Intervention Strategies for Pre-School Students with Special Needs

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Abstract

Students with special needs require unique intervention strategies as they enter infant care and preschool environments. The techniques and materials discussed in this paper are designed especially for the child's unique abilities and disabilities.

This paper will also focus on the skills needed for infants who have been identified as requiring intervention strategies as they transition into pre-school and kindergarten programs. Strategies will be provided for parents who reinforce the skills and behaviors at home.

Introduction

Infant and preschool programs provide a unique experience for children as they begin the developmental journey to acquire the skills and subsets they need to succeed in kindergarten-twelfth grade. In infancy the environment plays an important part of the learning scope and sequence providing both the stimulation and reinforcement needed to begin to gather information and knowledge. This paper will provide an introduction to the developmental stages from infancy through age four. For educators, the domains of knowledge will be introduced and defined. For parents, who reinforce these domains of knowledge in their homes, the specific skills and techniques that are necessary will be discussed. Although the exact number of students with special needs is unknown, "Study after study shows that intense preschool services produce huge academic, social and economic benefits- including savings to society of $30,000 to $100,000 per child".[1] But cost is often not a factor to those families with preschoolers who are developmentally disabled.

Developmental Stages

Infants between one and six months are developing the ability to interact with their environment. They are receptive to sounds, visual cues, and tactile interaction with other humans. Motorically they are beginning to have purposeful movement and focus on both sound and intonation. By the time babies are six months old they are clearly able to focus and differentiate objects that are ten to twelve inches away. Some, by this time, rock from side to side and some babies can even roll over. The social and emotional development is quickly being established with fear, surprise, pain, anger, and hunger indicated by different cries and facial movements.

By the time they reach twelve months old crawling and creeping is evident and some children are walking by twelve months. Socially and emotionally the fear of strangers is apparent as is the issue of abandonment. Often children of this age can be entertained for long periods of time by talking and moving in front of a mirror. At this age they laugh and interact with toys in a meaningful way. By twelve months many children are speaking their first intelligible words.

[1] Margaret Dungle & Louis Vismara, MD, "Developmental Checkups," EP Magazine(January 2004); 160

Between twelve months and twenty four months the sophistication of interaction is evident. Now the child can follow simple commands, tries to feed themselves, and repeats several words in sentences. It is expected that two year olds have approximately 200 words in their vocabulary. It is at this time that the terrible two's emerge which can be accompanied by tantrums, resentment of change, and a new found independence in simple motor skills.

As the child reaches three years old, motor ability increases as well as language skills improve considerably. Short three to seven word sentences are being formed and the child's sense of humor emerges. Emotionally, the fear of separation and the emergence of strong emotional reactions begin to surface. Sharing becomes an issue and oppositional behavior to parental demands can be evident. At this age the child parrots parental and sibling actions and verbal expressions. They are very comfortable with a standard routine, behavioral expectations, and clear consequences.

At four years of age children are self-sufficient in many ways. They enjoy helping out around the house and identifying themselves with the same sex parent. Dressing up for girls and playing sports for boys is typical and often rewarded by parents and siblings. Occasionally they become fearful of imagined monsters, scared of the dark, and awaken with bad dreams. Motorically their fine motor control is developed enough to draw circles and maybe even stick parts of the body. They can stand on one leg, ride a tricycle, and build fairly sophisticated block creations.

Five years old is a transition point for many children. The expectations have been increased and achievements are measurable. Most children by this time have begun public schooling and have assumed a more formal learning posture. Play is now interactive and substantive. The ability to play board games and sports has been established and the child derives pleasure from the interaction. Competitive play is evident and children tend to interact with the children in sex- appropriate activities.

Domains of Early Childhood Learning

There are four domains of early childhood learning that are considered privileged. This paper will discuss all four in detail with recommended instructional strategies for each domain. Wright and Nueman (2009) in their article published by the Albert Shanker Institute state that the early childhood years are when very young children seek to build a base of understanding content and develop the skills in communication and language to share what they learn. They eagerly question the way things work "And when provided with supportive and stimulating environments they eagerly engage in language learning, literacy practices, math play, and science exploration." [2]

[2] Tanya S. Wright, and Susan B. Nueman, "Preschool Curriculum: What's in it for Children and Teachers?" The Albert Shanker Institute. Washington, DC, (2009), http://www.ashankerinst.org/Downloads/Early%20Childhood%2012-11-08.pdf

Oral Language

Kindergarteners are able to understand and repeat and average of 4000 words. They will also have the language skills to speak coherently three to five word sentences. In the pre-K years children concentrate on both receptive and expressive language. Some children acquire language rapidly and others struggle to process, store, retrieve, and then store the words again. The richer the environment is in vocabulary, the faster and more sophisticated the child becomes in this skill. "The key areas of oral language that should be addressed in pre-K are vocabulary and phonological awareness. Both relate to children's literacy development. Phonological awareness is the ability to hear and manipulate sounds in language. This understanding that the stream of oral language can be broken into smaller units of sound-words, syllables, individual sounds (phonemes) - enables children to map sounds onto letters when they begin formal instruction in reading."[3]

As far as vocabulary, children with expanded word knowledge tend to relate to and understand more clearly and sophisticated, the books that are read to them and by them. These vocabulary skills serve children well throughout elementary and middle school as they are exposed to more complicated concepts, relationships, actions, and emotions.[4] Children with limited oral language tend to have more academic issues and delays than students with highly developed oral language skills.

Strategies for Oral Language Instruction

Adults and siblings should regularly engage the young child in talking about anything and everything. Conversation should be varied and constant with new and interesting topics brought up daily. It is critical for parents to chatter with their children about household topics to highly academic topics constantly. Young children are virtual parrots and tend to repeat adult conversations and intonations until they begin to process the information and take ownership of the ideas and vocabulary.

Both parents and teachers should encourage language–rich classrooms as shared by Wright & Nueman. They should:

Engage children in extended conversations

Encourage children to tell and retell stories and describe events.

Discuss a wide range of topics.

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[3] Tanya S. Wright, and Susan B. Nueman, "Preschool Curriculum: What's in it for Children and Teachers?" The Albert Shanker Institute. Washington, DC, (2009), http://www.ashankerinst.org/Downloads/Early%20Childhood%2012-11-08.pdf

[4] Tanya S. Wright, and Susan B. Nueman, "Preschool Curriculum: What's in it for Children and Teachers?" The Albert Shanker Institute. Washington, DC, (2009), http://www.ashankerinst.org/Downloads/Early%20Childhood%2012-11-08.pdf

Model use of new and unusual words.
Discuss word meanings
Ask open-ended questions
Give explicit guidance on vocabulary, syntax, and pronunciation.
Challenge children to justify their thinking.
Focus on the expression of ideas.[5]

Literacy

Developing literacy skills begins from birth. Infants that are given vinyl and cloth books begin to develop a relationship with the written word and the simple graphic art work that they see. Much of the disparity in literacy in young children today can be traced to the lack of experiences with text especially in low socio-economic environments. "One estimate suggests that children from typical middle-class families experience 1,000 hours of book reading before entering first grade, while children from low-income families may only experience 25 hours."[6]

Encouraging preschoolers to sing songs and play games, especially those involving letters and sounds, can increase their exposure to phonetic concepts. Parent and teachers who sound out words and reinforce the child's sounding out letters and words are preparing the child for the phonetic analysis of words. There are many multi-sensory ways to encourage students to practice letters and sounds. Finger-painting, magnetic letters, play dough, sand, plastic letters, macaroni, and pipe-cleaners can all be used to encourage children to interact with letters, sounds, and words.

Mathematics

Very young children can begin their mathematical journey through the introduction of concepts involving numbers and operations, geometry, algebra, measurements, data analysis and collection. It is critical that children develop early on the ability to understand mathematical concepts not just memorize the process and answers. Young children enjoy math activities that are hands-on and interactive. They can relate to the various concepts when they manipulate objects and engage in challenging activities. Math games that are technologically driven appear to engage young children in learning necessary logical concepts.

Preschool teachers should introduce the following concepts:

- Names of two-dimensional and three-dimensional shapes – e.g. circle, pyramid, cube, hexagon.
- Language to describe shapes – e.g. slides, lines, angles, round.

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[5] Tanya S. Wright, and Susan B. Nueman, "Preschool Curriculum: What's in it for Children and Teachers?" The Albert Shanker Institute. Washington, DC, (2009), http://www.ashankerinst.org/Downloads/Early%20Childhood%2012-11-08.pdf

[6] Tanya S. Wright, and Susan B. Nueman, "Preschool Curriculum: What's in it for Children and Teachers?" The Albert Shanker Institute. Washington, DC, (2009), http://www.ashankerinst.org/Downloads/Early%20Childhood%2012-11-08.pdf

- Terms to compare quantity – e.g. more than, less than, equal
- Terms to compare length and weight – e.g. longer, longest, heavier, heaviest.
- Language related to time – e.g. earlier, later, morning, night, today, tomorrow.
- Words that identify where things are in space – e.g. near, far.
- Positional words to describe the location of objects – e.g. inside, underneath, next to. [7]

These mathematical concepts can easily be incorporated into any pre-k curriculum and fit easily into a science or social studies unit. Most children can apply these concepts easily and accurately if they are introduced to the practical applications at an early age.

Science

Young children have a natural curiosity about scientific information. They come to pre-K already aware of many investigative and problem solving content. Young children that actively participate in scientific inquiry develop skills that are essential for future learning in both reading and science. Our youngest children today are involved with technology that will be essential to their future academic and social success. It is not uncommon to see a preschooler playing interactive games on an IPhone or Leapster. The newness of technology is integral to their world; they know no other world than that of cell phones, computers, DVDs, game boys, and IPods.

It is critical to begin introducing young children to the vocabulary of science and scientific inquiry early. They should be exposed to the equipment through which they can discover a whole new world with some very interesting interactions. Activities in science need to be hands-on and exciting to continue to engage children. They need to feel a part of the activity rather than a spectator. Since science appeals to the natural curiosity of young children they will be eager to engage and participate in the experiments and opportunities that the curriculum provides.

Social Competence

It is critical to a young child's development that they formulate a sense of social competence. According to Han and Kemple (2006) "Social competence includes understanding others' needs and feelings, articulating one's own ideas and needs, solving problems, cooperating and negotiating, expressing emotion, reading social situations accurately, adjusting behavior to meet the demands of different social situations, and initiating and maintaining friendships."[8] It is hard for young children to learn social skills. Once they have learned these skills, knowing when and where to apply these skills can become difficult and confusing choices for children to make.

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[7] Tanya S. Wright, and Susan B. Nueman, "Preschool Curriculum: What's in it for Children and Teachers?" The Albert Shanker Institute. Washington, DC, (2009), http://www.ashankerinst.org/Downloads/Early%20Childhood%2012-11-08.pdf

[8] Heejeong Sophia Han and Kristen Mary Kemple "Components of Social Competence and Strategies of Support: Considering What to Teach and How" Early Childhood Education Journal, (2006), DOI: 10.1007/s10643-006-0139-2

Teachers and parents can help children process the time and place social skills are appropriate and culturally acceptable. Introducing the concept of self-regulations can be invaluable to the child in future social interactions. Patience and planning are important to the child as they learn to self mediate and self regulate. Interaction within the environmental context should be encouraged with simulations and modeling an integral part of a consistent social skills curriculum plan.

Having discussed the domains of early childhood learning and the social competencies in some detail, it is important to focus on the strategies needed to remediate and include developmentally delayed children in this educational process.

Strategies for Remediation and Inclusion

Downs, Downs, Johansen, & Fossum[9] discuss the Division of Early Childhood's (DEC) research which focused on the recommended teaching strategies for students with developmental disabilities. They concluded that a variety of child-focused strategies that have shown prior evidence of success provide a solid basis for student achievement. Among those strategies are interacting with peers, prompts and prompt fading, modeling techniques and intermittent reinforcement. These strategies should be implemented with uniformity, conformity and regularity. This is not an easy job for either educators or parents. Parents and educators need to be properly trained to implement these teaching strategies. It is important to remember that all children are unique and require techniques and strategies individualized to their needs. Parents and educators need to keep this in mind when using any of the intervention strategies. According to Downs, et al. "Methods that are cost-effective, simple, practical, flexible, and that generalize across a variety of settings and children will likely be most useful as educators work to improve the long-term developmental and educational outcomes of children with disabilities."[10]

In education today literacy programs initiated for very young children and preschool youngsters are beginning to be addressed. One of the programs researched and documented as successful for young children with special learning needs is the Early Childhood Emergent Literacy Technology Curriculum (ELiTeC) model developed by Hutinger in 1998. Strickland & Riley-Ayers, describe the program as being "designed to pair appropriate technology applications and emergent literacy experiences for preschool children at risk and those who demonstrate mild to moderate disabilities. The materials and procedures developed in ELiTeC show promise in paving the way to acquisition of literacy concepts so important for young

[9] Andrea Downs, Robyn Conley Downs, Michael Johansen, and Michelle Fossum, "Using Discrete Trial Teaching Within a Public Preschool Program to Facilitate Skill Development in Students with Developmental Disabilities," Education and Treatment of Children, (2007): 1-27

[10] Andrea Downs, Robyn Conley Downs, Michael Johansen, and Michelle Fossum, "Using Discrete Trial Teaching Within a Public Preschool Program to Facilitate Skill Development in Students with Developmental Disabilities," Education and Treatment of Children, (2007): 1-27

children. Technology tools can be incorporated into the emergent literacy approach…..”[11] Providing the use of adaptive technologies such as computers, switches, audio communicators, etc. can often level the playing for those children with delayed development and/or diagnosed disabilities.

Early Intervention Strategies

It is important to provide parents and professionals with the crucial experiences need in the pre-school years. Ramey and Ramey (2004) have provided seven types of essential experiences necessary

To ensure normal brain and behavioral development and school readiness:

- Encourage exploration.
- Mentor in basic skills.
- Celebrate developmental advances.
- Rehearse and extend new skills.
- Protect from inappropriate disapproval, teasing, and punishment.
- Communicate richly and responsively.
- Guide and limit behavior. [12]

Parents and teachers are usually the first interventionists for developmentally delayed infants and young children. The first strategy is to locate regional, state, or community resources that provide services such as physical and speech therapy, infant stimulation, and possibly provide support groups for the parents and children. Sometimes hospitals have intervention programs with specialists and children’s groups that families can join in order to provide additional stimulation and organized activities for the children. National advocacy groups can often suggest current literature regarding intervention strategies for the specific disability or at least a place to locate free and low cost support. Continual online searching will definitely lead to the most current and informative material and can provide parents with options which are available through online memberships.

One of the best ways to intervene with young children is through games that they can play individually or within the family. Enrolling young children in activities such as Gymboree, Mommy and Me, or Kindergym, and any additional parks department options, can provide interaction with a mainstream environment and possibly the opportunity for the child and the parent to make new friends.

The parent’s role in early intervention is indicative of several factors. According to Wright, “Children enrolled in the primary grades experience about 1000 hours of classroom

[11] Patricia L. Hutinger, Carol Bell, Gary Daytner, and Joyce Johanson, “Establishing and Maintaining an Early Childhood Emergent Literacy Technology Curriculum” Journal of Special Education Technology, (2006): 39-54

[12] Craig T. Ramey and Sharon L. Ramey “Early Learning and School Readiness: Can Early Intervention Make a Difference? Merrill Palmer, (2004), 471-491

instruction each school year. This represents about 11% of a child's life. The other 89% of the time children are in the custody and care of their parents." [13] Parents need to encourage children to engage in learning activities. When a child has a disability, there are several transition periods that are crucial to the child's development. The very first transition is into a formal learning environment with a speech and language therapist or a physical or occupational therapist which begins the diagnosis and remediation of the disability. The implementation of the first program can and usually does last until the formal transition into a pre-k environment at age three. In these programs the child is the focus and the family plays a secondary role. As the child progresses through the system, the educational transitions can be stressful for both the child and the family. Often there is extended family that has become a natural part of the child's life. The more a parent is engaged in the activities of the school, the better the child performs. "Parents can be engaged with the school in a joint effort to improve the educational motivation and academic interests of their children. This goal can be achieved in part by parents who provide an academically conducive home environment where parents monitor how the child's time is spent".[14] It has been proven through several research studies that the educational level of parents is a solid indicator of reading achievement in first grade. Parental educational level also is directly related to the amount of reading that takes place at home and the educational aspirations for children. Children with diagnosed disabilities need the academic support of their families where reading at all levels is encouraged and a special time and place for reading is a natural yet structured occurrence.

Strategies for Instruction

Providing developmentally stimulating interaction between family and child, primarily through the auditory modality, will enhance their verbal language skills and cognition. Parental conversation with children is considered optimal for developing language processing skills. Craig-Unkefer & Kaiser (2002) [15]in their study, suggest that it is important for preschoolers to develop skills that will encourage peer approval and positive relationships. Appropriate social interaction is tied to interaction and play skills and needs to be introduced early in the life of a child.

One of the most important tasks that educators or parents should accomplish is identifying the areas of instructional need and establishing clear, concrete guidelines for the behaviors in this area. When attempting to modify a child's behavior, setting expectations that are attainable and reasonable is critical. Any behavior or characteristic that needs to be taught or changed needs to be described in several ways and demonstrated in several settings.

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[13] Robert J. Wright, *Multifaceted Assessment for Early Childhood Education* (Thousand Oaks: Sage, 2010), 246

[14] Robert J. Wright, *Multifaceted Assessment for Early Childhood Education* (Thousand Oaks: Sage, 2010), 246

[15] Lesley A. Craig-Unkefer and Ann P. Kaiser, "Improving the Social Communication Skills of At-Risk Preschool Children in a Play Context," Topics in Early Childhood Special Education, 22 (2002): 1-13

Stormont, Lewis, & Beckner[16] use a matrix to provide clear and defined rules of expectations for preschool children:

	Classroom	Outside	Bus	Hallway
Be Safe	Use walking feet Sit in your spot Pretzel legs Keep hands and feet to self Listen to the teacher	Listen to teachers Slide on your bottom Watch for driving trikes	Sit in your seat Listen to the driver Wait on the sidewalk	Use walking feet Eyes forward Hands to your side
Be Kind	Share toys Quiet hands Use kind words with friends	Take turns Use kind words	Say "Hi" to the driver **s** Use kind words	Use quiet voices Smile at others
Be Responsible	Clean up Wash hands	Line up when called Put away toys	Buckle up Take your backpack	Stay in line Keep hands to yourself

Source: **Figure 1**. Sample Matrix of Program Rules and Defined Expected Behaviors, Melissa Stormont, Timothy J. Lewis, Rebecca Beckner, "Positive Behavior Support Systems: Applying Key Features in Preschool Settings" Teaching Exceptional Children (2005)[17]

Additional areas of instructional need are rhyming, alliteration, oral reading of books and magazines, sight word identification, and picture naming. Often the comprehension of these early literacy skills can be predictive of reading achievement in the primary grades. Teaching children to make choices develops critical thinking skills and contributes to feelings of situational control for preschoolers. The preschool skill sets used when making choices are communication skills, motor skills, social skills, and cognitive skills. Presenting young children with many opportunities to make choices clearly sets the tone of independence, interaction, and socialization. Children with delayed development have more difficulty making choices and understanding the implications of their choices. Giving children time to decide or giving them further explanation of the choice and the consequences of their choices will begin to impact their decision making skills. When parents or guardians make most of the choices for children, it slows their critical thinking skill development and contributes to their frustration in an educational environment. Sometimes it is beneficial to allow children to make poor choices,

[16] Melissa Stormont, Timothy J. Lewis, Rebecca Beckner, "Positive Behavior Support Systems: Applying Key Features in Preschool Settings," Teaching Exceptional Children (2005), 45

[17] Melissa Stormont, Timothy J. Lewis, Rebecca Beckner, "Positive Behavior Support Systems: Applying Key Features in Preschool Settings" Teaching Exceptional Children (2005), 45

experience the consequences, and process the problem solving procedures to correct their mistakes or minimally informed decisions. Clark and McDonnell (2008) in their study of decision making in children with visual disabilities and multiple disabilities concluded that, "intervention…was successful in increasing the accuracy of the …choices …and (providing) systematic instruction (in making choices) increased the accuracy of choices made."[18]

Conclusion

Children with special needs on all levels need to be provided diagnosis and remediation early in their educational lives. The parents are the primary interventionists with the school personnel providing additional support and directions for the remedial activities. Intervention needs to be implemented early and consistently to assure the best opportunity for success in academics as well as social interactions. Professionals in the field of disabilities should team up with parents to provide a solid foundation for infants and preschool children so that as they enter a public or private educational system they experience individualized positive reinforcement and feedback on their academic objectives. A coordinated effort of intervention will provide the highest rate of inclusion into the mainstream and academic achievement.

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