

The Costs of Inclusive and Traditional Special Education Preschool Services¹

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- Increasing the inclusion of young children with disabilities with typically developing children sometimes faces barriers to adoption and implementation. One barrier identified by administrators relates to cost.
- This paper examines the costs of different models of inclusion and traditional special education preschool programs in five local education agencies in five states.
- Results show somewhat lower costs associated with more inclusive models as compared to traditional forms of special education provision on both an annual and per hour basis.
- Data on who bears the cost show that for school districts, inclusion is less costly than traditional models.

A primary policy shift in early childhood special education during the last decade has been increased inclusive preschool, where educational services for young children with disabilities are provided in settings with typically developing children. As programs have attempted to make this shift to a new form of service delivery, they sometimes encounter barriers. Administrators identify the cost of inclusive programs as one such obstacle (Janko & Porter, 1997). This article presents preschool special education instructional cost estimates from

¹ An initial analysis of the cost data presented in this paper was reported in Odom et al. (in press). The research described herein was supported by Grant No. Ho24K960001 (the Early Childhood Research Institute on Inclusion) from the Office of Special

a small sample of inclusive programs and their more segregated counterparts, traditional special education programs, in five states.

Special education services for young children can be divided into two primary types of settings: traditional and inclusive. The traditional setting is one in which students with disabilities attend special education classes containing only other students with disabilities. In inclusive settings, students with disabilities are placed in classes with typically developing children.

The impetus for shifting policy toward the provision of more inclusive options for children came from professionals (Strain, 1990; Guralnick, 1990), parents (Miller, Strain, Boyd, Hunsicker, & Wu, 1992), and professional organizations (Division for Early Childhood, 1993). Although the initial impetus was for inclusive services for school-age children, in the last decade these principles have been applied to preschool programs. In 1997, the reauthorized Individuals with Disabilities Education Act (PL 105-17) specified that early intervention programs for infants and toddlers and their families are to be provided to the maximum extent appropriate in “natural environments.” For some children, these natural and least restrictive environments are inclusive childcare settings. For some school administrators, providing inclusive services for young children with disabilities through the school district is complicated because preschool programs for 3- to 5-year old children who are typically developing may not be offered in public schools. In those cases, administrators and program developers have had to search for early childhood programs in the community into which children with disabilities might be included. If classes for typically developing children were present within the school district, then

Education Programs, U.S. Department of Education. However, it is not asserted that the findings presented in this paper can be generalized to the nation or that the views expressed in this paper reflect federal policy.

administrators had to establish new intra-system relationships and arrangements to place children with disabilities in those classrooms.

For many school districts, inclusion at the preschool level is, or has been, an innovation (Fullan, 1991). As an innovation, it faces barriers to implementation. A common concern voiced by some administrators is the cost of inclusion as compared with the type of service currently being provided (Janko & Porter, 1997). Administrators often do not know if inclusion is more costly than the current form of service. A review of the literature indicates that some studies examined costs in early childhood special education programs (Escobar, Barnett, & Goetze, 1994; Barnett & Pezzino, 1987) and other studies examined costs of inclusive programs for older children (Halvorsen, Neary, Hunt, & Piuma, 1996; Salisbury & Chambers, 1994). However, there are currently no published studies on the cost of inclusive services for preschool children. Without this information, it is difficult for school administrators to fully consider changing their current form of service delivery to one that is more inclusive.

This study addressed the following questions:

1. How much does preschool special education cost overall (traditional and inclusion)?
2. How much does preschool inclusion cost?
3. Do inclusive preschool programs cost more than traditional special education programs?
4. Who bears the cost under the various models of serving preschool special education students?

Methods

Five sites, each in different states, participated in the study. Inclusion was defined as classrooms in which children with disabilities and typically developing children participate

together for over 90% of the time. Inclusion of preschool children with disabilities with typically developing children occurs in different organizational contexts and with different service configurations (Odom et al., 1999). For this study, inclusion programs were categorized into three models for utilizing or extending existing early childhood education services. The three preschool inclusion alternatives included in this study are as follows:

- Public school—state funded programs for children at risk for learning difficulties, preschool classrooms for which parents pay tuition for their typically developing children
- Community-based—public or private childcare and preschool programs operating outside the public schools
- Head Start—with the Head Start contract held by a community agency

Inclusive programs also vary in the way educational services are configured or provided. Services include itinerant teaching or related services provision (i.e., a professional visits the inclusive program to provide either direct service to the child or consult with the teacher), team teaching (i.e., a special education and early childhood teacher co-teach the inclusive class), early childhood education (ECE) (i.e., only an early childhood teacher teaches the class), and early childhood special education (ECSE) (i.e., an early childhood special education teacher is the lead teacher).

Each model in this study had a variety of service delivery configurations, but in general the public school inclusion classes had either team teachers or an ECSE teacher. The community-based and Head Start programs employed ECE teachers, with supplemental itinerant, ECSE, or team teachers provided by the school district. In addition, all students received related services from the school district or other public agency.²

² More details about individual programs may be found in Odom et al. (in press).

Data were obtained from teachers and children in the inclusion models and the traditional, segregated counterparts from each site. Selection of individual children occurred in a stepwise manner. Because children with more severe disabilities are more likely to be placed in traditional special education classrooms (Buisse, Bailey, Smith, & Simeonsson, 1994), children from traditional classes with less significant developmental delays and disabilities were selected first. Then, using the profiles of these children, children who were similar in age, sex, and disability from the inclusive programs were selected. All children were between 3 and 6 years of age, with the mean age of 4.8 years. 70% of the children were boys.

Analysis

This study employed an “ingredients” or resource-based approach (Levin, 1983; Levin and McEwan, 2000; Chambers & Parrish, 1994) to obtain estimates of instructional costs for children with disabilities. To perform the cost analysis, detailed information about the specific services that students receive was collected from teachers. Student data required for the analysis included the types of services received, the amount of time they receive those services from teachers, related service providers, instructional assistants, and other types of staff; the number of students who also receive these services at the same time (group or class size); and the providing agency. Data were also obtained from service providers on how they spend their workday (direct instruction as opposed to instructional preparation/administration and travel), their annual salary or hourly wage, and the number of hours they work per year. An institutional level survey was administered to obtain information on employee benefits. These data elements were combined to provide cost estimates of specific educational programs or services as they are actually provided to individual students.

To make these cost estimates comparable, standard salary and benefit amounts were used. That is, salary and benefits are averaged across the states by job category before they are used to derive costs for instructional services. In this way, cost differences due to geographic location and teacher tenure are eliminated so that they do not confound the results.

The cost estimates reported in this article only include direct services. They include direct instruction, instructional preparation, associated clerical or administrative activities, service-related travel time of teachers and related service providers, service from instructional or administrative assistants in the classroom, and any other type of direct educational or social service a student may receive. These estimates also include costs associated with specific benefits that employees receive as part of their compensation package such as health, retirement, unemployment, staff development, vacation, holiday, sick leave, and childcare. They do not include administrative costs of principals, district administrators, community-based preschool directors, or other such administrative positions, nor the cost of building space, utilities, building maintenance, transportation of students, transportation of itinerant teachers (in terms of mileage reimbursement), or specialized equipment.³

As these cost estimates represent only the instructional portion of the program, they should not be interpreted to represent the full cost of any of the programs included in this analysis. Rather, these cost estimates illustrate the relative instructional costs among different models of inclusion and more traditional approaches to providing special education to preschool children.

³ Although these costs are germane and would clearly inform a study of this type, capturing them was beyond what was possible within the scope of this work. Their omission is a limitation of this study.

Funding for the education of special education students comes from multiple sources. For this reason, cost estimates are also separated to show the cost to the school district, the cost to other public agencies, and the cost to the parents of children in these programs. For example, both Head Start and the school district might provide funds for a team teaching form of inclusion, or the district may pay for itinerant teachers and other service providers to visit children in community-based settings. Who pays for what service has important policy implications. It may respond more directly to concerns of school district administrators about the cost of inclusive services to the public school. In addition, if one approach as currently implemented relies more heavily on financial support from the parents of special education students, important questions arise regarding students' right to a free and appropriate public education, as required by federal law.

Findings

All cost estimates presented in this article are annual costs for instructional services per student (unless otherwise noted). The findings are presented in three tables. Table 1 shows overall costs of preschool special education and costs by disability, regardless of whether the student was in an inclusive or traditional setting. Table 2 shows costs by inclusion versus traditional settings. Costs are also shown for the three inclusive models implemented by various public or private entities. Table 3 shows cost estimates for each of the five states in the analysis.

Table 1 shows a cost estimate for preschool special education instruction of \$3,847 per student for inclusive and traditional settings combined. Cost estimates by disability range from \$2,220 to \$6,691. Although the number of students on which the cost estimates by disability are based is small and should be viewed with caution, it is of potential interest due the relative paucity of data for this age group.

Table 1: Preschool Special Education Instructional Expenditures by Disability

	Number of Students	Annual Total Instructional Cost Per Student
Overall	106	\$3,847
Disability Category		
Learning Disability	7	\$3,823
Speech/Language Impairment	27	\$2,642
Mild/Moderate Mental Retardation	12	\$3,475
Physical/Orthopedic Impairment	10	\$4,813
Other Health Impairment	5	\$5,842
Autism	7	\$4,634
Developmentally Delayed	32	\$4,249
Other Low Cost Disabilities*	4	\$2,220
Other High Cost Disabilities*	2	\$6,691

* Children in disability categories for which N<5 were put into the categories of "Other Low Cost Disabilities" and "Other High Cost Disabilities" according to the cost estimates derived from this study. Low cost disabilities for this sample of children includes profound/moderate mental retardation, emotional disturbance, multiple disabilities, and traumatic brain injury. High cost disabilities includes visual impairment/blindness, and hearing impairment.

As these cost estimates only include direct services rather than all associated costs (e.g., administration, transportation), they may be most useful when seen on a comparative basis. Table 2 shows the cost of inclusion versus more traditional models of service delivery, and also allows a comparison of the three types of inclusion models: public school, community-based, and Head Start. The last row of the table shows the percentage differential between the inclusion and traditional models. The columns of Table 2 allow a comparison of the costs to various public and private entities; levels of service in terms of hours of service per week and weeks per year; and costs per hour of service.

Table 2: Preschool Special Education Instructional Expenditures in Inclusion and Traditional Settings

	Number of Students	Annual Total Instructional Cost Per Student					Hours per Week of Service	Weeks per Year of Service	Total Instructional Cost Per Hour Per Student ²	School District	Other Public Agency	Parents
		Total Cost ¹	Cost to School District	Cost to Other Public Agencies	Cost to Parents	Cost to School District & Parents						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)			
Overall	106	\$3,847	\$2,921	\$238	\$664	\$3,585	18.0	35.7	\$5.99	76%	6%	17%
Inclusion	59	\$3,649	\$2,311	\$322	\$1,001	\$3,312	17.8	35.6	\$5.77	63%	9%	27%
Public school-based inclusion class	10	\$2,415	\$2,415	\$0	\$0	\$2,415	12.5	36.0	\$5.37	100%	0%	0%
Community-based preschool inclusion	37	\$3,893	\$2,346	\$143	\$1,379	\$3,725	19.1	35.7	\$5.71	60%	4%	35%
Head Start inclusion class	12	\$3,928	\$2,114	\$1,142	\$672	\$2,786	18.0	35.1	\$6.23	54%	29%	17%
Traditional	47	\$4,096	\$3,688	\$133	\$240	\$3,928	18.3	35.7	\$6.28	90%	3%	6%
Inclusion Percentage Difference		-11%	-37%	142%	317%	-16%	-3%	<1%	-8%			

¹ Columns (c), (d), and (e) do not necessarily sum to the total cost (column b) as services paid to unknown entities is not presented in this table because it only ranges from 0% to 1% of the total instructional cost.

² Costs per hour are derived by dividing the annual cost by the number of hours of service per year.

As shown in column 2, the average instructional cost across the three types of inclusion programs is \$3,649, which is 11% less than the traditional model at \$4,096. All three forms of inclusion (public school-based, community-based, and Head Start) have lower annual costs than the traditional model (\$2,415, \$3,893, and \$3,928, respectively, versus \$4,096). Public school-based inclusion appears to be substantially lower cost than community-based and Head Start inclusion (\$2,415 versus \$3,893 and \$3,928, respectively), and is 41% less than the traditional, more segregated, special education classroom model.

Although it is useful to present costs per student on an annual basis, particularly to school administrators who work with budgets, annual cost estimates may conceal differences that stem from variations in service levels. Columns 7 and 8 show the length of service for the various models. Inclusion students receive slightly fewer hours of services per week (17.8 versus 18.3 hours), and the public school inclusion students receive substantially fewer hours of service, at only 12.5 hours per week. To account for the varying levels of service (in terms of hours of service per year), the cost per hour is presented in column 9 of Table 2. Total instructional costs per hour are 8% lower for inclusion than for the traditional model (\$5.77 versus \$6.28). Public school-based inclusion is the least costly at \$5.37 per hour, while the Head Start program is the most expensive of the three inclusion models, similar in cost to the traditional model (\$6.23 versus \$6.28).

As funding for preschool special education comes from a variety of public and private sources, another interesting comparison is who pays for these services. Columns 3 through 6 of Table 2 show costs to various entities: school district, other public agencies, parents, and the cost to the school and parents combined. The average cost to the school district for inclusive and

traditional preschool special education services combined is \$2,921 (column 3). Inclusion costs are 37% lower than traditional costs (\$2,311 versus \$3,688). The three forms of inclusion show roughly the same cost to the school district. As shown in columns 4 and 5, the major difference among the inclusion models is not in total cost, but in who pays. In the Head Start inclusion model, other social services account for approximately 30% of the total instructional cost (\$1,142/\$3,928), and the parent picks up about 17% of the cost (\$672/\$3,928). In community-based programs, the parent contributes about 35% (\$1,379/\$3,893), which is usually in the form of tuition services for childcare.

Other public agencies pay about 2.5 times more per student served in inclusive settings than those served in traditional models (\$322 versus \$133, column 4). Most of this cost is attributable to the Head Start program, which is federally funded through local public agencies. Parents of inclusion students pay over four times as much as parents with children in traditional models (\$1,001 versus \$240, column 5), most of which is due to preschool tuition paid by parents in community-based preschool inclusion models. Comparing the annual costs to the school district and parent (column 6, which is the sum of columns 3 and 5), inclusion is still 16% less than the traditional model (\$3,312 versus \$3,928).

In addition to presenting data overall, the major categories of cost are shown by state. Table 3 presents state-by-state results for the categories of annual total cost, annual cost to the school district, and cost per hour. These cost estimates are presented for inclusion and traditional settings combined and separately to compare inclusion versus traditional within each state. Individual state cost estimates show that the traditional and inclusion total annual costs across the sites range from \$1,881 in State E to \$5,743 in State C.

Table 3: Findings of Preschool Special Education Instructional Costs, by State¹

	Overall	State A	State B	State C	State D	State E
Total Annual Cost						
Overall	\$3,847	\$3,983	\$2,401	\$5,743	\$4,107	\$1,881
Inclusion	\$3,649	\$4,038	\$2,415	\$4,774	\$4,308	\$1,707
Self-contained	\$4,096	\$3,898	\$2,385	\$6,713	\$3,894	\$2,228
Annual Cost to School District						
Overall	\$2,921	\$2,332	\$2,401	\$3,636	\$2,332	\$1,671
Inclusion	\$2,311	\$1,801	\$2,415	\$1,453	\$1,801	\$1,594
Self-contained	\$3,688	\$3,158	\$2,385	\$5,819	\$3,158	\$1,824
Cost per Hour						
Overall	\$5.99	\$6.38	\$4.89	\$5.88	\$6.71	\$4.51
Inclusion	\$5.77	\$5.94	\$5.37	\$5.74	\$6.34	\$4.04
Self-contained	\$6.28	\$7.49	\$4.41	\$5.98	\$7.20	\$5.50

¹ Sites for the study were located in California, Maryland, North Carolina, Tennessee, and Washington. Three states are not shown in respect to the columns above, however, because the purpose of this table is to show that state of origin seems to matter in respect to cost, rather than to suggest that the numbers shown here are representative of these states.

Although the overall results suggest that inclusion costs less than more traditional services, in terms of total annual costs this pattern only holds in two of the five states. However, in terms of cost to the public schools and overall cost per hour of service, inclusion still appears less costly than the more traditional, self-contained classroom model of service provided in four of the five states.

Discussion and Policy Implications

A study of this size can only suggest answers to important policy questions and identify areas for future research. The question “How much does preschool special education cost?” can be answered by a range of cost estimates that vary by type of disability. Costs also vary based on

the type of service the IEP team recommends, the types of services available in the school district, and whether these services are inclusive or more traditional.

“How much does inclusion cost?” does not have a simple answer. Costs range widely across models in this study from \$2,415 for the community-based model to \$3,928 for the Head Start model. Costs also vary considerably by state, even when hourly compensation is held constant. Overall, community-based programs appear less expensive than the Head Start and public school programs.

However, the public school model has the advantage of having certified teachers serving as lead teachers (i.e., in community-based programs the lead teachers often do not have special education or other public school licensure). In addition, the public school model supports a greater potential for collaboration in planning curriculum where both teachers are in the class the entire time compared to community-based programs where an itinerant teacher visits the class for a shorter period of time each week.

The potential for collaboration between public school and Head Start programs to provide inclusive programs for children with disabilities is also great. Head Start has a mandate to enroll children with disabilities in their programs, and it offers a developmentally appropriate curriculum for children who are typically developing but potentially “at-risk.”

From an education policy maker’s perspective, the most salient question may be “How much does inclusion cost school districts?” Here, the answer is different. Estimates of the cost to schools are lower than for the traditional model and are fairly equivalent across the three different inclusion models.

The cost to the school district for community-based programs can vary dramatically depending on who pays the tuition for the preschool setting. In one state, for example, the

district paid the tuition, while in the other states the parents were responsible for tuition. In addition, the majority of the cost to the parents in the community-based programs is tuition, and the cost estimates presented in Table 2 (\$1,379) underestimate the full fee that parents actually pay. Also note that this tuition estimate is averaged across all community-based programs and some tuition values of \$0 may be included when the school district pays the tuition. This has the effect of bringing the average down and may not fully reflect what parents actually pay. Most of the tuition fees that the districts reported paying ranged from \$2,500 to \$4,000.

Childcare tuition is a significant cost of inclusion, and policies in some states allow school districts to pay for the childcare expenses for an educationally relevant part of the day. Other states prohibit this practice, and this portion is paid by the parents or through other agencies.

In their study of preschool inclusion, Cavallaro, Ballard-Rosa, and Lynch (1999) found that parents of children with disabilities were assuming the tuition costs in community-based inclusive programs. One might question whether parents should be required to pay this extra cost for their child's education, given that the federal law ensures a free appropriate public education (FAPE) for children with disabilities and the community-based option is the school system's version of FAPE.

Although no definitive policy recommendations can come from a study of this size, these findings seem to point the way to a policy solution with potential benefits for multiple parties. Federal law requires that early intervention programs for infants and toddlers age zero to three and their families be provided to the maximum extent appropriate in "natural environments." At the same time, Head Start, a strong example of a "natural environment," has a mandate to enroll children with disabilities. Matching these two sets of requirements seems to pave the way to

serving more special education preschool children in inclusive environments. For children for whom Head Start is not available or convenient, other community-based options also appear quite feasible from a cost perspective.

If these more inclusive settings are the most appropriate for children, as the law implies will often be the case, they should be provided regardless of cost (as is also required by federal law). The data in this paper, however, suggest that inclusive services do not incur greater cost. The total cost of the more inclusionary models appears to be approximately the same as the cost of more traditional approaches, with the costs borne by school districts being considerably less. To the extent that other public agencies bear these costs, it is within their mandate to provide such services.

The most troubling aspects among these findings are the costs borne by parents and that these costs appear higher under the more inclusive models. Under requirements that children with disabilities receive a free and public education, it seems that parents should not have to pay for the educationally relevant component of the child's time in these natural settings. At the same time, it seems reasonable that they be responsible for childcare that extends beyond this amount of time. The cost scenarios presented in this paper suggest that school districts could subsidize the component of childcare tuition that is educationally relevant and still provide services in natural settings that are no more costly than more traditional modes of service provision.

Suggestions for Future Research

Although the federal law requires school districts to provide a free appropriate public education to preschool children with disabilities, the willingness of key administrators to embrace inclusion as a needed innovation exerts a strong influence over its ultimate success as a standard practice (Leiber, et al., in press). Little was known about the relative cost of these

programs, and the absence of cost information was one barrier to active adoption of preschool inclusion as an innovative mode of service delivery. Although this study indicates that, in general, inclusion costs less than traditional special education programs, it is just one step in the direction of fully understanding the cost of preschool inclusion. Additional research may increase knowledge and understanding of the benefits and drawbacks of preschool inclusion and facilitate thoughtful approaches to the adoption of inclusive models of service delivery.

The cost estimates of this study only account for the instructional portion of the cost. While instructional costs make up the majority of the total costs, more expansive future cost studies of preschool inclusion should attempt to also incorporate noninstructional costs. Although it is difficult to obtain such information, particularly in the area of transportation, it would allow for complete estimates of the full cost of providing inclusive preschool services. Transportation is often a large portion of a school district's special education budget and would be greatly affected by changes in the locations in which children are being served.

Perhaps more importantly, children in different model classrooms may have had different levels of instructional needs. As noted, the trend in special education has been to place the children with less severe disabilities in inclusive classrooms, and this study attempted to provide some control for these differences through the purposive sampling of children. From these data, it appears that the children in the traditional programs did have greater instructional needs. Future analyses should determine how instructional needs relate to cost.

Future research should also address the relationship of cost to quality of programs and, in turn, their relationship to outcomes. In the programs in this study, the parents and an IEP team had agreed on the type of program appropriate for individual children. However, a series of questions exist about the quality of classroom environments that occurs in inclusive and

traditional programs (Bailey, McWilliam, Buysse, & Wesley, 1998), and the effects of quality on outcomes for children and families. Overall, we need a much better understanding of the relative costs of the respective outcomes associated with different modes of providing special education services. This study has made a small contribution toward this end, but a vast amount of work remains.

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