver, it can move to the next level of joint attention to objects. Children with disabilities often display deficits in this area, as they do not typically engage in joint attention.

The second skill very commonly used during complex play behaviors is reciprocity. This skill is the back and forth exchange between people, or turn taking (Stockall et al., 2014). Typical children begin to display this skill as early as three months of age (Stockall et al., 2014). Reciprocity at this age can be observed when infants begin to imitate facial expressions and vocalizations. The caregiver may be making a coo or babbling noise, which the infant imitates, and the caregiver starts to go back and forth imitating and modeling new sounds. This begins a

cycle of reciprocity between the caregiver and infant. The cycle of reciprocity lays a foundation for children to be able to have more complex conversational and play exchanges (Stockall et al., 2014). As previously noted, children with disabilities have a hard time with reciprocity due to not typically engaging in joint attention as well as imitation.

The final prerequisite skill needed to develop complex play behaviors is the ability to initiate and respond to communication. When a child initiates, he or she is intentionally gaining the attention or beginning communication with another (Stockall et al., 2014). Responding to communication can be following a simple directive given to the child (Stockall et al., 2014). Initiating and responding to communication at their earliest form is when a child participates in a greeting. This skill begins to develop around nine months of age (Stockall et al., 2014). Due to lack of motivation to engage in joint attention, children with disabilities must be taught how to gain attention of others and appropriately respond to directives.

The aforementioned prerequisite skills can be taught to children with disabilities through a variety of intervention strategies. Joint attention can be attained to teach these skills by using materials that highly interest the child (Stockall et al., 2014). Social referencing can be taught with high interest materials, animated facial expressions and vocal inflections, and encouragement of the child to shift eye gaze (Stockall et al., 2014). Reciprocity skills can be modeled with another peer or verbally mapping “your turn, my turn” while using high interest materials (Stockall et al., 2014). It is important to use materials of high interest while trying to achieve these prerequisite skills. Teachers can create opportunities for initiation and responses within daily routines. During these opportunities, teachers can use modeling, picture pairings, and praise of efforts made by the child to initiate and respond (Stockall et al., 2014). By

fostering the development of these prerequisite skills, teachers open the gateway for children with disabilities to better engage in different types of play.

Types of play. Children can be engaged with objects in variety of ways during play. Actions can range from sipping from an empty cup to raising a cupped hand to the mouth as if taking a drink. Research has indicated that play follows a developmental sequence that a child can move through (Lifter et al., 2011). Students take knowledge about different objects and incorporate that knowledge into their play while extending and becoming symbolic in their play. For example, a child can begin by sipping from an empty cup then later decide to use a block as a cup. This object play can go further to raising a cupped hand to the mouth and pretending the liquid is too hot to drink. Play follows a sequence of being concrete to taking a more abstract form.

Functional play. During functional play, children use an actual or miniature version of an object for the intended purpose of the object (Barton & Pavilanis, 2012; Buchanan & Cooney, 2000). Children may feed a baby doll with a plastic bottle or give a toy horse a bale of hay. Play in this stage is more concrete. Typical children begin to engage in this type of play between fifteen and twenty-one months of age (Buchanan & Cooney, 2000). Functional play can be reenactments of scenarios children have observed at home, in their community, or play actions of other children.

Constructive play. The next stage of play involves substitution of objects (Barton & Pavilanis, 2012). During constructive play, students will imagine an object as being something different. For example, a child will place pegs on a pegboard and pretend the structure is a birthday cake. In this step of play, children will have an idea of what they would like to build and use whatever materials are available to create what they have imagined. Typical children

engage in constructive play between twenty-four and seventy-two months of age (Buchanan & Cooney, 2000). During this stage, children are beginning to become more imaginative and creative, which leads to the final stage of pretend play.

Dramatic play. The final stage of play involves two facets. Dramatic play can involve imagining absent objects and assigning absent attributes (Barton & Pavilanis, 2012). The first facet of imagining absent objects is often observed when a child places a hand up to an ear while extending thumb and pinky, pretending the hand is a phone. The second facet can be observed when a child says a baby doll is hungry and finds the baby a bottle. Typical children can be observed in this stage also between twenty-four and seventy-two months of age (Buchanan & Cooney, 2000). Observations children make about the world around them can be reflected in their dramatic play.

Effects of play on development. Play is a means of naturally embedding instruction and assessment for different content areas (Lifter et al., 2011; Myck-Wayne, 2010). A variety of skills can be addressed during play. These can include skills in the social-emotional, cognitive, language, and content area domains. Through play, motivation to learn can be encouraged while also working on cognitive development (Myck-Wayne, 2010). As previously noted, play is naturally occurring in a variety of forms for typically developing children as well as children with disabilities. Not only is play naturally occurring, but it is also an indicator of future skills and behaviors (Lifter et al., 2011).

When a child is engaged in exploratory play, a number of skills can be taught and learned. During exploratory play, children are challenged to use their senses to explore their environment. Teachers can use exploratory play to introduce academic vocabulary (Myck-Wayne, 2010). For example, when a child is putting blocks into different piles based on size, the

teacher can verbally map this experience to introduce vocabulary words such as large, medium, small, and sorting. As a child works through sorting the blocks, problem solving skills are being utilized. The child could also be improving his or her attention span in order to complete the task of sorting all the blocks.

Through dramatic play, social-emotional, language, and cognitive skills can be addressed. While engaged in pretend play with peers, children have to use skills such as cooperation, turn taking, and empathy (Myck-Wayne, 2010). In the social communication area of pretend play, language comprehension, vocabulary development, and conversational skills will also be skills on which a teacher could focus (Myck-Wayne, 2010). Other academic skills could also be addressed in dramatic play if menus, posters, or other print materials are available. Teachers can use play as a means of shaping language, social, cognitive, and academic skills.

For a typically developing child, a teacher can easily use play as an opportunity to embed instruction for social, cognitive, and academic skills. Teachers can set up these learning opportunities by being intentional with the materials supplied in the different interest areas of the classroom. However, as previously noted, children with disabilities have simpler and fewer play skills with which to begin. Children with disabilities need to be taught how to play before a teacher attempts to teach another skill through a play-based intervention. For example, a teacher could teach a child with a disability how to build a train track. Once that play skill is mastered, the teacher can use that form of play as a vehicle for teaching counting skills by counting how many train tracks are needed to complete the railroad.

Instructional Strategies used to Teach Play Skills

Over the last few decades, researchers have formulated and implemented various teaching strategies in order to teach play skills to children with disabilities. Success has been

found in using contingent imitation and modeling to expand and increase diversity of play (Frey & Kaiser, 2011). Others have used a combination of contingent imitation, modeling, and a system of least prompts (Barton, 2015; Qiu, Barton, & Choi, 2019). Video modeling has been used to teach children with disabilities how to do object and pretend play (Cardon & Wilcox, 2011; MacDonald, Sacramone, Mansfield, Wiltz, & Ahearn, 2009). Video modeling can include videos of the teacher, peers, or students themselves engaging in the targeted play action. Studies also found that peer modeling can be an effective teaching strategy for children with disabilities (Barton & Ledford, 2018; Patry & Horn, 2018; Wolfberg, DeWitt, Young, & Nguyen, 2015). Many of these strategies occurred outside of the child's natural classroom environments. For the purposes of this study, studies on imitation, modeling, and prompting will be reviewed.

Imitation, modeling, and prompting. Children are natural observers of the world around them, and because of that, typically imitate or reproduce actions they see or have seen in the past. Imitation skills can be broken down into three different categories: spontaneous, elicited, and deferred (Heimann, Nordquist, Strid, Connant Almrot, & Tjus, 2016). Spontaneous imitation is independently imitating without prompting (Heimann et al., 2016). An example is a child observes the teacher clapping together two blocks and begins to clap together two blocks themselves. Elicited imitation is prompted (Heimann et al., 2016). An example of elicited imitation occurs when a child observes the teacher driving a toy car and makes no response until the teacher says, "(Student), drive your car." After the verbal prompt, the child imitates the action modeled by the teacher. Deferred imitation occurs when a child imitates an action that is stored in long-term memory (Heimann et al., 2016). The latter form of imitation can be seen when a child observes a teacher pretending to feed a horse a hay bale, but does not immediately imitate this action. In fact, the child unexpectedly performs the modeled play action a day or two

later without prompting from the teacher. Children with disabilities tend to lack skills in social awareness to be alert to different play actions adults or peers around them are using. As a result, children with disabilities first need to be taught to imitate actions modeled by an adult or peer.

Researchers have found that using reciprocal imitation helps not only to catch the attention of children with disabilities, but also aid in teaching play skills (Cardon & Wilcox, 2011). Children steadily increased imitation skills through reciprocal imitation training while also generalizing these skills across materials and people (Cardon & Wilcox, 2011). Imitation skills are considered a part of observational learning. When students are taught how to imitate, they are given the opportunity to be better observational learners. Observational learning contributes to the development of play and communication skills (Cardon & Wilcox, 2011). Developing these skills in early intervention settings can impact the development of other critical skills.

Preschool students with special needs are often placed in inclusive settings. In order to promote success in those environments, students with disabilities should have imitation skills (Ledford & Wolery, 2011). Several research studies have been conducted with imitation being a part of the prerequisite skills required in order to complete the intervention (Barton, 2015; Cardon & Wilcox, 2011; Frey & Kaiser, 2011; Quigley, Griffith, & Kates-McElrath, 2018). Imitating a play action is the first step in learning how to perform new play actions. Imitation is important for accessing instruction and being successfully accepted in inclusive settings. Ledford and Wolery (2011) suggest interventions be used within the inclusive setting. The rationale behind this theory is that teachers would be able to use classroom- and play-based instruction with the goal being maintenance and generalization of skills (Ledford & Wolery,

2011). By using classroom- and play-based instruction, teachers increase the likelihood of successful integration of children with disabilities in the inclusive setting.

Frey and Kaiser (2011) conducted research to determine the effects of using contingent imitation, modeling a play expansion, and verbally mapping play actions. Children in this study increased their overall number of different play actions and spontaneous novel actions, as well as increased the complexity of their play actions (Frey & Kaiser, 2011). Researchers concluded that the new play actions were learned via imitation, even though the play action modeled to them was not immediately imitated during the intervention session (Frey & Kaiser, 2011). Prompting was not used as a part of this research study. By not using prompting, students could be assessed on their true spontaneity of play. The researchers inferred that by not using prompting, students could not develop a prompt dependency during play (Frey & Kaiser, 2011). This approach to teach play skills to children with disabilities can occur in the child's natural classroom setting. As a result, implementation can lead to successful integration of students with disabilities into the inclusive classroom.

A narrower approach to teaching play skills was utilized to specifically teach play expansions and complexity of block play (Barton, Ledford, Zimmerman, & Pokorski, 2018). Researchers set out to determine if contingent imitation and play expansions increase the complexity and engagement of block play in children with disabilities and their peers (Barton et al., 2018). During the intervention, the implementer imitated the child by building the exact structure the child built. The implementer took it one-step further and added another block while verbally mapping their expansion (Barton et al., 2018). Students showed more engagement during the imitation and expansion part of the intervention, but were not showing progress in increasing complexity and diversity of block play (Barton et al., 2018). As a result,

implementers added a visual and verbal prompting component. Once this component of the intervention was implemented, students began to show more complex block and pretend block play skills (Barton et al., 2018). In this study, it should be noted that the implementers acted on the students' lead in adapting the intervention to better fit the needs of the participants. Child-led strategies can be used in combination with visual and verbal cues to increase the complexity of play.

Further research has been conducted to analyze the benefits of modeling versus prompting as a means of teaching independent play skills. Modeling and prompting were each paired with reinforcement as well as combined together and paired with reinforcement. Both teaching strategies were found to be effective methods of teaching independent play skills (Quigley et al., 2018). However, researchers emphasized that modeling and prompting would not be efficient in teaching independent responses; the participants required reinforcement (Quigley et al., 2018). Reinforcement is commonly done with the use of edibles or verbal praise. Modeling paired with reinforcement was found to be less effective in producing independent play responses (Quigley et al., 2018).

In contrast to the research conducted by Frey and Kaiser (2011), Barton (2015) used the system of least prompts in combination with contingent imitation. Teachers contingently imitated the play of students and used a system of least prompts to teach a targeted play behavior (Barton, 2015). Teachers and researchers concluded that the system of least prompts was effective in teaching targeted play skills (Barton, 2015). The system of least prompts starts with a natural prompt and moves to the most involved prompt based on the individual's response. This type of system allows students to have multiple and different opportunities to perform actions. One goal of this system is for students to need less prompting support to perform an

action. Barton (2015) concluded that using contingent imitation in combination with the system of least prompts was an effective way to also address Individualized Education Plan (IEP) goals. Part of this success can be contributed to the fact that prompts can be selected according to each individual's need for support. Also emphasized was that teachers first needed to teach play skills before trying to use play-based interventions (Barton, 2015). IEP goals can then be addressed through play-based intervention.

The effects of the system of least prompts have also been examined in regards to the level of play skills and number of different play skills exhibited. Students were given an opportunity to exhibit a targeted play skill for an interval of time before the implementer gave a prompt (Qiu et al., 2019). By using the system of least prompts with intervals, researchers provided multiple opportunities for the children to respond independently. Not only this, but researchers were also able to move through the prompt hierarchy of least- to most-intrusive prompts for the students. Researchers saw an increase in unprompted and different play actions during the intervention, which maintained after the intervention, was withdrawn (Qiu et al., 2019). Children also displayed higher frequencies in play, overall complexity of play, and new play skills (Qiu et al., 2019).

Another response-prompting procedure used to teach play skills is constant time delay. In contrast with the system of least prompts with a prompt hierarchy, the constant time delay procedure uses a single prompt in order to promote errorless learning. This procedure was used in a study aimed to increase levels of unprompted and different play sequences (Barton, Choi, & Mauldin, 2019). The constant time delay procedure was effective in increasing unprompted play sequences to two of the three participants in the study (Barton et al., 2019). During the study, the third participant was showing little improvement until the response-prompting procedure used

was switched to the system of least prompts (Barton et al., 2019). This was in contrast to the single controlling prompt used with the other two participants. The results of the study showed a correlation between the use of a systematic prompting procedure and the number of unprompted and diverse play sequences (Barton et al., 2019). Another significant component of this study looked at the generalization of these play skills across settings and adults. All three participants were able to generalize their learned play sequences in nonintervention contexts as well as with other adults who did not implement the intervention (Barton et al., 2019). This finding is significant in that when children with disabilities are able to generalize skills across settings and people, they have a higher probability of successful and positive interactions with peers and adults in the inclusive setting.

Generalization of Play Skills

When children generalize play skills across different settings, they are able to perform the same play skill in two or more different rooms or areas. Children may be using similar items during the performance of these actions. Children with disabilities may display differing play skills at school than they engage in at home. This varied play can be due to different materials and different people near them (Buchanan & Cooney, 2000). In order to generalize play skills, it is suggested that teachers implement play interventions in different settings simultaneously (Movahedazarhouli, 2018). Any and all adults that work with children with disabilities should also be aware of and trained in the interventions used to promote generalization of play skills across people and settings as well (Movahedazarhouli, 2018). Jung and Sainato (2013) also suggest that teaching play skills in a natural environment around peers could promote maintenance and generalization of play skills. By instructing play skills in this manner, instead of in a one-on-one setting with an adult increases the likelihood of successful generalization.

Effects of generalization on development. Best practice in early childhood education is to teach through play. Teachers should focus on teaching children with disabilities how to play before trying to teach other skills through play (Barton, 2015; Lifter et al., 2011). Children with disabilities are to be placed in their least restrictive environment when receiving special education services. A majority of preschool children with disabilities are placed in inclusive preschool settings with typically developing peers. By performing more appropriate play actions, children with disabilities are more likely to be accepted in these inclusive settings (Barton et al., 2019; Jung & Sainato, 2013).

Within these inclusive settings, teachers have a more natural environment to instruct, practice, and assess children with disabilities (Lifter et al., 2011). More opportunities are also present in these inclusive settings for social and communication skills to be performed with peers and adults (Lifter et al., 2011). By learning play skills and being able to generalize those skills across settings and people, children with disabilities have more opportunities for success within the inclusive classroom setting. If a child with a disability learns how to pretend drive a car, it can be extended by building a road for the car to drive on, creating another play skill opportunity. This opportunity may be extended further if a peer begins to race their car next to the child. By the child with a disability initially learning how to pretend drive a car, he or she is better equipped to enter into more complex play with a more social and communicative aspect.

Studies have shown success in the generalization of play skills that are instructed via imitation, modeling, and prompting (Barton, 2015; Barton et al., 2019; Cardon & Wilcox, 2011). Imitation skills were generalized across toys and with different people in a study done by Cardon and Wilcox (2011). Imitation skills are part of the observational learning hierarchy. Through imitation, children with disabilities are able to reenact play skills they observe other adults or

peers engaging in. Imitation sets the stage of the reciprocity of play between themselves and peers or adults. This opens the doorway for teachers to embed instruction of social and communication skills through play.

Barton (2015) found generalization success within an unstructured free-play setting. The four children with disabilities included within the study received pretend play instruction using the system of least prompts (Barton, 2015). By using the system of least prompts, students can be given a natural prompt or have the prompts faded out easily. After the intervention was finished, generalization was observed in the child's classroom during their normally scheduled free-play time (Barton, 2015). Children were allowed to play with any toy and any person they wanted. Allowing the children to engage in unstructured free-play enabled them to show the play skills they could do independently, free of prompting. All four children were able to generalize the targeted play behaviors within this context (Barton, 2015). These results show promise for intervention within the inclusive preschool classroom.

The results for the latter study were significant in that the generalization of play skills would foster positive peer interactions, participation, and engagement (Barton, 2015). Generalization of play skills can also foster language and social development. Further promise in the results of this study is that teachers should be able to embed other instructional opportunities also within the free-play context (Barton, 2015). Studies that find success with generalization of play skills all emphasize the significance of being able to use play-based instructional strategies (Barton, 2015; Barton et al., 2019; Cardon & Wilcox, 2011). Teachers could use these opportunities to teach IEP goals. Being able to use play as a vehicle for embedding instruction is important because it is a natural method for investigating, exploring, and learning. Students with disabilities are more likely to be accepted by peers. Therefore, it is

important to teach play skills to young children with disabilities in order to make them successful within the inclusive preschool classroom.

Methods

Participants

Participants of this action research were five young children with disabilities. Out of the five participants, one child was female and four were male. At the time research was conducted, children ranged 38 to 48 months of age. Participants in this study had birthdays after September 15, 2014. Students within this age category are considered three-year-old students and placed in the self-contained with inclusion classroom for students with IEPs. Students who turn four years of age on or before September 15 of the academic school year are fully integrated into the four-year-old preschool classroom, or placed according to what is their least restrictive environment. Participant disabilities within the group included language delays, cognitive delays, Down syndrome, and Joubert syndrome. Two of the participants lived in homes where the primary language spoken was Spanish. Student IEP goals focused on skills in the areas of play, language, functional routines, and appropriately following preschool routines. Participants attended a half-day early childhood special education (ECSE) program in the rural town of Sioux Center, Iowa.

The design of the three-year-old program participants attended is self-contained with inclusion. Specifically, participants spent approximately two hours of their time integrated into a classroom with typically developing four- and five-year-old students. During this majority of time, participants were engaged in free play, music and movement activities, and gross motor activities alongside their typically developing peers. Participants were split between two different inclusive four-year-old preschool classrooms. Students A, B, and C were integrated

with twelve general education students and one other student on an IEP. Students D and E were integrated with ten general education students and two other students on IEPs. The other hour of their programming took place in a separate classroom, which included two other students with disabilities. While in the self-contained setting, students received developmentally appropriate read aloud stories, large group, and play activities. The three-year-old program was designed in this manner for the purpose of appropriately meeting the needs of three-year-old students who have disabilities. Prior to this program design, three-year-old students with disabilities were fully integrated into the four-year-old preschool program aimed at getting general education students ready for kindergarten. Teachers were not able to consistently use developmentally appropriate practices and fully meet the needs of the three-year-old students with disabilities.

Intervention

Previous research studies support a systematic approach to teaching young children with disabilities how to play. The intervention used in this study involved teaching play skills using contingent imitation, modeling, and a system of least prompts. However, contrary to most previous studies, the researcher implemented this intervention within the inclusive classroom setting. The researcher followed the participant's lead and implemented the intervention in the interest area the participant chose. The researcher also implemented the intervention with objects that interested the participant. Intervention sessions were ten minutes in length and occurred at least twice a week with each participant for six weeks. During the intervention sessions, the researcher would imitate the participant's actions with the same or similar object while verbally mapping the actions. Following imitation, the researcher modeled a new action to the participant and verbally mapped the action. If no response occurred, the researcher repeated the action. If the participant did not respond a second time, the researcher moved through the

system of least prompts until the participant successfully engaged in the modeled play action.

The system of least prompts included first giving a verbal prompt to imitate the action. When no response occurred after the verbal prompt, the researcher used a gestural or touch prompt. If no response still occurred, the researcher used hand-over-hand physical assistance to help the participant complete the action.

Data Collection

The purpose of this study was to determine if direct instruction would affect the play skills of three-year-old students with disabilities in the inclusive setting. In order to determine the effect, the researcher collected quantitative data in the form of event sampling. The researcher recorded the number of different independent play actions performed by the participants. Baseline data was collected over the course of four consecutive school days, or one school week. The researcher spent ten-minute sessions observing each participant during free play in their respective inclusive classroom setting. During the sessions, the participant was free to play with any object and in any interest area they chose. The researcher remained in the same interest area as the participant and made anecdotal notes of the different play actions the participant performed independently. Following the one-week baseline data collection period, the researcher tallied the amount of different independent play actions performed by each participant.

At the conclusion of implementing the intervention, the researcher used the same event sampling method to collect data on the post-intervention play behaviors of the participants. The researcher recorded different play actions performed during ten-minute sessions for one school week on each participant and analyzed the number of different independent play actions. The researcher also used the lists of independently performed play actions from baseline and post-

intervention to identify the number of different actions performed during post-intervention data collection sessions. This quantitative data represents the different play actions acquired that were not observed during the baseline sessions.

Qualitative data was also recorded by making anecdotal notes that detailed the intervention steps used to help students imitate and perform new play skills. When working with a participant, the researcher labeled the activity, in which the participant was engaged. The researcher would use contingent imitation to engage in play with the participant. Following engagement, the researcher would move through the modeling and prompting procedure of the intervention with the participant to teach a new play skill. Anecdotal notes were recorded to identify the action steps the researcher took before the participant successfully imitated the play action. Notes also reported each participant's response(s) to the researcher's action step(s).

Results

Quantitative Data Analysis

Upon initial data collection, participants displayed a small amount of simple and novel play actions. The play actions performed were also heavily repeated during the initial data collection process. The repetitive actions thus had an effect on the number of different independent play actions performed by participants. Play actions that occurred within a sequence were broken down to be counted as individual play actions. Overall, play actions showed an increase for all participants involved in the study. Table 1 displays the total number of different independent play actions performed by each participant during the one school week baseline collection period in comparison to the one school week post-intervention collection period. Also defined within Table 1 are the number of independent actions that were gained by each participant.

Table 1

Independent Play Actions Performed

Participants	Baseline Actions	Post-Intervention Actions	Gain in Actions
Participant A	15	20	+5
Participant B	12	22	+10
Participant C	8	31	+23
Participant D	10	18	+8
Participant E	5	11	+6

At the conclusion of the post-intervention collection period, play actions were also compared from baseline and post-intervention to determine if actions were the same or different. Independent play actions performed that were different during post-intervention than baseline were tallied. Table 2 shows the number of different actions that were performed during post-intervention compared to the actions performed during baseline.

Table 2

Comparison of Different Independent Play Actions Baseline vs. Post-Intervention

Participants	Different Actions
Participant A	15
Participant B	17
Participant C	28
Participant D	17
Participant E	8

The results shown in Table 2 indicate that participants gained a larger variety of independent play actions throughout the study than were initially indicated in Table 1. When combined with the amount of independent play actions observed during baseline, Participant A performed a total of 30 different play actions overall. Participant B performed a total of 29 different play actions overall. Participant C performed a total of 36 different play actions overall. Participant D performed a total of 27 different play actions overall. Participant E performed a total of 13 different play actions overall.

Qualitative Data Analysis

The researcher also recorded qualitative data during the intervention to identify common responses to the researcher's action steps. The data recorded shows the type of support each participant required to successfully imitate new play actions. Overall, participants showed a majority of independent imitations after the researcher's first modeling attempt of a new play action. Only one participant was able to independently imitate all actions modeled by the researcher. Participant C required no extra modeling or prompting throughout the intervention. Participant C engaged more in constructive and dramatic play actions while extending the researcher's modeled play action.

Participants B and D only required additional verbal prompts to imitate a few of the researcher's modeled play actions. Participant B engaged in constructive play actions with the researcher. Half of Participant B's play actions were independently imitated. These actions involved more concrete constructive play such as eating ice cream or feeding a baby. The researcher verbally prompted the imitation of the other half of the play actions modeled to Participant B. Such play actions were not common, everyday occurrences. For example, the researcher modeled sawing apart boxes for building a house. Participant B needed a verbal

prompt to engage in the play action. Participant D engaged mainly in constructive play with the researcher. Only two modeled actions required additional verbal prompting to imitate the action. All other actions modeled by the researcher were independently imitated by Participant D.

Two participants required the use of hand-over-hand physical assistance to imitate some of the modeled play actions. The play actions modeled for Participant A included a majority of constructive play. Participant A required hand-over-hand physical assistance to complete about half of the play actions modeled. These actions involved tasks that involved heavier fine motor work for the participant. The researcher modeled other actions that did not demand heavy fine motor work. Participant A was able to independently imitate actions involving eating, stirring, and driving vehicles. Participant D engaged in constructive play and a couple actions involving dramatic play. Hand-over-hand physical assistance and additional prompting were needed for Participant D to complete part of the modeled play actions. The actions that required additional prompting included actions with heavy fine motor work. However, Participant D was able to independently imitate a majority of modeled actions, especially those that involved driving vehicles and playing with food.

Discussion

Summary of Major Findings

Overall, the results of the study further confirm using a systematic approach of imitation, modeling, and prompting has a positive effect on the independent play actions performed by young children with disabilities. Independent play actions performed during baseline were novel and repetitive, which had an effect on the total number of actions observed. Actions performed during the post-intervention period included a larger variety of different types of play including functional, constructive, and dramatic play. Although some actions remained repetitive,

participants showed the ability to independently extend those actions. Consequently, this added to the number of independent play actions performed.

Without comparing the actions performed during post-intervention against baseline, the researcher would not have realized the full effects of the intervention. Participants increased the amount of independent play actions performed within the observation periods. However, they also added a greater variety of independent play skills to their overall play repertoire. The effects of the intervention highly support that consistent imitation, modeling, and prompting support acquisition of new and different independent play actions. Not only this, but also such an intervention can be used within the inclusive setting.

The intervention was implemented entirely within the inclusive classroom setting and according to the interests of the participants. Due to the more natural approach of this intervention, the researcher was able to follow the participants' lead in play and interests. By using this child-led strategy, participants seemed more likely to independently imitate modeled play actions without additional prompting. The researcher observed that the general education peers within the inclusive classrooms were not only more accepting of the participants, but were also more likely to engage in play with them. A few of the play actions observed during the post-intervention sessions included play with a peer. The observation of these interactions shows the possibility of being able to use peer models to teach play skills as well.

Limitations of the Study

The greatest limitation of the study was a combination of the time of year and the time constraint put on the study to implement the intervention. Due to the winter season the study was conducted in, students had unexpected absences due to illnesses during the cold and flu

season. The absences had an effect on the consistency of intervention implementation that was out of the researcher's control. In order to fully complete the study, the researcher had six weeks to implement the intervention, which was also affected by missed school days due to weather closings. Because of these factors, a few days of intervention implementation were missed. The researcher was also unable to assess generalization and maintenance of skills post-intervention due to the time constraint.

A second limitation of the study was a result of the researcher's choice to fully take the child's lead on interests and choices. Participants were free to choose any interest area and toy to play with during the intervention session. As a result, sometimes a participant would have to use the restroom or choose to go to snack during the intervention session. When participants made such choices, the intervention session was interrupted. The researcher would stop the intervention and attempt to finish or complete an entire, uninterrupted intervention session later during the free playtime if there was enough time. Choices were also influenced due to the change in materials within the free play interest areas. The lead teachers of the inclusive classrooms changed the studies students were investigating during the intervention. This change, thus, affected types of materials and altered the play routines in which participants could engage.

A final limitation to the study is the researcher's inability to control the maturing process of the participants. Children go through different stages of development. The different stages of development occur naturally and at the child's own pace. Due to the unpredictable progress of stages, it is unknown if participants were ready to move to the next level of development and skills "clicked" when the intervention was being implemented. The researcher implemented interventions within the participants' zone of proximal development in hopes of scaffolding their learning and acquisition of different independent play actions.

Further Study

The time constraint on the study prevented the researcher from assessing the generalization and maintenance of the independent play actions acquired throughout the study. Due to the growth seen as a result of the intervention, it would be beneficial to see if skills would be maintained after some time of the intervention not being implemented. Another possibility of extending this research would be to cycle materials in six-week intervals and implement a year-long study. By using such a cycle, researchers could eliminate the limitation of materials being switched out during the intervention. Furthermore, by implementing a year-long study, researchers have more time to implement, assess, and make up for days students miss due to illness, weather, or other unforeseen circumstances. Researchers can also assess the generalization of similar play skills being performed with different materials.

As a result of the researcher having to implement interventions in two different classrooms, interventions were not consistently implemented every day during the four-day school week with each participant. Further study could include training other staff, such as paraprofessionals who work with students with disabilities, to implement the intervention when the teacher is unable to do so. In doing so, students could receive intervention supports more consistently over time, thus increasing the likelihood of acquiring more independent play actions. Another way to extend implementation is to include peer models. Peer models hold promise of meeting children with disabilities at their level while adding a social component of being initially accepting of the student with disabilities.

Conclusion

Play is paramount. In a world where the common philosophy of play is how children learn best, play must be taught to children with disabilities. Research fully supports play-based

instruction in early childhood. In order to be inclusive of those young students with disabilities within the preschool setting, play skills must first be taught to them. According to this and other research, play skills can be taught using a systematic approach of imitation, modeling, and prompting. The research in this study showed a positive effect of this direct instructional approach on the independent play skills of young children with disabilities in the inclusive classroom setting. Students acquired a variety of different independent play actions, some involving interactions with peers and a larger complexity of play. Once these play skills are taught to students with disabilities, teachers are given a gateway to use play-based instruction to begin instruction of skills in other content areas.

Play skills can be taught to students with disabilities within the inclusive setting. As a result of being in the inclusive setting, students are able to engage with materials that are of interest to them. Teachers are able to use these materials to model and extend play skills. This research supports the implementation of interventions within the inclusive classroom setting. Students were able to engage with toys that fully satisfied their interest and promoted the acquisition of new independent play actions. Further study can assess the generalization and maintenance of new independent play actions by completing cycles with different toys throughout a longer study. When students are successful in the inclusive setting, they are able to be placed in the best least restrictive environment possible. Teachers are better able to embed more opportunities for intervention, assessment, and interactions within the inclusive setting once independent play skills are established. As a result, students with disabilities have better access to instruction and their environment. Additionally, this leads to successful inclusion and acceptance by peers and the community.

Within the inclusive setting, students without disabilities are able to recognize the new play skills students with disabilities are performing; thus, opening a door for them to engage in play together. General education students become more accepting of those young students with disabilities. Interactions between general education students and students with disabilities become a vehicle for additional language and social skills to be developed. Ultimately, the added language and social skills also lead to the development of a variety of play skills by both groups of students. The use of peers could further enhance this research in other studies.

In order for individuals with disabilities to be accepted by their peers and community, they must be given a solid foundation of acceptance early on in life. The best way to accomplish this early on in life is to act on the current philosophy of play. By teaching the youngest of students with disabilities how to play, teachers are building a foundation of skills they can utilize to teach other skills, such as language, social, and academic skills. Play skills do not need to be taught in a one-to-one setting; they can be taught within the inclusive setting alongside typically developing peers. When typically developing children observe their peers with disabilities engaging in play skills similar to their own, they are more likely to engage in play with them. Young children with disabilities must be taught how to play to successfully promote the acceptance and inclusion of those with disabilities long-term.

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