2001

The relationship between language development and self-help skills in developmentally delayed infants and young children

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Running Head: Language and Self-Help

THE RELATIONSHIP BETWEEN LANGUAGE DEVELOPMENT AND SELF-HELP SKILLS IN DEVELOPMENTALLY DELAYED INFANTS AND YOUNG CHILDREN

Thesis submitted to
The Graduate College of
Marshall University

In partial fulfillment of the
Requirements for the Degree of
Master of Arts
Psychology

by

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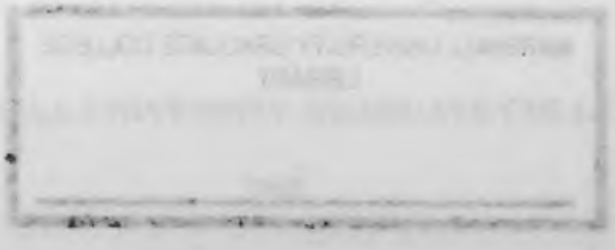
Marshall University

Huntington, West Virginia

2001



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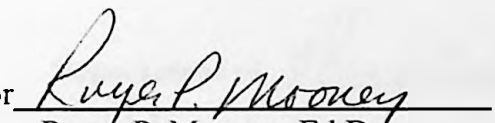
Thesis Committee

Major Professor 
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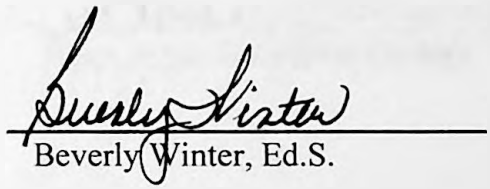
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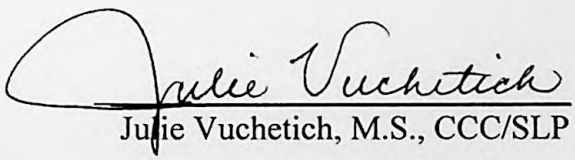
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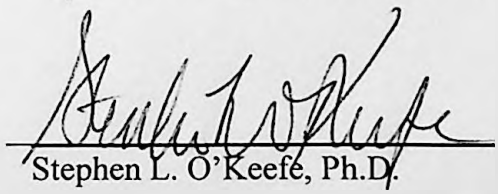
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2001

This thesis was accepted on 04 (Month) 11 (Day) 01 (Year)

as meeting the research requirements for the master's degree.

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Abstract

The author explored the relationship between language skills and self-help skills in young children diagnosed as developmentally delayed. Twenty-eight children from the West Virginia Birth to Three Program at Southern Highlands Community Mental Health Center in Princeton, West Virginia, were involved in the research. The data was analyzed using the Spearman r formula. The analysis found a strong positive relationship between language skills and self-help skills. The results indicated that developmental interventions need to be global and not delay-specific. Young children learn skills in the various areas of development concurrently. Recommendations for future research were made.

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Introduction

The six components of development, gross motor, fine motor, cognitive, language, self-help, and social-emotional, have been widely researched in the birth to three population (Hadadian, 1996; Hoge & Parette, Jr., 1995; Parks, 1997; Peck, Odom, & Bricker, 1993; Weitzner-Lin, Chambers, & Siepierski, 1994; Wesley, 1995). To date, however, there has been little significant systematic research that has attempted to identify the relationship between language skills and self-help skills. Gonzalez-Mena and Eyer (1993) found that certain mental and physical skills must be present for language to progress. Children that lack the ability to manipulate their environment through the use of gross motor and fine motor skills have difficulty learning language: "Infants and toddlers can 'think' before they acquire language, but when children really begin to use language, their cognitive abilities take a major step forward" (p. 135). Rice (1993) stated that children use language and verbal interactive skills as a way of furthering development. This study explored the relationship between language skills and self-help skills among young children diagnosed as developmentally delayed.

Much clinical research has addressed the relationship between language and social-emotional skills and language and cognitive skills (Gonzalez-Mena & Eyer, 1993; MacDonald & Carroll, 1994; Orelove & Sobsey, 1996; Rice, 1993). Historically, the research has been done with school age children. The passage of Public Law 99-457 in 1986 (Tingey, 1989) stimulated an intense interest in the education of infants and young

children birth to 5 years of age. The federal government mandated that states provide appropriate educational programs for young children with handicaps or those children who are at risk for handicapping conditions.

Dacey and Travers (1991) stated that the first years of life are critical and set the stage for the future development of children. According to Tingey (1989), with the research on the first five years of life, a new field of study has emerged:

> Early intervention is by no means a new concept, philosophy, or service. Services in some form for infants and their families have been part of American society from the beginning of the century; however, early services may bear little resemblance to what is offered today. The concepts, philosophies, and agencies involved in today's services have historical roots in what might be called the growth of more sophisticated public understanding and concern for the needs of children. (p. ix)

Professionals in psychology, speech and language pathology, education, physical therapy, occupational therapy, nursing, nutrition, and medicine receive specialized training with infants and young children, and their families (Lynch & Hanson, 1993).

Early intervention focuses on services provided to infants and toddlers who are at risk for or are showing signs of a developmental delay (Coleman, 1993). An infant or young child who is not achieving new skills in the typical time frame or who is exhibiting behaviors that are not appropriate for the child's age, or both, is considered developmentally delayed. Training emphasizes the development of basic skills through

planned interactions that minimize the effects of the infant or young child's disabling condition.

Language or communication is "the developmental area that involves skills which enable people to understand (receptive language) and share (expressive language) thoughts and feelings" (Coleman, 1993, p. 65). Research in the 1950's found correlations between everything from language and intelligence to health and language proficiency (Smith, 1972). The first efforts to address the communication problems of children with mental retardation and developmental disabilities began in the 1970's (Warren, 1992). Tingey (1989) found that before Public Law 99-457 problems with language were not an issue until a child entered school. On the other hand, according to Dacey and Travers (1991), by the time a child enters school, the window of opportunity for learning language has passed: "Although subtle refinements are made between ages of 5 and 10, most youngsters have completed the greater part of the process of language acquisition by the age of 4 or 5" (p. 183).

Self-help skills include independent feeding, sleep patterns, dressing, toileting, grooming and hygiene, and independence within the household (Parks, 1997). Performing self-help tasks makes the child feel better about himself or herself and creates a perception in others that the child is competent and capable of learning. The ability to feed oneself, dress, and toilet is a sign of independence (Orelove & Sobsey, 1996). The most comprehensive programs developed for teaching self-help skills have

grown from work with individuals with moderate and severe disabilities (Cook, Tessier, & Klein, 1992).

Although a great deal of research has explored the relationship of language skills and social skills, and language skills and cognitive functioning, little has focused on the relationship between language development and self-help skills. This study was designed to explore the relationship between language development and self-help skills among developmentally delayed young children. With this knowledge, professionals working with developmentally delayed children will be better able to understand the interaction between language skills and self-help skills which will facilitate the development of successful intervention programs.

Method

Subjects:

Twenty-eight children between the ages of birth and 3 years participated in this research. Fifteen males and 13 females were involved in the study. The children were clients of Southern Highlands Community Mental Health Center and were diagnosed as developmentally delayed by an Early Intervention Specialist. Southern Highlands Community Mental Health Center is a non-profit behavioral health organization located in Princeton, West Virginia. The program provides mental health, substance abuse, and early intervention services. Referrals come from family members, physicians, and other agencies. The vast majority of the young children receive public aid and medical insurance through the West Virginia Department of Health and Human Resources.

Procedures:

Twenty-eight children from the pool of children identified as developmentally delayed in 1999 were randomly selected to participate in the study. The test scores on the Early Learning Accomplishment Profile (ELAP) were collected from the client's chart. The ELAP had been administered by a Qualified Early Intervention Specialist. An Early Intervention Specialist is a Bachelor level professional certified by the Office of Maternal and Child Health.

Instrument:

The Early Learning Accomplishment Profile (ELAP) is a developmental assessment used for children functioning between birth and 3 years of age. The ELAP yields a developmental age based on the chronological age. The instrument consists of

412 items divided into six developmental domains: gross motor, fine motor, cognitive, language, self-help, and social-emotional. An infant or young child is labeled as developmentally delayed if there is a discrepancy of at least 25% between the chronological age and the developmental age in one or more of the developmental domains. The test yields developmental scores between newborn (0) and 36 months.

The test has been widely used in early intervention programs to determine the extent of developmental delay and as a guideline for treatment. The items on the ELAP are taken from 19 standardized instruments. Each item is referenced as to its origin. No reliability or validity studies are reported in the manual (Glover, Preminger, & Sanford, 1978). The test does not correct for prematurity.

Results

Analysis of Data:

The study involved a non-experimental design. The variables were language skills and self-help skills. The data was analyzed using the Spearman r formula. The Spearman r is a correlation coefficient used with ranked data. The correlation coefficient describes the strength of the relationship between the two variables. Alpha level was set at .05.

The results of the Spearman r indicated that there was a significant positive correlation between language skills and self-help skills in infants and young children identified as developmentally delayed at the .01 level ($r_s = .872$, $N = 28$). The correlation coefficient is shown in Table 1. The scores are shown in Appendix B.

Table 1 Spearman rank correlation coefficient

Correlations

			Language	Self-Help
Spearman's rho	Language	Correlation Coefficient	1.000	.872**
		Sig. (1-tailed)	.	.000
		N	28	28
	Self-Help	Correlation Coefficient	.872**	1.000
		Sig. (1-tailed)	.000	.
		N	28	28

**. Correlation is significant at the .01 level (1-tailed).

Discussion

The results of the research indicated a significant positive correlation between language skills and self-help skills. The Spearman r was .872 which was significant at the .01 level. The child that scores high in language skills will score high in self-help skills and the child that scores high in self-help skills will score high in language skills. Primarily intervention strategies in past years focused on specific developmental delays. For example, if a child had developmental delays in language and gross motor areas, the speech therapist would work with language skills while the physical therapist would focus on physical development. Recent research, however, indicates that children can learn skills in various areas of development concurrently in their natural environment during everyday routines, such as during feeding time, bath time, or play time. The results of this study support research of Gonzalez-Mena and Eyer (1993). The authors stated that developmental interventions should be global and not delay-specific.

Although previous research indicated that language and social skills were related (Warren & Riechle, 1992; Rice, 1993; Odom & Brown, 1993; and Goldstein & Gallagher, 1992) and that language and cognitive skills were related (Tingey, 1989; Dacey & Travers, 1991; and Peck, Odom, & Bricker, 1993), the results of this study indicated that language and self-help skills are also significantly related. Professionals working with infants and young children with developmental delays in language and self-help should view development as a whole, rather than as segmented parts.

A speech therapist could help a child with toileting or feeding skills while focusing on language development. A behavior management specialist could enhance language development while helping the child learn to toilet or to dress.

The author would suggest that future research use a larger and more diverse sample size. This study involved 28 children diagnosed as developmentally delayed from rural southern West Virginia which limits the ability to apply the results to other settings. Current assessments tend to measure development in terms of functionality rather than comparing age to development. Different scores mean different things for different ages. As such, analysis of the data across ages may be difficult due to the nature of the scores.

Overall, the research indicates that professionals may need to be trained in all areas of development. Professionals need to engage in collaboration during the assessment of the child in order to determine the present levels of functioning across developmental domains. The teaming will result in collapsing individual skill development into an integrated program that addresses the treatment plan in a functional manner. The model of teaming utilized when more than one professional is working with a child may be important. In addition, providing instruction in a natural environment will enhance the generalization of skills.

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Appendix A

Literature Review

Development in the birth to three population has been widely researched (Hadadian, 1996; Hoge & Parette, Jr., 1995; Parks, 1997; Peck, Odom, & Bricker, 1993; Weitzner-Lin, Chambers, & Siepierski, 1994; Wesley, 1995). While there has been a great deal of research on the development of language skills and social-emotional skills and language skills and cognitive skills, little research has explored the relationship between language skills and self-help skills. The author will review the research on the relationship between language skills and social-emotional skills and language skills and cognitive skills, and the research on self-help skills.

Language or communication is "the developmental area that involves skills which enable people to understand (receptive language) and share (expressive language) thoughts and feelings" (Coleman, 1993, p.65). Research in the 1950's found correlations between everything from language and intelligence to health and language proficiency (Smith, 1972). The first efforts to address the communication problems of children with developmental disabilities began in the 1970's (Warren, 1992). Tingey (1989) stated that before Public Law 99-457 problems with language were not an issue until a child entered school. Dacey and Travers (1991) found that by the time a child enters school, the window of opportunity for learning language has passed: "Although subtle refinements are made between ages of 5 and 10, most youngsters have completed the greater part of the process of language acquisition by the age of 4 or 5" (p. 183).

For many years, research focused on minimizing delays in communication and delays in social skills in isolation. According to Warren and Reichle (1992), however, "Divorcing communicative interaction from social interaction is a difficult, if not impossible task. Communicative behavior is usually considered a subset of social behavior" (p. 83). Among children with developmental disabilities, communication skills are of utmost importance because the skills allow the child to help control the social environment. Tingey stated that "A child who cannot communicate lacks an important tool for social interaction" (1989, p. 167). Children use language and verbal interactive skills in order to enhance social development (Rice, 1993). Rice differentiated between socialization as a source of language and language as a tool of socialization. The author found that: "Children with limited language are vulnerable in two ways: They are unable to fully capitalize on socialization as a source of language, and they are at risk for participation in social interactions as a consequence of their limited language" (p. 140).

James A. Smith (1972) noted, " We can apply the forms of speech that we know to the social situation in which we find ourselves...speech is, above all, a social process" (p. 43). Language may determine social status and social status may determine language. Smith found that people use different forms of language depending on the social situation. Determining the type of language to use in a given situation is one of the first

challenges of communication. A person can be accepted or rejected in the social environment depending on the form of language used.

In research on social interaction skills intervention with young children with disabilities, Odom and Brown (1993) found that incidental teaching of social behavior often promotes language development. Incidental teaching allows the child to initiate play activities while teachers or others model language and social skills. This allows the child the freedom to explore language and social interactions and enhances both areas of development. Social skills training groups, in which teachers train the child directly in areas of social skills, are effective for some typically developing children and some adults with disabilities. Social skills training is typically verbal and therefore a child with a language delay may not be able to learn from the experience. Goldstein and Gallagher (1992) also found that teaching social skills directly may not be beneficial to preschoolers with speech language impairments because "learning how to share and how to resolve conflicts, respecting the rights or acknowledging the feelings of others, and acknowledging other's verbalizations often require children with speech language impairments (SLI) to generalize those skills to other contexts" (p.205). The research suggests that the best method for teaching social skills to children with language impairments is to blend social skills training with peer intervention: "Teaching specific communicative skills should be coupled with strategies for ensuring that a receptive social environment will occasion and reinforce the use of those skills" (Goldstein & Gallagher, 1992, p. 208). Orelove and Sobsey (1996) said that the environment plays

an important role in the development of language with children with disabilities: "Although structured intervention is desirable and probably necessary to assist many children with multiple disabilities in acquiring communication skills, providing a social environment that fosters communication skills acquisition is probably of equal or greater importance" (1996, p. 286).

"Communication is intertwined with all areas of a child's development" (Gonzalez-Mena & Eyer, 1993, p. 143). A problem in any area of development may cause language delays. Social and emotional problems may cause a delay in language development and a delay in language may cause social and emotional problems. The authors recommend that all areas of development be explored as a whole rather than in fragments. Dacey and Travers (1991) stated that any interaction includes physical, emotional, social, cognitive, and language features and any change in one area will affect change in the other areas.

Social skills affect the acquisition of communication skills at an early age. Social growth establishes a foundation for language skills to develop:

> Communication development during the first year of life, and many of the precursors of language, depend on the infant's or young child's seeking out the attention of and interaction with others in his or her environment. The child who lacks this drive toward social intercourse,

> as, for example, in many cases of autism, will most likely be significantly impaired in the development of communication skills. (Cook, Tessier, & Klein, 1992, p. 325)

Early intervention strategies play an important role in the facilitation of social and communication skills.

A great deal of clinical research has examined the relationship between language and cognitive skills (Tingey, 1989; Dacey & Travers, 1991; Peck, Odom, & Bricker, 1993). According to Coleman (1993), cognitive development refers to "the developmental area that involves thinking skills, including the ability to receive, process, analyze, and understand information" (p. 63). Piaget (as cited in Dacey and Travers, 1991) was a pioneer in the field of cognitive development. Piaget stated that cognitive abilities develop in stages whereby each new stage builds upon previous stages. The first two years of life, in which mental growth and language growth are tremendous, are extremely important to future development. Piaget believed that children must first understand concepts before they have the ability to use words that explain or describe the concepts. While Piaget argued that cognitive development precedes language development, others believe that the reversal was true: Language development precedes cognitive development (as cited in Rathus, 1990). According to this view children form cognitive classes so that they can better understand objects that are described by words.

Gonzalez-Mena and Eyer (1993) found that certain mental and physical skills must be present for language to progress: "Infants and toddlers can 'think' before they

acquire language, but when they really begin to use language, their cognitive abilities take a major step forward" (p. 135). The researchers found that language has a large impact on thinking and cognitive skills. Studies have shown that there is a direct link between particular aspects of cognition and language development in children with and without disabilities (Peck, Odom, & Bricker, 1993). The cognitive-interactionist approach, based on Piaget's theory, considers language as one aspect of cognitive ability. The concept that cognitive skills precede language skills prompted early intervention programs to focus not only on language skills, but cognitive skills in general.

In the 1970's, infant testing involved motor, language, self-help, and social skills as part of the evaluation of cognitive skills. Tingey (1989) stated, "If one examines curriculum objectives across various types of intervention programs, what seems to be a cognitive objective may well be a language objective in another program" (p. 215). The author found that progress in one area of development was highly influenced by progress, or lack thereof, in other domains and that it was difficult to examine the individual components of development in isolation.

The performance of self-help tasks makes the child feel better about himself or herself and creates a perception in others that the child is competent and capable of learning. Self-help skills include independent feeding, sleep patterns, dressing, toileting, grooming and hygiene, and independence within the household (Parks, 1997). Self-help skills, more than any other area of development, are culturally bound (Tingey, 1989). Most parents have set expectations for when a child should be walking or talking,

but may be unsure about how old a child should be before being independent in toileting or dressing:

> Even within one society, parents usually expect children to acquire specific motor or language skills at a particular age, but in the area of self-care skills, these tasks and their appropriate ages of acquisition are not as firmly fixed in most parents' minds. (p. 243)

Tingey found that cognitive and fine motor skills are closely linked to feeding skills. According to the author, infants want to interact on a more cognitive level in the eating process, but the majority of undeveloped fine motor skills limit their ability. With regard to dressing independence, gross motor and fine motor skills are essential. Tingey found that the development of gross motor, fine motor, and cognitive skills affect whether or not a child is able to develop toilet skills. Overall, the ability to feed oneself, dress, and toilet is a sign of independence in a child (Orelove & Sobsey, 1996). The most comprehensive programs developed for teaching self-help skills have grown from work with individuals with moderate and severe disabilities (Cook, Tessier, & Klein, 1992).

Linder (1993) suggested using a transdisciplinary play-based intervention in the study of infant and toddler development. The author recommended that the specialist study development across domains rather than in individual segments. The child is allowed to be free to explore the play environment based on individual interests. Linder stated that children become motivated to learn when able to choose their own play

opportunities: "In the TPBI approach, motivation to perform comes from within, not from without (internal versus external rewards) as much as possible" (p. 22).

This study was designed to determine the relationship between language development and self-help skills. Although a great deal of literature has focused on the relationship of language and social skills and language and cognitive skills, the author was unable to find any research that explored the relationship between language development and self-help skills. With this knowledge, professionals in the field will be able to better understand the relationship among the components of development and work more effectively with the developmentally delayed children.

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Appendix B

Data

Data

	language	selfhelp
1	18	18
2	18	22
3	10	6
4	18	21
5	13	22
6	10	14
7	12	12
8	12	12
9	24	30
10	18	24
11	21	26
12	9	12
13	5	6
14	13	17
15	12	16
16	18	30
17	6	7
18	15	30
19	18	30
20	15	18
21	5	6
22	13	15
23	12	16
24	18	18
25	10	16
26	12	24
27	6	8
28	6	10