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A comparison of the effects of integrating special education preschoolers with their nondisabled peers

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A COMPARISON OF THE EFFECTS OF INTEGRATING SPECIAL EDUCATION
PRESCHOOLERS WITH THEIR NONDISABLED PEERS

by
Christina Donio Sansone

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
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Approved by _____
Dr. Xin

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ABSTRACT

Christina Donio Sansone
A COMPARISON OF THE EFFECTS OF INTEGRATING SPECIAL EDUCATION
PRESCHOOLERS WITH THEIR NONDISABLED PEERS
2002
Dr. Xin
Master of Arts in Special Education

This study examined developmental outcomes associated with services in inclusive and self-contained preschool classrooms. The growth of nine inclusive special education students and twelve self-contained students were investigated. These students were matched for chronological age and classification. Progress was measured with the Brigance Diagnostic Inventory of Early Development-Revised using a posttest only design in gross motor skills, fine motor skills, speech/language skills and general knowledge. Results show that there is a significant difference between these two groups on gross motor standing skills in the inclusive setting. There are no significant differences in other skill achievement.

MINI ABSTRACT

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The purpose of this study was to examine and compare the developmental

outcomes of special education preschoolers in two settings. Nine inclusive students and

twelve self-contained students were compared by posttest results using the Brigance

Diagnostic Inventory of Early Development-Revised. The findings indicated a significant

difference between these two groups on gross motor skills. There are no significant

differences in other skill achievement.

Acknowledgments

This thesis and masters degree is an accomplishment I owe to MY MOM who raised me to be independent, hard working and instilled a special drive deep within me to never quit anything.

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Chapter 1

Statement of Problem

What is the most appropriate environment for educating children with disabilities? This has been a question at the forefront of public debate for a number of years. During preschool, children participate in a variety of educational activities and settings that vary in terms of location, sponsoring agency, goals, philosophy, and accessibility. Given the range of service delivery for the children with disabilities, educational placements are clustered into four categories according to the degree to which children with and without disabilities are educated together: (a) full inclusion, (b) partial inclusion, (c) integrated activities, and (d) segregated (U.S. Department of Education, 1997). Some involved in this debate maintain that the special education continuum of services offers unique advantages. These could be contributed to small class size, trained teachers, auxiliary services, functional skills curriculum, and individualized instructional materials and procedures (Bennett, Deluca, & Bruns, 1997). Concerns are also expressed about the frustration children might experience within a general education setting among more academically and socially able students (Bennett, Deluca, & Bruns, 1997).

In the past years studies have been conducted to examine developmental outcomes associated with services in inclusive and self-contained preschool classrooms (Bennett, Deluca, & Bruns, 1997). The effects of classroom inclusion on the developmental and social growth of preschool children with disabilities have been

investigated on children matched for chronological age, gender, initial level of functioning, related services received, and attendance schedules (Hundert, Mahoney, Mundy, & Vernon, 1998). Children's progress was measured with the Brigance Diagnostic Inventory of Early Development-Revised in both inclusive and self-contained settings. Results indicate that children functioning at a lower level of social and emotional functioning perform equally well in inclusive and specialized settings, while children functioning at a relatively higher level perform better in inclusive settings than in specialized settings (Hundert, Mahoney, Mundy, & Vernon, 1998; Jenkins, Odom, & Speltz, 1989).

Advocates of integration of children with disabilities into general education indicated many social advantages such as positive peer modeling and greater achievement through exposure to peers (Buysse & Bailey, 1993). Children with disabilities may display competent skills in language, behavior, flexibility, friendship, and prosocial acts when they are in a general education setting with their peers.

Their academic performance was found to be better than comparable children in special education only classrooms (Odom & Diamond, 1998). In full inclusion placements, children with disabilities participate as full members of the general education class. A summarized four dimensions to support inclusion of preschool children with disabilities in general education classrooms (Bailey, McWilliam, Buysse, & Wesley 1998). First, from a legal perspective, federal legislation mandates that all children with disabilities receive educational services in a setting with, or in close proximity to, children who do not have disabilities. Second, from a moral and philosophical perspective, it is argued that children should not be segregated from their typically

developing peers because segregation is antithetical to basic human rights and has negative effects on children with disabilities (Esposito & Reed, 1986). Conversely, inclusion results in positive changes in societal attitudes toward these children. Third, the argument is made that placing preschool children with disabilities with typically developing peers has developmental and educational benefits for both groups (Odom & Diamond, 1998). Finally, empirical studies have supported inclusion settings; for example, inclusion of preschool children with disabilities has generally been found to benefit the development of social competence and play behavior (Buysse & Bailey, 1993).

There is clear evidence that preschool inclusive programs may effectively meet the needs of children with disabilities. Inclusive preschool programs provided positive experiences to young children that will support the development of positive attitudes toward individuals with disabilities, both during preschool and in subsequent years (Buysse& Bailey, 1993). Participation in programs that have included peers with disabilities has been associated with children and adolescents' positive attitudes toward people with disabilities. Contacting with age appropriate peers with disabilities at the young age was associated with long lasting positive gains in elementary-age children's attitudes toward people with disabilities (Esposito & Reed, 1986).

Most families value inclusion to help their children "reach her potential," "get socialization," "make friends," "make a productive citizen out of himself," and "get the experience he needs in relating to typically developing kids." Families frequently indicate that their children's needs for appropriate role models are learning academics and social skills, and express their feelings that inclusive settings are best suited to

provide these learning experiences (Bailey & Winton, 1987; Diamond & Hestenes, 1994; Green & Stoneman, 1989; Guralnick, 1994; Peck, Carlson, & Helmstetter, 1992). However, they also express some concerns about inclusion, such as obtaining special services for their children, as well as large class size and staff preparation in inclusive settings (Green & Stoneman, 1989).

In the studies to compare learning outcomes between in inclusive and self-contained settings found mixed or no significant differences in gaining social skills of children with and without disabilities (Jenkins et al., 1989; Rule et al., 1998). For example, multiple studies indicated that the mere proximity of children with disabilities to children without disabilities might not result in positive outcomes without carefully planned interventions that promote interactions among children (Buysse & Bailey, 1993; Lamorey & Bricker, 1993). In addition, little generalization of social interaction for children when they leave classroom environments that are designed to encourage interaction between peers with and without disabilities (Buysse & Bailey, 1993). Studies that compared developmental/educational outcomes in inclusive versus self-contained settings typically found that children's performance over time, as measured by standardized instruments, did not vary as a function of the type of setting (Buysse & Bailey, 1993; Fewell & Oelwein, 1990; Jenkins et al., 1989; Rule et al., 1998).

Fewell and Oelwein (1990) also found that children with Down syndrome made greater gains in expressive language in self-contained settings than in inclusive settings. In a subsequent study, Mills, Cole, Jenkins, and Dale (1998) found that higher functioning children with disabilities benefited most in reverse mainstream classes that enrolled only 21% typically developing children. When higher functioning children with

disabilities were placed in settings with a preponderance of typically developing children

(e.g. 64%), they showed no more growth than in self-contained special education

classrooms.

The quality of the early childhood environments in inclusive settings appears to

be, at least, comparable to quality in traditional special education classes and community-

based early childhood programs serving only typically developing children. When

general early childhood quality indicators, such as the Early Childhood Environmental

Rating Scale (Harms & Clifford, 1980), are used to assess quality, inclusive preschool

programs receive comparable or higher mean ratings in comparison to traditional special

education programs (LaParo, Sexton, & Snyder, 1998) or regular early childhood

education programs (Buysse, Wesley, Bryant, & Gardner, 1999). However, the quality of

childcare environments in general appears to be mediocre, and concerns about quality in

inclusive environments exist (Bailey, McWilliam, Buysse, & Wesley, 1998). Decisions

on where to place preschool children with disabilities are based upon the needs of

individual children and the concerns and priorities of the parents. Thus, in some context

and for some children, inclusive programs may not be the answer.

Teachers generally have positive attitudes about including children with

disabilities in their classes, but concerns also exist. When asked, early childhood teachers

indicate that children with disabilities should be served in inclusive settings, and they

were confident about providing childcare (Dinnebeil, McInerney, Fox, & Juchartz-

Pendry, 1998). However, teachers are also concerned with their limited knowledge about

children with disabilities and are particularly concerned about enrolling children with

severe disabilities (Dinnebeil et al., 1998).

Children with disabilities are from an extraordinarily heterogeneous population. It is impossible to adopt a "one size fits all" philosophy to provide services to children with disabilities. For example, in a multisite study of inclusion models for elementary-age children with learning disabilities, approximately half of the children showed little or no growth in reading (Billingsley, F., Gallucci, C., Peck, C., Schwartz, I., & Staub, D. 1996). In contrast, children with more severe disabilities were found to generally benefit from inclusion (Buysse & Bailey, 1993), although the generality of this conclusion has been challenged. Preschool children with disabilities also constitute a diverse population, varying broadly in social, linguistic, cognitive, and motor skills as well as in other factors, individual children may respond differently to different educational environments.

Significance of Study

In the past years, many studies have compared the behavior and developmental progress of children with disabilities in inclusive programs to their typically developing peers (Holahan& Costenbader, 2000). In those studies, some lacked comparison group with the random assignment of children, others had classrooms problems including instrumentation and research design, selection confounds, without control for varying programmatic elements across treatment groups (Fewell & Oelwein, 1990; Jenkins, Odom, & Speltz, 1983; Odom & McEvoy, 1988). In addition, fewer studies have compared the developmental and educational achievement of children with disabilities in inclusive versus specialized settings. This present study will add valuable information to the previous research on the education of preschool children with disabilities. This study will also examine the effect of children's achievements in social and academic learning

in different placements (inclusive vs self contained), and four developmental areas: fine motor, gross motor, cognitive and language will be examined.

Statement of Purpose

The purposes of this study are to (a) compare the effects of integrated versus self-contained environments for pre-school children with disabilities, and (b) determine which setting is beneficial for pre-school special education children. In order to complete the study, four skill areas of development: fine motor, gross motor, language and cognitive are examined. A comparison in the gained skills of these areas is conducted in each setting.

Research Questions

This study will answer the following research question:

1. Are there any differences of developmental skills in fine motor, gross motor, cognitive and language between preschoolers with disabilities in inclusive classrooms vs. those in self-contained classrooms?

Chapter 2

Literature Review

Until 1997, 56% of preschools accredited by the National Association for the

Education of Young Children enrolled children with disabilities (McDonnell, Brownell,

& Wolery, 1997). The most appropriate environment for the education of children with

disabilities has been a question at the forefront of public debate for a number of years

(see Chesley & Calaluce, 1997; Kliewer, 1998, 1999; Sandler, 1999; Simons, 1998).

Advocates of integration for children with disabilities cite such social advantages

as positive peer modeling and greater achievement through exposure to peers. Children

educated in general education classrooms are thought to display competent skills in

language, behavior, flexibility, friendship relationships, and prosocial acts (Lipsky &

Gartner, 2000; Stainback & Stainback, 1992). In addition, advocates indicate academic

improvements, stating that children with disabilities in general education classrooms do

better academically than comparable children in special education classrooms (Baker,

Wang, & Walberg, 1994-1995).

Integrated/Inclusive Programs

Inclusive programs for preschool children appear to have two dimensions. They

are organizational context and individualized service delivery model (McWilliam, 1995).

For example, organizational contexts include community-based childcare and preschool

classes, Head Start classes, and public school classes. Individualized services are

provided to children through either direct or collaborative itinerant teaching, team teaching or a special education approach.

Inclusion of preschool-age children with disabilities in classroom settings with typically developing peers is a relatively recent phenomenon. Since the early 1970s, the idea of mainstreaming was raised when the Education for the Handicap Act was first established (Allen, Benning, & Drummond, 1972). In the early 1990 inclusion is regarded as a major service alternative for children with disabilities and their families. Inclusion has become a mainstay in the field of early childhood special education (Bailey, McWilliam, Buysse, & Wesley, 1998). This movement different from traditional special education programs, which were originally built on a downward extension of special education designed for school-age children to preschool-age children, to programs in which children with disabilities are surrounded by typically developing peers, is continuing to move forward. Many policy makers and administrators in school systems now identify inclusion as the first service alternative for young children with disabilities (U.S. Department of Education, 1997).

Children with mild disabilities are more likely to be placed in inclusive settings than those with severe disabilities (Cole, Mills, Dale, & Jenkins, 1991). This may be due, in part, to how comfortable teachers feel having children with severe disabilities in their classrooms (Gemmell-Crosby & Hanzlik, 1994). However, there may be good reasons for including children with severe disabilities in general preschool settings. Hundert and colleagues (1998) found that children with severe disabilities who participate in inclusive settings appear to score higher on standardized measures of development than that of comparable children enrolled in traditional special education settings.

The quality of the early childhood environments in inclusive settings appears to be, at least, comparable to the quality in traditional special education classes and community-based early childhood programs only for typically developing children. When general early childhood quality indicators, such as the Early Childhood Environmental Rating Scale (Harms & Clifford, 1980), are used to assess quality, inclusive preschool programs receive comparable or higher mean ratings in comparison to traditional special education programs or regular early childhood education programs (Buysse, Wesley, Bryant, & Gardner, 1999).

Inclusive settings, individualized instructional techniques and curricula have been employed, which produced positive behavioral and developmental outcomes. Specialized instruction is an important aspect of successful inclusive preschool programs. Such instruction is naturalistic in nature (Rule, Losardo, Dinnebeil, Kaiser, & Rowland, 1998) in that it might blend with the activities and routines to meet the needs of young children (Frea, Craig, Odom, & Johnson, 1999). Teachers in early childhood generally have positive attitudes toward including children with disabilities in their classes. They think that children with disabilities should be served in inclusive settings and feel confident about providing childcare (Dinnebeil, McInerney, Fox, & Juchartz-Pendry, 1998).

An assumption in some early childhood special education programs is that children's disabilities prevent them from taking advantage of the experiences that promote typical child development. Recent research indicates that this assumption may not be valid (Lamorey & Bricker, 1993). A study on integrated programs found that children with disabilities enrolled in integrated early childhood programs demonstrated higher levels of social play and more appropriate social interactions, and were more

likely to initiate interactions with peers than those in self-contained special education preschool classes (Peck, Odom, & Bricker, 1993). Children with disabilities in integrated classes make gains in language, cognitive, and motor development that are comparable to peers in self-contained special education classrooms (Fewell & Oelwein, 1990).

It is also found that children with disabilities display more advanced play skills in inclusive settings than those in self-contained classrooms (Mills, Cole, Jenkins, & Dale, 1998). However, Odom and McEvoy (1988), noted that even in inclusive settings, young children with disabilities were more likely to engage in noninteractive play, but less likely to participate in play groups, and are chosen as playmates less frequently than their peers without disabilities.

The work of Billingsley, Gallucci, Peck, Schwartz, and Staub (1996) provides guidance for expansion of inclusive programs. Following an inductive and empirical approach, they observed school-age children with severe disabilities included in general education settings. Across a 3-year program of research with 35 children, they found that children acquire skills in inclusive settings. Moreover, two other important groups of outcomes also were identified: membership (e.g., children's participation as a full member of the class) and relationships (e.g., as reflected by children's interaction with peers and adults).

Some research has suggested that it is the type of learning experiences that are provided rather than the type of classroom setting (integrated or segregated) that is critical to fostering children's development. Mahoney and his colleagues (1992) found that children with disabilities were more likely to initiate play activities and communications with their peers in settings where the adults displayed responsive and

child-oriented teaching styles than in classes where adults used directed and instructionally oriented styles. Results of another study indicated that child-directed teaching strategies resulted in greater gains in communication skills for children with severe disabilities than did direct instruction (Yoder, Kaiser, & Alpert, 1991). The teaching practices described in these studies are compatible with developmentally appropriate teaching practices in regular early childhood education programs.

Positive outcomes are reported for children with disabilities and typically developing children in inclusive settings. Studies have concluded that on standardized developmental measures, children with disabilities perform as well in inclusive settings as in traditional special education settings (Buysse & Bailey, 1993; Lamorey & Bricker, 1993). In addition, some studies found better performance of children with disabilities in inclusive settings (e.g. Hundert, Mahoney, Mundy, & Vernon, 1998; Jenkins, Odom, & Speltz, 1989). When using observational measures, researchers have found that the behaviors of children with disabilities appear to be positively affected by participation in activities in classrooms with typically developing children (Guralnick, Connor, Hammond, Gottman, & Kinnish, 1996; Hanline, 1990). In addition, participating in inclusive settings appears to positively affect the attitudes that typically developing children have toward children with disabilities (Peck, Carlson, & Helmstetter, 1992), as well as increase their knowledge of certain types of disability conditions (Diamond & Hestenes, 1994, 1996).

A setting seems especially relevant for children with developmental delays. Integration of disabled children with typically developing children has become a common practice. These integrated settings afford opportunities for teachers and

typically developing peers to encourage and model more advanced behaviors for children with developmental delays (Bricker, 1978). Therefore, children at risk for failure to develop social-communicative interactions with their peers would benefit from those interactions (Craig, 1993; Gallagher, 1993; Guralnick, 1980). Consequently, the development of children in integrated settings depends on the nature and extent of the interactions in those settings and on the available strategies for optimizing exchanges with conversational partners (Peck et al., 1993).

Impaired social and communicative skills are prevalent characteristics of young children with developmental delays (Strain & Kohler, 1988). Considerable energy has gone into observing and coding social-communicative behavior in these children, but considerably less attention has been paid to the ways in which contextual variables may influence performance. It has long been recognized that the contexts for social-communicative performance are not all the same, and that behavior varies with in context. In particular, different settings may influence the amount and diversity of social-communicative interactions (Gallagher, 1983).

Children with disabilities engage in social interaction with peers less often than typically developing children in inclusive classrooms. This is the most replicated finding in the preschool inclusion literature (Guralnick, 1982; Guralnick et al., 1996). Children with disabilities engage in a range of community activities outside the preschool classroom, although they may do so less frequently than typically developing children. Ehrmann, Aeschleman, and Svanum (1995) found that children with disabilities participate less frequently in community activities than typically developing children. Still, other researchers have found that young children with disabilities do participate in

some community activities with their parents (Beckman et al., 1998; Guralnick, 1994) and that such increased community participation may be an important outcome of early intervention programs.

Reynolds and Holdgrafer's (1998) exploratory study compared the social-communicative performance of six preschool children with developmental delays who were enrolled concurrently in mainstream (community childcare) and reverse integration (early education program) settings. This provided a unique opportunity to explore the effects of the two kinds of integrated settings. At the same time, this study provided an analysis of attention-getting devices (AGDs). AGDs are defined as verbal or nonverbal indicators of the intent to communicate (e.g., calling by name, touching) that optimize the success of social-communicative interactions by prompting a listener to pay attention to the speaker prior to the production of a message. AGDs are commonly observed in typically developing 2-year-old children, and attention getting is a very basic skill that is easily overlooked as a problem in children with developmental delays (McTear & Conti-Ramsden, 1992). Interactions of participants with conversation partners were generally similar during free play across mainstream and reverse integration settings. It seems that inclusion of children with developmental delays in an integrated setting, at least during free play, may not be sufficient.

However, to promote rates of initiating and responding there is ample practice of crucial elements of social-communicative interaction. Adult and peer-directed intervention may be required in both mainstream and reverse integration settings for promoting increased communicative interactions. Regardless of setting, participants were much more successful in obtaining an appropriate response and in responding

appropriately to partner initiations when an attention-getting device accompanied the initiation. This finding supports previous research on the success of initiations by children with language impairments (Hadley & Rice, 1991) and also points to the importance of AGDs with partner initiations.

Wagner's (1989) study was undertaken to examine the attitudes of parents and teachers toward the integration of young children with special needs and typically developing children into the same early childhood settings, and to determine any significant differences between the teachers' and parents' attitudes. An integration questionnaire was administered to 30 teachers and 30 parents of 3, 4, and 5-year-old children in Hardin County, Ohio. Respondents were asked to rate 10 statements on integration of students with special needs, using a 4-point scale to indicate their level of agreement or disagreement, with total scores ranging from 40 (indicating strong agreement with integration) to 10 (indicating strong disagreement). Completed questionnaires were received from all 60 participants. Analysis of the responses indicated that both parents and teachers were favorable toward integration, with scores ranging from 20 to 40 points. Specifically, both parents and teachers indicated their preference of placing their child in an integrated program. Finally, no significant differences in attitudes were found between teachers and parents. Family members generally express favorable attitudes toward the inclusion of their children in inclusive programs, and positive attitudes increase over time. Parents identify benefits to their children, such as increased acceptance (Bailey & Winton, 1987), opportunities to learn (Guralnick, 1994), and availability of good developmental models (Bennett, Deluca, & Bruns, 1997).

Self Contained/Special Education Programs

While some early childhood experts have advocated for universal inclusion, others have argued for a continuum of services to meet the individual needs of preschool children with disabilities. Studies have reported mixed or no significant differences in social outcomes between inclusive and self-contained settings (Jenkins et al., 1989; Rule, Losardo, Dinnebeil, Kaiser, & Rowland, 1998). Multiple studies have indicated that the mere proximity of children with disabilities to children without disabilities does not result in positive outcomes without carefully planned interventions that promote interactions among children (Buysse & Bailey, 1993; Lamorey & Bricker, 1993). Jenkins et al. (1989) observed more isolated and unoccupied play in inclusive settings in the absence of such specific and carefully planned interventions. In a review of 16 separate studies, Lamorey and Bricker (1993) found little generalization of social interaction for children when they leave classroom environments that are designed to encourage interaction between peers with and without disabilities. Studies that compared developmental/educational outcomes in inclusive versus self-contained settings typically found that children's performance over time, as measured by standardized instruments, did not vary as a function of the type of setting (Buysse & Bailey, 1993; Fewell & Oelwein, 1990).

Federlein's study (1979), involving 15 emotionally (EH), hearing (HH), or physically (PH) handicapped children in segregated preschool special education classrooms, 15 mainstreamed EH, HH, or PH preschoolers, and 15 nonhandicapped preschool peers, analyzed interactions of both handicapped and nonhandicapped children, ecological information on each classroom setting, and nutritional data obtained parents of

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each child. The findings were that the nonhandicapped students had higher frequency scores in all categories of play, and in the practice play category, mainstreamed handicapped preschoolers scored lower in only one instance. In the segregated settings more adult interaction during the free play periods than that in the mainstreamed settings (Federlein, 1979).

Similar findings were shown in Markowitz & Larson's (1988) report on the Preschool Evaluation Project that was the developmental profiles of handicapped children who attended preschool special education programs. The developmental skills of 646 children (aged 0-5) placed in special education were assessed both at the time of placement and at the end of each school year using the Battelle Developmental Inventory. Five major handicap groups were analyzed separately, including language impairments, multiple handicaps, speech impairments, hearing impairments, and vision impairments. Results showed significant benefits to children receiving preschool special education services. Services for young children with disabilities appeared to produce greater benefits, particularly for those with multi-handicaps (Markowitz & Larson, 1988).

Cole, Mills, Dale, and Jenkins (1991) examined the effects of integration and segregation in a special education preschool program for children with mild to moderate disabilities to determine whether initial level of development differentially influenced achievement gains. No main-effect differences between the two groups were found from several pretest and posttest measures. Aptitude-by-Treatment analyses revealed that higher performing students gained more from integrated classes, whereas lower performing students gained more from segregated classes (Cole et al., 1991).

Fewell and Oelwein (1990) also found that children with Down syndrome made greater gains in expressive language in self-contained settings than in inclusive settings. In a subsequent study, Mills, Cole, Jenkins, and Dale (1998) found that higher functioning children with disabilities benefited most in reverse mainstream classes that enrolled only 21% typically developing children. When higher functioning children with disabilities were placed in settings with a preponderance of typically developing children (64%), they showed no more growth than in self-contained special education classrooms. This study contrasted three classroom ratios of children with disabilities to typically developing peers. Across the total sample of children, the researchers observed significant growth from pre- to posttest on cognitive development using McCarthy GCI and language development PLAI measures. Although the analysis of variance did not reveal significant treatment differences, within-group analysis of pre- to posttest gains indicated moderate effect sizes for the integrated special education treatment, which was primarily responsible for the significant McCarthy gains. The special education-only treatment also produced a moderate level effect size on the McCarthy GCI. In contrast, effect sizes for the mainstream treatment were either negative or near zero across all McCarthy measures. All three treatments resulted in significant gains in language development, as shown by increased PLAI raw scores. Regarding the different levels of inclusion, statistically no significance was found in interactions that were consistent with the previous findings (Buysse & Bailey, 1993; Odom & McEvoy, 1988).

Studies showed that a mix of children with and without disabilities provided by integrated special education classrooms (3 children who are typically developing and 11 children with disabilities) provided improved outcomes for higher performing children

relative to outcomes produced by either higher (mainstreamed) or lower (special education-only) ratios of typically developing classmates. In contrast, Hundert, Mahoney, Mundy, and Vernon (1998) found that children with more severe disabilities made greater developmental gains in preacademic and communication domains in inclusive settings than in segregated environment. These conflicting findings have challenged the idea that one type of placement is best for all children (Bricker, 1995). It is warned that an effort of advocate for single placement for preschoolers with disabilities would sacrifice the individual needs of children.

Holahan & Costenbader (2000) examined developmental outcomes associated with services in inclusive and self-contained preschool classrooms. In their study, the effects of inclusive classroom on the developmental and social growth of preschool children with disabilities were investigated on 15 pairs of children matched for chronological age, gender, initial level of functioning, related services received, and attendance schedules. Progress was measured with the Brigance Diagnostic Inventory of Early Development-Revised in a pre-post situation. Results indicated that children functioning at a lower level of social and emotional functioning performed equally well in inclusive and specialized settings, while children functioning at a relatively higher level performed better in inclusive settings than in specialized settings. In another study, the relationships between developmental progress and the length of the school day and the amount of related services received per week were investigated on 66 participants. Children in full-day classrooms had greater developmental delays but achieved higher rates of progress than their half-day peers in the areas of social and emotional development and overall development (Holahan & Costenbader, 2000).

Holahan and Costenbader's (2000) study has supported previous findings on

preschool inclusion. It seems that one size does not fit all because young children vary in

response to different educational environments. Their study replicated the finding that for

preschool youngsters with disabilities, an interaction exists between child characteristics

and optimal setting. The inclusive setting was found to have a relationship to progress in

the socioemotional domain only and developmental/educational outcomes did not vary

by setting. Preschool children functioning with relatively less delay in social and

emotional development made more progress in this domain in the inclusive settings than

in the self-contained settings; children with greater degrees of social and emotional delay

made about the same amount of progress in either setting (Holahan & Costenbader,

2000).

Research on the effects of half-day versus full-day preschool attendance is limited

and has often been confounded by effects of other variables such as social class and the

subjective nature of data collected. Eno and Woehlke (1987) found that children

attending daily half-day programs did not differ in developmental progress from those

attending full-day alternate-day programs. Taylor, White, and Pezzino (1984) found that

children with communication disorders in full-day classrooms had a small but

statistically significant gain in expressive language scores compared to children in half-

day classrooms, while preschoolers with mental retardation performed better on measures

of cognition and expressive language in half-day programs than in full-day programs. It

is concluded that the additional engaged learning time in full-day programs was not much

greater than that in half-day programs due to frequent breaks, lunch, and naps (Taylor et

al, 1984). It seems that time, full day or half-day may not be critical to those children, but services.

Conclusion

The findings from this review of literature investigation have implications for the issue of pre-school education and inclusion. As indicated by the research discussed, inclusion in the early years has been the target of many educational initiatives (Buysse, Wesley, & Keyes, 1999; Guralnick, 1990, 1999; Peck et al., 1993; Wolery et al., 1993) and the subject of a host of educational research studies (Buysse & Bailey, 1993; Guralnick, 1982; Lamorey & Bricker, 1993; Mills, Cole, Jenkins, & Dale, 1998; Odom & Diamond, 1998; Odom et al., 1999; Peck et al., 1993). Despite the policy and research attention, support for inclusive educational placements for children with disabilities has not been without controversy regarding its benefits for all children (Bricker, 1995; Siegel, 1996).

According to the review of literature, a substantial body of research has found that inclusion with typically developing peers has positive effects on both social and developmental outcomes of preschool-age children with disabilities, and has no negative effects for either group (Lamorey & Bricker, 1993; Odom & McEvoy, 1988). Research indicates that inclusion promotes positive social outcomes for children with disabilities (Lamorey & Bricker, 1993, for a review of research), and children with disabilities in inclusive settings make developmental progress comparable to that of children with disabilities in segregated settings (Cole, Mills, Dale, & Jenkins, 1991; Jenkins, Odom, & Speltz, 1989; Rule et al., 1987). However, the benefits of inclusion may vary with severity of child's disability (Cole et al., 1991), the curriculum used (Jenkins et al.,

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1989), the ratio of children with disabilities to typically developing children and the type, frequency, and intensity of services.

Although a large body of research exists and examines the outcomes of preschool children with disabilities in inclusive and self-contained classrooms, the findings are often conflicting and contradictory. This present study is justified by the fact that more conclusive evidence needs to be found to provide a clear indication of the effects of both types of environments for preschool children with disabilities.

A decision to enroll children in inclusion or self-contained classrooms is a complex process influenced by many factors within families, classrooms, communities, and society. An individual child's experience both affects and is affected by her or his family beliefs and values, aspects of the classroom (e.g., curricular activities, teacher's philosophy) and school (e.g., services offered, philosophy), as well as the policies and values espoused in the larger community.

Children's placement decisions are rarely made on the basis of a single factor. The nature of decision-making with respect to inclusion highlights the complexity of these decisions. Often professionals and parents must weigh a variety of factors in this process. Bailey, McWilliam, Buysse, and Wesley (1998) identified potentially competing factors families must weigh as they consider various educational alternatives. These factors include program quality, availability of specialized services to address children's special needs, and access to family-centered approaches. Though schools and communities may hold these values, it is often difficult to simultaneously achieve all these goals and receive inclusive services as well. The diverse needs of children and families and the degree to which these needs match the existing services within

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communities further influence options of placement. Thus, educational planning and decision making is complex with the potential for competing values and practices from which professionals and parents must choose. Without evidence to make the appropriate decision, the children may suffer. This research is further justified because it can provide another perspective based on classroom investigation that parents and professionals can consider when making this crucial decision.

A relatively large body of research has compared the behavior and developmental progress of children with disabilities enrolled in inclusive programs to their typically developing peers. However, fewer studies have compared the developmental and educational achievement of children with disabilities in inclusive versus specialized settings. Many of the previous studies lack comparison groups and the random assignment of students to classrooms. Other threats to the validity of these studies include problems with instrumentation and research design, selection confounds, and the lack of control for varying programmatic elements across treatment groups. Better designed comparative studies on the effects of preschool inclusion have been called for (Buysse & Bailey, 1993; Fewell & Oelwein, 1990; Jenkins, Odom, & Speltz, 1989; Odom & McEvoy, 1988). This present study addresses the concern for better comparative studies and also adds information to the previous research to better understand the most appropriate way to proceed toward the goal of successful education for preschool children with disabilities.

Chapter 3

Methodology

Samples

Participants in this study consisted of twenty-six disabled preschoolers attending two types of special education classes: an inclusive class and self-contained class. Approximately 50%, (twelve) of the children in the inclusive classes are typically developing children; all twelve children in the self-contained setting have disabilities, (See table 1). Their classification is preschool disabled according to the New Jersey state administrative code. The diagnosis is according to the school districts screening of the five age appropriate developmental domains. Both classrooms operate and follow the same half-day schedule that totals two and a half hours each day.

The self-contained classroom teacher(s) have a BA degree in Special Education with one teacher assistant and one teacher aide. The inclusive classroom has two teachers: one with a BA in Special Education and one with a BA in Elementary Education along with one teacher assistant.

The participating students in the inclusive and self-contained setting were matched by age, classification of preschool disability, and number of years in the program. All students receive occupational and speech/language therapy services in the classroom (See Figure 1). A physical therapy group is given to the self-contained class but not to the inclusive class, however, any student who needs physical therapy is referred to the therapist.

Research Design

A posttest design will be used for a comparative study on the skills preschoolers with disabilities obtained in either the self-contained or inclusive classrooms. The comparison was conducted in the early spring to use the posttest scores at the end of the 2001-2002 school year.

Measurement

The Brigance Diagnostic Inventory of Early Development was used for this study. This standardized measurement is a criterion referenced inventory with 98 skills in 11 developmental domains: perambulatory, gross, and fine motor; self-help skills; speech and language skills; general knowledge and comprehension; social and emotional development; readiness; basic reading skills; manuscript writing; and basic math. All skills are sequenced in each area according to developmental age. In the 1991-revised version, special efforts were made to validate the skill sequencing based on already existing developmental scales and curricular materials. The Brigance can be used as an assessment tool from children age birth to age seven as a diagnostic tool to provide an instructional guide for creating educational objectives. The format allows the recording of multiple administrations. Although technical data on reliability and validity of the scales are lacking, the Brigance is widely used because of it's flexibility and planning utility. Also, the Brigance provides a comprehensive method for identifying the strengths and weaknesses of each child's development.

Procedures

In both settings, the posttest was given when the students were getting ready to transition into kindergarten. The same protocol was used for each student using a

different colored pencil for each administration. Four subtests in this study include: gross motor; fine motor, general knowledge and comprehension, and speech language skills. These four domains provided a broad picture of the child's overall functioning within the classroom settings. The posttest measurement procedures for each skill tested were assessed by observations made by the classroom teacher.

Dependent Variables

There were four dependent variables in the study. They included: gross motor, fine motor, speech language skills, and general knowledge and comprehension. The credit given to the student when the child adequately demonstrates the skill(s) and does not need additional practice, encouragement or time to develop. Gross motor skills are examined by observing standing, hopping and balance beam skills. Each activity begins at the 3-0-age level and end between 6-0-age levels. Fine motor skills include drawing a person, and cutting with scissors. General Knowledge and Comprehension test examined expressing body parts, quantitative concepts, and stating the use of objects when presented with a picture. Speech Language skills test the length of sentences of students, and answering questions about personal data.

Data Analysis

Each group's posttest scores were analyzed by mean and standard deviation then a one-way ANOVA was used to examine if there was a significant different between the two groups.

Chapter 4

Results

Posttest results were analyzed by mean, standard deviation and analysis of variance (ANOVA) with conditions (self-contained versus inclusive classes). Mean and standard deviation of all scores of the Brigance are presented in Table 1.

Table 1

Mean and Standard Deviation of Skill Achievement

Group	Number	Gross Motor				Fine Motor		Speech/ Language			
		Standing		Balance Beam		Blocks		Length of		Personal Data	
		M	SD	M	SD	M	SD	M	SD	M	SD
Self	12	3.250	.425	3.250	1.138	4.417	.900	4.467	1.425	3.883	1.120
Inclusive	9	4.000	.707	3.956	.646	4.778	.667	4.444	1.236	4.444	.882

Table 2

Presents the Results of a One-way ANOVA Analysis

Source of Variance	N	SS	DF	MS	F	P
Between Groups	12	2.893	1	2.893	8.794	.008
Within Groups	9	6.250	19	.329		

A one-way ANOVA analysis of each group's posttest scores yield a significant difference in the standing skill of gross motor, F (1, 19)= 8,794, p = .008 (p< .05). There are no significant differences in other skill achievement in the balance beam, hopping skills of gross motor, block tower building, cutting with scissors skills of fine motor, length of sentences, personal data responses skills of speech language, body parts, quantitative concept and use of objects skills of general knowledge.

Chapter 5

Discussion

The purpose of the present study was to examine the developmental progress special education preschoolers made in two educational settings (inclusive versus self contained) using posttest scores from the Brigance Diagnostic Inventory of Early Development-Revised.

The findings are limited by the small sample size along with a short time period to collect all the data. In addition, only five out of 98 skills were used to compare the developmental growth of the two groups. Further, there were differences in initial level of functioning for all the students in both groups. Given the limitations, the findings indicate that the groups had no significant results other than the standing skill in the gross motor domain.

The first research question on the differences of developmental skills in gross motor, fine motor, speech/language skills and general knowledge indicated one significant difference between groups of the gross motor skill of standing in the inclusive setting. All other posttest results indicated no significant findings between groups. Because of the posttest only design used in the study, there was not a central group to compare, thus, the findings may be limited.

Participating students are classified preschool disabled, however, many of the inclusive special education students are higher functioning. These children have fewer skills to achieve to be considered developmentally appropriate and therefore show less

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growth. The special education students enter the self-contained class initially with lower skills and make more developmental gains over the year, which in turn shows more progress in all skill domains.

There are some limitations of this study. First, the duration of the time period involved is limited. A longer time frame would have enabled an insight of children's developmental growth. Second, the differences in the initial level of functioning between both groups were varied. A sample of students that had similar levels of initial developmental functioning serving, as a control group would have helped the comparison for this study. Third, the Brigance is a criterion-referenced test, thus psychometric properties are not established. Typically criterion-referenced tests are used to compare a child's performance with absolute standards, whereas norm-referenced tests are designed to compare a child's performance to the performance of other children. The criterion-referenced test measures may be less useful for assessing developmental progress within the context of a group comparison research. Further studies using norm-referenced measures are needed. Fourth, the child to adult ratio for the self-contained and inclusive settings differed slightly. Not only were there more children per adult in the inclusive class also had larger group sizes (15 students compared to 10). Such differences could result in inequalities in the amount of direct, individualized instruction delivered.

In conclusion, the current study generally found no real significant findings to support special education students to gain developmentally more in inclusive classes than those in self-contained classes. The developmental/educational outcomes did not vary by settings. However, the challenge for both research and practice will be to focus on the

quality of instruction to determine what degree special education students benefit from

being educated with their non-disabled peers.

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Appendixes

Appendix A

Table A1

Sample of Students

	Gender	Age	Year in Special Ed.	Disability	Family Background
1. A	Male	4	2	ADHD	Middle child with parents
2. B	Female	4	2	Global Delays	Only child with Mom
3. C	Male	4	2	ADHA, ODD	Only child with Grand mom
4. D	Male	4	2	Global Delays	Oldest child with parents
5. E	Male	4	1	Global Delays	Youngest child adopted with parents
6. F	Male	4	2	Global Delays	Youngest child with Mom
7. G	Male	4	2	Global Delays	Twin with parents
8. H	Male	4	2	Global Delays	Oldest child adopted by foster parents
9. I	Female	4	2	Global Delays	Twin with parents
10. J	Male	4	2	Global Delays	Oldest with parents
11. K	Male	4	2	Global Delays	Oldest with parents
12. L	Female	4	3	Global Delays	Youngest of three with Mom
13. M	Male	4	2	Global Delays	Youngest of three with both parents
14. N	Male	4	1	Downs	Only child with Mom
15. O	Male	4	1	Global Delays	Foster child

	Gender	Age	Year in Special Ed.	Disability	Family Background
16. P	Male	4	1	Global Delays	Middle child with Mom
17. Q	Male	4	1	Global Delays	Foster child
18. R	Male	4	1	Global Delays	Oldest with parents
19. S	Male	4	2	Global Delays	One of three foster children
20. T	Male	4	2	Global Delays	Oldest with foster parents
21. U	Male	4	1	Global Delays	Middle with mom

Appendix B

Figure B1. Class schedules.

Inclusive Class Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Free play	Free play	Free play	Free play	Free play
Computers	Circle	Occupational Therapy	Circle	Circle
Circle	Centers	Circle	Gym	Centers
Centers	Art	Centers	Centers	Story-time
Story-time	Snack	Snack	Snack	Snack
Snack	Speech		Speech	

Self-Contained Class Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
Oral Motor/ Speech	Physical Therapy	Work-basket	Oral Motor/ Speech	Work-basket
Occupational Therapy	Work-basket	Free play	Free play	Free play
Free play	Free play	Circle	Circle	Circle
Circle	Groups	Groups	Groups	Groups
Snack	Snack	Snack	Snack	Snack
Story-time	Playground	Playground	Story-time	Playground