



An Outcomes-Based Approach to Evaluating Preschool Services and Costs in Wyoming

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Table of Contents

	Page
Acknowledgments	v
Introduction	1
Objectives	1
Sample.....	1
Methods.....	2
Value of This Study	2
 A New Funding Model for Wyoming Preschool Services for Children with Developmental Disabilities and Their Families	 4
Proposed Funding Model Varies Expenditures with Individual Child and Family Needs	 5
IDEA Reauthorization Requires High-Quality Staff	5
Two Key Wyoming Expenditure Study Findings.....	6
The Proposed Three-Tiered Funding Model.....	9
Estimating the Additional Cost of the Three-Tiered Model to the State of Wyoming. Current Funds for DD Preschool	11 12
Wide Variations in Local Funds to Support DD Preschool Services Exist	13
Variations in the Cost of Delivering Services: Some Rural Issues.....	14
Projecting Personnel Salary Costs	15
Step 1: Estimating FY 2005 Cost of Preschool Personnel Salaries Benefits.....	16
Step 2: Estimating the Costs of Preschool Personnel Using Competitive Salary Schedules	 19
Step 3: Estimating the Difference in Salary Costs for Dedicated and Blended Preschool Personnel.....	 20
Step 4: Estimating the Difference in Preschool Personnel Benefit Costs.....	20
Step 5: Estimating the Total Difference in the Cost of Salaries and Benefits	21
Step 6: Estimating the Difference in Cost for Contract Labor, Professional Development, Travel, and Transportation	 22
The “1 before 2” Screening Funds.....	23
The Cost of Hiring Additional Professional Staff.....	25
The Projected Costs of Tier 3 Funding for Capital Facilities	27
Summary and Recommendations	30
 Preschool Benefits	 31
Cost of Personnel Turnover is Reduced.....	31
Funding Model Increases Labor Market Equilibrium	32
Preschool Services Reduce the Need for Later Special Education Services	33
Quality Facilities Reap Benefits for Children.....	34



	Page
What are the Characteristics of the Wyoming Preschool Providers?	35
What are the Caseload Sizes for Providers	36
To What Extent are Wyoming Preschool Providers Satisfied With Their Jobs	37
What Were the Characteristics of Providers for Each of the Regions?	38
How Do Providers View the Program’s Ability to Involve Families and Meet Their Needs?	39
Recommendations	40
What Are the Characteristics of the Children and Families Enrolled in the Wyoming Preschool Evaluation?	41
What Were the Characteristics of Families Enrolled From Each of the Regions?	42
What Was the Impact of the Wyoming Preschool Program on Family Well Being?...	43
What Were the Family Well-Being Outcomes for Each Region?	45
How Does the Wyoming Preschool Program Impact Child Development Outcomes?	46
What Data Were Used to Measure Child Development?	46
What Were the Changes in Child Development?	47
What Factors Effect Child Developmental Progress?	48
Time Spent in Direct Services	49
Recommendations	50
What Are the Contextual Characteristics that Influence the Regional Wyoming Preschool Programs?	51
What Are the Socio-Demographic Characteristics of the Regions?	51
How Do These Socio-Demographic Characteristics Influence the Provision of Services?	51
What Were the Strengths and Challenges of the Regional Context?	52
Recommendations	53
Evaluation Summary of Overall Recommendations	54
Cost Analysis and Funding Recommendations	54
Findings and Recommendations Pertaining to Wyoming Preschool Providers	56
Findings and Recommendations Pertaining to Child and Family Outcomes	56
Findings and Recommendations Pertaining to the State and Regional Context	57
References	55



Appendices

- Appendix A: Protocols/Evaluation Tools
- Appendix B: Provider and Cost Results by Region
- Appendix C: Family Demographic Characteristics
- Appendix D: Family Survey Results by Region
- Appendix E: Socio-Demographic Characteristics by Region
- Appendix F: Literature Review and Best Practices



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An Outcomes-Based Approach to Evaluating Preschool Services and Costs in Wyoming

Introduction

The goal of this study was to identify the resource allocations and service strategies that best support *service system efficiency and child and family outcomes*. The proposed study is unique in that it investigated current Wyoming Preschool service models particularly in terms of child and family outcomes as well as costs associated with different models.

Objectives

The objectives of the proposed study are listed below.

Objective 1: Propose a fiscally sound finance model to ensure the sustainability of a high-quality Wyoming Preschool Program.

Objective 2: Describe the community characteristics, system characteristics, and service provider characteristics influencing the implementation of preschool services in Wyoming.

Objective 3: Describe the system outcomes and direct service outcomes associated with the preschool service variations identified in the 15 regions of the state.

Objective 4: Describe the child and family outcomes associated with the models in place in the 14 regions of Wyoming.

Objective 5: Combining the results from Wyoming with a comprehensive review of the existing empirical and theoretical literature, describe the critical variables influencing the system outcomes, direct service outcomes, and child/family outcomes.

Sample

Costs, services and outcomes were evaluated, with data collected from key stakeholders in the 14 service delivery regions in Wyoming. Approximately 540 families with children enrolled in the Wyoming Developmental Disabilities (DD) Preschool Program participated in the study. The number of families who consented to participate in the study was 540, and 499



families returned surveys. There were 265 provider surveys that were returned. Throughout the report there are fluctuations in the number of families and providers who responded to various questions on the surveys and this is because not all families and providers answered every question in each of the surveys.

Methods

This study used a combined methodology approach to examine the capacity of different regions in order to achieve the study objectives. First, we assessed the **state and regional context** in which preschool services have evolved throughout the state. Next, we developed in-depth descriptions of the **services** in each region and the **cost and funding sources** for those services. Across-region comparisons were made to discern differences, including costs, based on the service delivery model, funding sources, rural-urban differences, etc. Finally, **family outcomes** within each region were examined focusing on those outcomes derived from the above examples, including (1) family's satisfaction with the services received based on child's level of functioning; (2) their perceived needs; and (3) the degree to which the services fit with the family's life. **Child outcomes** were measured based on extant developmental assessment data collected by the programs. Detailed descriptions of personnel were the foundation for the cost analysis and the development of the proposed funding model. In addition, data related to the cost of non-personnel resources - in particular, facilities costs and the current preschool funding - to support preschool services was collected and analyzed. Finally, cost and funding data were used to develop a new three-tiered funding model and project cost of implementing that model. Evaluation protocols used in the study are provided in Appendix A.

Value of this Study

Results from this study reveal strengths and challenges of the Wyoming Preschool



Program. This study demonstrates the positive child and family outcomes being achieved, and it offers recommendations for system improvements. Of particular importance are recommended funding formulas to ensure that the Wyoming Preschool Program continues to grow in its capacity to serve children and families through high-quality service provision.



A New Funding Model for Wyoming Preschool Services for Children with Developmental Disabilities and Their Families

Since the passage of the Education for All Handicapped Children Act in 1975, states have gradually improved and expanded services for young children with disabilities. The main federal program regulating these services is the Individuals with Disabilities Education Act (IDEA), which has been revised and amended several times since its initial approval. Most recently, President Bush signed the Individuals with Disabilities Education Improvement Act into law in December of 2004. Since most new provisions of this Act go into effect in July of 2005, states are currently in the process of formulating new approaches to several aspects of service delivery for preschoolers, infants and toddlers with disabilities. The recommendations contained in this report are based on the preschool service system strengths and challenges that emerged from the 12-month Wyoming preschool cost and outcomes study combined with best practices identified from an extensive literature review of best practices in early childhood special education.

For purposes of this study it is important to distinguish between Part C and Part B of IDEA. Part C governs those children age birth to 3 with disabilities and their families while Part B governs those children age 3 to 21 with disabilities and their families. Within Part B, section 619 addresses the specific issues for children age 3 to 5 with disabilities. The recommendations of this report apply to those children with disabilities and their families, age birth to 5, who are covered under Part C and Part B section 619 of IDEA. In Wyoming the children who are governed by Part C and section 619 of Part B are typically referred to as Preschool children and are served through the Developmental Disabilities Division of the Department of Health which contracts with 14 regional programs to provide DD preschool services throughout the state.



Proposed Funding Model Varies Expenditures based on Individual Child and Family Needs

IDEA requires that services for children age birth to 3 be developed as part of an individualized family service plan (IFSP) and for children age 3 to 5 that they be developed as part of an individualized education plan (IEP). The IFSP and IEP are central to the purpose of IDEA in that they are designed to insure that services are individualized based on individual needs of the child and family. If services are to be truly individualized then funding must be flexible and vary with the individual needs and services of the child and family as well. The Three-Tiered funding formula proposed for the Wyoming preschool program is designed to meet that challenge by providing funding that varies with child and family need for services. In contrast, the current flat grant preschool formula funds the same amount per child regardless of need (\$5,194 per child in FY05), and does not incorporate the flexibility to meet individual service needs. It is also problematic in that it does not address the issue of very high-cost disability conditions, such as children with severe autism or complex medical conditions. Under the flat grant formula, funding for all children is the same regardless of cost, services, or severity of disability. Under the new proposed three-tiered funding model, non-facilities cost of services for children with disabilities and their families are reimbursed 100% and the local DD programs will continue to absorb the costs of serving children without disabilities and their families.

IDEA Reauthorization Requires Highly-Qualified Staff

IDEA contains an extensive definition of “highly qualified” teachers, and explicitly requires that all special education teachers be highly qualified. Under this new definition, teacher requirements differ depending on child age and severity of disability, as well as teacher experience and whether or not one or more core academic subjects are taught. General requirements that apply to all special education teachers include completion of a BA and full



state special education certification or equivalent licensure. Teachers who hold an emergency or temporary certificate do not meet the definition of highly qualified contained in this legislation.

Two Key Wyoming Expenditure Study Findings

The proposed three-tiered preschool funding formula is also designed to address two very specific findings from our study. The first finding is that there is a large discrepancy between the salaries and benefits paid to preschool service providers—special education teachers, physical, occupational, and speech and language therapists compared with comparable providers who are employed by the school districts, hospitals, and other health care providers throughout the state of Wyoming. As shown in Table 1, staff employed by K-12 special education programs throughout Wyoming earned, on average, 10-40% more in wages and benefits than preschool staff with comparable certifications. The preschool salary and benefit data were collected from all 14 regional programs throughout the state of Wyoming over the past year and are for Fiscal Year 2005 (FY 05). The K-12 salaries and benefits were taken from the Wyoming Department of Education Special Education Expenditure Report Fiscal Year 2004 (FY 04). The Wyoming Special Education Expenditure report showed increases in expenditures averaging approximately 4% during each of the two previous fiscal years. In order to make the salaries comparable for FY 05, the K-12 special education salaries were increased by 4%. These data show significantly higher salaries for all four professions who are employed by the school districts. School districts pay between \$4,700 (for special education teachers) and \$15,000- \$17,000 (for therapists) more per year for personnel with the same certifications. While these comparisons do not take into account differences in the years of experience of individual staff since those data were not available in the K-12 special education report, there is no reason to expect that the years of experience for these two groups would be different.



Table 1

Differences between Preschool and K-12 Salary & Benefits for Related Services Personnel for FY05

Related services personnel	Mean preschool program salary and benefit	Mean K-12 special education salary and benefit	Difference
Physical Therapy	\$47,921	\$65,347	\$17,426
Occupational Therapy	\$43,665	\$59,734	\$16,069
Speech/Language Therapy	\$43,995	\$59,207	\$15,212
Special Education Teacher	\$48,191	\$52,970	\$4,779

The best practices literature review identified personnel qualifications, degrees and certifications, as critical components of high quality early childhood programs (Barnett, 2003; Bowman, Donovan, & Burns, 2001), and other work has found that certified teachers outperformed those with emergency provisional licensure—a strategy sometimes used when programs are unable to recruit teachers with full certification.

The best practices literature and IDEA highlight the importance of having highly qualified staff to provide services to young children who qualify for special education services. The Wyoming Preschool cost study of salaries and benefits illustrates the challenges that programs are having in achieving the intent of IDEA and implementing best practices. As shown in Table 2, the DD preschool programs reported that they often have vacancies for positions for between 1 and 2 years or even longer, especially for speech and language therapists. The DD preschool staff was asked about the reasons why positions go unfilled and their responses are summarized in Table 3. Insufficient applicants, inadequate pay, inadequate benefits, and applicants who accepted a job elsewhere were frequent reasons why the position was not filled.

A second major challenge identified by this study is a shortage of facilities to promote safe and healthy teaching and learning for preschool children that are served throughout the state of Wyoming. There are wide variations in age, square footage available per child, and quality of the facilities as shown in the Table in Appendix B used to house preschool programs.



Facilities descriptions obtained from the DD programs throughout Wyoming show that preschool children with developmental disabilities tend to have about 50 square feet per child while the Wyoming Public Schools Facilities Guidelines recommend 146 square feet per child for facilities for K-12. DFS recommends 15 additional square feet per child for infants due to the large space requirements for cribs. The literature over the past 30 years shows a strong relationship between the physical characteristics of school buildings and child educational outcomes (Lackney, 1999).

Table 2

Length of Time to Recruit New Personnel by Position

Position	< 1 month	> 2 months	1-2 Years	unfilled
Regular education head teacher	3	3	0	0
Regular education teacher	4	4	0	2
Special education head teacher	0	5	1	1
Special education teacher	5	4	2	2
Assistant teacher/aide	21	10	0	0
Administrative director	0	5	0	0
Physical therapist	1	4	3	0
Occupational therapist	1	9	2	1
Speech/language therapist	2	1	6	14
Other				
Clinical social worker/psych	0	0	0	1
PTA	0	1	0	0
Clerical	0	2	0	0

Table 3

Reasons Why Positions Are Vacant for More Than One Month

Response	# responses	%
Not enough adequately trained people applied	10	71
Low responses to advertisements	10	71
The pay was too low	5	36
Offered positions to candidates but they accepted jobs elsewhere	5	36
Problem with location	4	29
Inadequate benefits	4	29
Because of normal administrative procedures or problems	1	7
In-state licensing difficulties	1	7
Case loads too high	1	7



The Proposed Three-Tiered Funding Model

The funding model that is proposed for the state of Wyoming to fund DD preschool programs is a three tiered model as shown in Figure 1. The model is designed to provide funding for 100% of the non-facilities costs of serving preschool children with disabilities. The Tier 1 resources in this model are called “dedicated” because they include resources and costs that are used for children with developmental disabilities only. Examples of dedicated resources include physical therapists and special education teachers. In this new preschool funding model programs would be reimbursed 100% for the Tier 1 dedicated resources that are used by their program. A comprehensive list of dedicated resources is shown in Table 4.

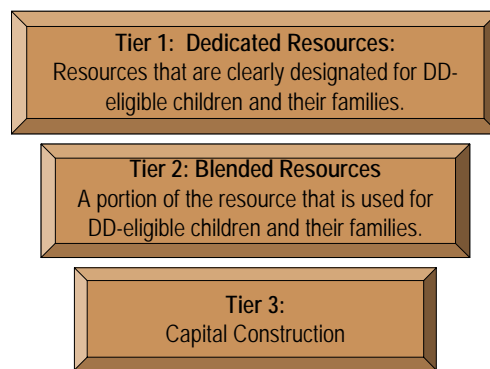


Figure 1: Three-Tier Preschool Finance Model.

Table 4

Tier 1: Dedicated Resources

Part C Resources	Resources for 619 eligible children/families	DD combined resources
<ul style="list-style-type: none"> • Coordinator for Part C-eligible children/families • Family services coordinator • Early intervention service personnel (e.g., home visitor) • Related services personnel • Related services aides • Part C parent support personnel • Benefits for these personnel • Travel reimbursement for DD families • Travel reimbursement for home visits • Professional development • Assistive technology 	<ul style="list-style-type: none"> • Part B/619 coordinator • Related services personnel • Related services aides • One-on-one aides • DD personnel • DD personnel professional development • Professional Development for all DD-related training • Assistive technology • Reimbursement travel to DD families • Transportation • Special education teachers 	<ul style="list-style-type: none"> • DD coordinator • Developmental assessments • Screening and child find



The second tier of the funding model incorporates “blended” resources—those that are used by DD programs to serve children with and without disabilities. A list of blended resources is included in Table 5 and examples include regular education teachers and general classroom aides. The funding model would reimburse programs for blended resources and costs based on the percentage of those resources and costs that are used by children with developmental disabilities and their families. The simplest method to reimburse for blended resources and costs is to reimburse based on the percentage of children with developmental delays out of the total number of children served who use that resource:

$$\text{Blended Resource Reimbursement} = \frac{\text{Total Number of Children w/DD served}}{\text{Total Number of Children Served}} \times \text{Total Cost of the Blended Resources}$$

Table 5

Tier 2: Blended Resources

General center regional support	3-5
<ul style="list-style-type: none"> • Director • Administrative and support staff not dedicated to DD • Secretarial • Janitorial • Maintenance personnel • Fiscal staff • Professional fees/contracts (licenses, fingerprinting, tuition, other professional services) • Professional development (classroom teachers and aides, other staff shared between DD) and non-DD • Transportation (vehicles, fuel, upkeep—mostly DD) • Travel (for staff and others—not much non-DD) • Supplies, postage • Printing, publications (employee recruitment, marketing, and outreach) • Communications (phones, fax, email) • Equipment (purchase, rental, maintenance—over \$5,000) • Technology network (hardware, software, data generation, upkeep) • Insurance • Auditing and legal services • Rent, utilities, maintenance • Miscellaneous 	<ul style="list-style-type: none"> • Classroom Services • Teachers – Regular • General Classroom Aides • Benefits for General Education Classroom Personnel



There are tradeoffs inherent in any funding model. The proposed funding model will require new reporting from programs related to the resources that are used to support DD preschool services. This will require local program staff time and time from the Wyoming Department of Health Developmental Disabilities Division. However, the data to be collected could also provide valuable new descriptive data about program services, staffing patterns, etc that the state and regions can also use for program improvement. Another concern that has been expressed is that programs may decrease the number of preschool children without developmental disabilities that are included since they are omitted from the reimbursement formula. The programs are required by law to provide services that are inclusive and the monitoring process that is in place combined with local program commitments to provide best practices should insure that children with and without disabilities will continue to be served together in inclusive classrooms.

Tier 3 proposes a state grant program to help fund facilities for preschool programs throughout the state. The state would provide 50% of the cost of new facilities for children with disabilities and their families while the DD program would raise the matching 50% from other sources. The DD program matching funds could be from various local or federal funds such as community development block grant funds, county levies, and so forth. State funds could be set aside for this component of the funding formula in one year or over 30 years or somewhere in between. This would greatly enhance the ability of the DD programs to construct new buildings that meet state facilities guidelines while maintaining local entrepreneurship, fund raising and public awareness campaigns in the localities where the individual programs are based.

Estimating the Additional Cost of the Three-Tiered Model to the State of Wyoming

In this section of the report we will estimate the *additional* cost to the state of Wyoming from adopting the proposed funding model. We anticipate that most of the additional cost will



occur for salaries and benefits as preschool staff who serve children with disabilities are reimbursed at amounts that are more comparable to similar personnel employed in the school districts and health sectors throughout the state. The additional non-salary costs—particularly transportation, travel and consultants—are estimated separately since these are costs that disproportionately accrue to DD expenditures (relative to non-DD). Other areas that are evaluated include child screening through the “1 before 2” campaign that has been primarily funded through private grants. Professional development costs are another area where increases are projected. The cost of unfilled professional positions that were reported by the regions is also estimated in this section. Finally, the costs of capital facilities that meet state guidelines for safety and square footage requirements are estimated to determine the cost of implementing the Tier 3 funding model proposal.

Current Funds for DD Preschool

The amount of funding per child for DD preschool services becomes diluted when the funds do not increase to keep up with the growth in enrollment that has occurred in recent years in the Wyoming preschool programs. When funds, such as Part C Federal, Part B 611 and Part B 619 remain constant then the per child funding amount goes down even though program costs to serve those additional children are rising. Currently the state of Wyoming spends \$5,194 per child for DD preschool services. In FY 2005 Part C federal funds averaged \$2,212 per child, Part B 611 funds were an average of \$504.49 per child per year and Part B 619 funds were \$410.23 per child per year (Wyoming Department of Health, Developmental Disabilities Division, State Fiscal Year, 2005). This translates into a total budget of approximately \$17.3 million dollars for 2,676 preschool children during the 2005 fiscal year. This translates into \$6,453 average state and federal per child funding in FY 05. In addition, the DD preschool programs bill Medicaid for



services for children and families who are eligible. For the 10 regions who reported Medicaid revenue, the average per child revenue was approximately \$240 per year.

In contrast, a recent study of a nationally representative sample of children birth to 3 with disabilities who are served under Part C of IDEA and their families known as the National Early Intervention Longitudinal Expenditure Study (2004) found that the average total expenditure for services Part C services was \$916 per month, which translates into \$10,992 per child per year in 2004 dollars. State funds comprised 86% of this total national Part C expenditure or \$9,453 per child.

Wide Variations in Local Funds to Support DD Preschool Services Exist

The regional preschool programs report wide variations in local and county support for DD preschool services ranging from \$0 to \$386,000 annually. The wide variations in local and county funds illustrate the challenges that poor regions of the state have in meeting the IDEA requirements and in competing for qualified staff. Region 13 is one of the richest regions in the state while neighboring Region 3 is one of the poorest in the state. Reliance on local funds to pay for services for children with disabilities results in inequities in service delivery and possible violations of the provisions of IDEA. Services are supposed to be driven by individual child (and family) need not by the amount of funding available. There are instances in other states where families of children with similar needs from different, neighboring counties have met and discovered these inequities and filed formal complaints or even lawsuits against the state. These variations in local resources also highlight the difficulties that some regional programs have in recruiting qualified staff as they compete with other employers in the same or neighboring counties who can pay higher benefits and salaries for the same personnel.



***Variations in the Cost of Delivering Services:
Some Rural Issues***

The proposed funding formula would fully fund the cost of delivering services in the IEP and IFSP and eliminate inequities that exist throughout the state as a result of differences in local funding and costs. It resolves challenges that very rural regions have due to high costs associated with travel and transportation. Part C of IDEA requires that services be provided in the least restrictive environment—most often this is the child’s home. Rural areas may also hire a service provider to deliver services at multiple centers in the region that may be many miles apart. Table 6 shows amount of time service providers spent traveling to direct services for approximately 500 children and their families to provide direct services. The last column of Table 6 shows total minutes spent traveling per month to deliver direct services to the 504 children in the sample. It also shows the wide variations between regions in amount of time and mileage reimbursement costs that regions incur to deliver DD preschool services. The costs are significant.

Table 6
Travel Time to Deliver Different Types of Direct Services by Region
(Mean Minutes Per Month Per Child/Family Served)

Region	min/month	Total number of children served	Total minutes spent traveling per month
1	92	55	5,060
2	113	31	3,503
3	501	15	7,515
4	107	24	2,568
5	34	33	1,122
6	33	19	627
7	150	60	9,000
8	159	23	3,657
9	53	60	3,180
10	308	51	15,708
11	70	20	1,400
12	102	34	3,468
13	24	65	1,560
14	1,367	14	19,138
All Regions	154	504	77,616



Also, very small, rural programs have fixed costs such as administrative or capital costs. For example, an administrator must organize and run staff meetings regardless of the number of staff who are supervised. The administrator probably has the same number of local and state meetings to attend as an administrator from a larger, more urban program and the administrator's transportation costs will probably be higher. Also, the initial investment required for capital costs and some materials and supplies are fixed, like assessment kits, assistive technology and playground equipment. While some of these costs become variable costs as more and more children are served they are necessary expenditures for very small programs regardless of the number of children served. These fixed costs in small programs result in higher per child costs because of the low numbers of children served. Yet the current flat grant preschool formula does not reimburse differently for children and families who live in very remote areas. The proposed funding formula would fully reimburse the actual costs of travel and transportation and fixed costs associated with services for DD eligible children and their families.

Projecting Personnel Salary Costs

Salary projections are based on two primary data sources from the state of Wyoming: District certified and Educational Support Professionals (ESP) salary and wage schedules for the 2005 fiscal year and statewide average salaries taken from the Wyoming Department of Employment website (<http://doe.state.wy.us/lmi/20042pub/tes/TOC001.htm>). All of the school district schedules were obtained from the Wyoming Education Association CD for 2004-05. ESP schedules were also obtained from the CD, although there were districts that did not include ESP schedules. However, all regions had at least one district that reported ESP schedules and those districts with ESP schedules were used throughout the region to estimate those salaries.



The salary projections that were based on school district salary schedules assumed that the most accurate comparison is to comparable job titles in the districts that are in the same geographical area as the region. District certified and ESP salary/wages were used to make salary comparisons where the positions were comparable. Generally we assumed that 1 step on the district schedules represents 1 year of experience (except when the district schedule had a small number of steps, then a 1 step to 2 or 3 years of experience was assumed).

State-wide average salaries for personnel were used from the Wyoming Department of Employment for projections of all related service personnel (e.g., physical, occupational, and speech and language therapists and special education teachers). These data were used because most districts do not have schedules for these personnel since the K-12 funding formula is reimbursement of 100% of the cost of these personnel. Using the Wyoming Department of Employment average salaries as a base, we created a 20 year schedule for each state-wide job title, taking the average entry wage as year 1 and the average experienced wage as year 20. One weakness of these projections is that there is no adjustment for differences in education level. The state-wide average comparison is made to the same geographical areas as the regions taking into account regional differences in these salaries. Whenever a comparable position and associated salary was not found in the district information, the state-wide average database was used as the comparison.

Step 1: Estimating FY 2005 Cost of Preschool Personnel Salaries Benefits

Descriptions of preschool personnel were collected from each region. These descriptions included the job title/position, education level/discipline, years of experience at this position and prior experience in early childhood education. We also obtained data from each region on the number of hours that each employee worked per week, months worked per year, current salary or



wage (gross before taxes), and benefits paid by the employer. The number of children with and without developmental disabilities was also obtained for each region so that we could estimate the amount of time and cost that each “blended” employee spent serving children with developmental disabilities. This form also asked the number of hours per week that each employee spent delivering services to children who are eligible for developmental disability preschool services.

Separating dedicated and blended personnel costs. The descriptions of personnel, time worked, salaries and benefits were used to estimate the current amount that preschool programs spend for salary and benefit costs to serve children with developmental disabilities and their families. The current costs were calculated by dividing personnel into two groups: dedicated and blended. *Dedicated personnel* (Tier 1) are those employees who are specifically trained in developmental disabilities and hired because they serve preschool children with developmental disabilities. *Blended personnel* (Tier 2) are those employees who do not have special training related to developmental disabilities and are hired to serve preschool children with and without developmental disabilities.

The full cost of FY 2005 preschool personnel salary and benefits for dedicated and blended employees was estimated. We assumed that preschool programs are funding 100% of the FY 2005 salaries for dedicated personnel from existing DD funding sources—this is labeled as dedicated salaries in Table 7. The percent of DD children served in each region was applied to the total FY2005 preschool blended personnel salaries to determine the portion that is paid from DD funds—this is labeled as DD Portion of blended salaries in Table 7. This percent varies from 33% to 97% across the regions as shown in Table 7.

Table 7

Cost Estimates: Salary and Benefits Estimates Based on State Wage and District Salary Schedules

Region	Child Count			Current Salaries		Additional Salaries		Totals		
	Total Children	DD Children	% DD Children	Dedicated Salaries	DD Portion Blended Salaries	Salary Difference (Dedicated)	Salary Difference (Blended)	Total Salary Difference	Total Benefit Difference	Per Child Salary & Benefit Difference
1	337	285	85%	822,516	475,515	26,997	43,865	70,861	234,903	907
2	159	154	97%	417,556	115,051	141,423	37,934	179,357	133,834	1,970
3	252	88.5	35%	281,903	109,897	53,069	23,809	76,878	40,089	464
4	307	102	33%	425,646	95,681	57,733	5,859	63,592	61,983	409
5	426	202	47%	774,891	234,302	128,733	6,355	135,088	83,918	514
6	291	230.5	79%	701,873	309,825	51,573	39,280	90,852	60,338	520
7	265	225	85%	523,672	481,544	49,310	54,223	103,533	0	391
8	210	146	70%	357,005	149,510	45,128	36,432	81,560	67,053	708
9	377	282.5	75%	1,179,462	377,024	158,039	37,342	195,380	414,686	1,618
10	430	215.5	50%	774,806	841,442	136,615	178,607	315,222	81,614	923
11	186	111	60%	488,248	77,885	90,523	38,310	128,833	19,225	796
12	437	411	94%	1,025,154	416,333	94,755	12,237	106,991	408,142	1,179
13	191	136	71%	580,345	342,541	17,410	0	17,410	0	91
14	103	87	84%	326,300	202,574	101,402	59,407	160,809	4,116	1,601
Total	3971	2676		8,679,376	4,229,124	1,152,709	573,658	1,726,367	1,609,902	
Per Child (FY 2005)				3,243	1,580	431	214	645	602	1,247
Total: FY 2006 Projection (2876 DD Children)				9,328,059	4,545,203	1,238,860	616,532	1,855,393	1,730,224	



Step 2: Estimating the Costs of Preschool Personnel Using Competitive Salary Schedules

Earlier in the report we showed large discrepancies between what preschool programs pay their professional employees and what school districts pay for similar work. Under the new preschool funding formula of 100% reimbursement for the cost of DD non-facilities costs we are assuming that preschool salaries and benefits will rise to be more competitive with the statewide and school district salaries paid for similar positions. The estimates for additional cost of salaries for personnel who are dedicated included related services personnel (OT, PT, SLP, etc), Family Service Coordinators and Special Education Coordinators, Infant Education Teachers, Special Education Teachers, One-on-One Aides and Related services aides, and any other employees with job descriptions specifying developmental disabilities responsibilities only. The main challenge in estimating the costs of dedicated personnel was that some regions provided more detailed descriptions of personnel than others. For example, some regions listed all aides simply as “aide,” while others specified which children the aides worked with. If the personnel were not specified as developmental disability staff then we assumed that the individual was a blended employee for purposes of the projected costs.

The difference in cost for salaries was estimated by mapping each preschool employee to employees with similar job titles (and where possible similar education and years of experience) on the school district salary schedule or to the Wyoming Department of Employment salaries. This was done for each preschool employee using the data provided on page 10 of the regional cost form (see Appendix A for forms). New total salaries for each employee were estimated for dedicated and blended preschool employees from the district schedules and Wyoming Department of Employment schedules. Most preschool employees were earning less than comparable staff employed elsewhere in the state.



***Step 3: Estimating the Difference in Salary Costs
for Dedicated and Blended Preschool Personnel***

The additional cost of personnel who served preschool children with and without developmental disabilities was estimated by taking the difference between the FY 2005 preschool salaries paid to employees and the estimated salaries of those personnel using the competitive salary schedules. This was done separately for dedicated and blended personnel. 100% of the difference in wages for the dedicated personnel is included in the cost projection for the new funding formula. Only the portion of the blended salary difference allocated to services for children with developmental disabilities was added to the projected cost for FY 2006 of implementing the new funding formula. Table 7 shows the results of these salary calculations—by region and the totals statewide. Blended personnel included staff such as general classroom aides, secretaries, janitors and regular education teachers. The total DD cost of blended personnel was estimated by taking their current salaries and benefits times the % of preschool children in the region with developmental disabilities that were served out of the total number of preschool children served.

***Step 4: Estimating the Difference in
Preschool Personnel Benefit Costs***

In order to project the cost of implementing the new preschool funding model on benefits we obtained the guidelines for benefits for state employees and applied state eligibility standards and costs to all DD preschool employees reported during FY 2005. For retirement, this would be 11.25% of wage and salary beginning with the first hour worked. Consequently, retirement costs are applied at 11.25% of total projected salary regardless of whether the employee worked one hour or full-time. Health benefits were estimated as 22% of wages and salaries. Health benefits were estimated for employees who worked at least half-time (.5 full-time equivalents). We



assumed that 35 hours comprised a full-time work week so that the 22% health benefit rate was estimated for preschool employees who worked 17.5 hours or more per week during FY 2005.

First, each preschool employee's benefits were calculated from the data provided from the regional programs. Each employee's benefits were compared with the guidelines for state benefits and new benefits were estimated for each employee using the state eligibility guidelines and percentages and new benefit amounts for each employee were estimated. The differences between benefits paid by the regional programs in FY 2005 and those estimated from state guidelines were estimated and this is given as the total benefit difference in Column 10 of Table 7. Region 7 is estimated as currently paying benefits to their employees at a rate that is comparable to the state guidelines thus the projected benefit cost for this region is zero. The projected cost for benefits in some regions is quite significant and the total is approximately \$1.6 million in additional cost as it is anticipated that the DD preschool programs will adjust their benefits to be more competitive with school districts and hospitals who hire similar staff.

Step 5: Estimating the Total Difference in the Cost of Salaries and Benefits

The total salary difference is equal to the total salary difference for dedicated personnel plus the total salary difference for the DD portion of blended personnel, which adds to about \$1.7 million in FY05. The total benefits difference is the total additional benefits estimated for dedicated personnel and DD portion of the additional benefits for blended personnel or a total of \$1.6 million. The total for salary and benefits is approximately \$3.3 million using FY 05 salary and benefits estimates or \$1,247 per child based on FY 05 child count. Table 7 shows these cost projections based on FY 2005 and FY 2006 child counts.

Table 8 shows these totals in FY 05 dollars and also shows the estimates assuming 4% and 8% increases in salaries and benefits. The actual costs of salaries and benefits for next



year will depend in part on the recalibration of school district salaries that is currently taking place. The recalibrated salaries were not available before the deadline for this report. The 4% and 8% adjustments are provided to show the influence of various increases in salaries on the predicted increases in costs. Salary and benefit costs are the largest portion of total cost and the largest contributor to the additional costs to fund preschool and the range is estimated between \$3.3 million and \$3.6 million or between \$1,247 and \$1,346 per DD preschool child served.

Table 8

Projection of Additional Salary and Benefits Funding with Inflationary Estimates of 4% and 8%

Region	FY 05 (estimated difference)	FY 06 (4% increase)	FY 06 (8% increase)
1	305,764	317,995	330,225
2	313,192	325,719	338,247
3	116,967	121,646	126,325
4	125,575	130,598	135,621
5	219,006	227,766	236,527
6	151,191	157,238	163,286
7	103,533	107,674	111,815
8	148,613	154,558	160,502
9	610,066	634,469	658,871
10	396,836	412,709	428,583
11	148,058	153,980	159,902
12	515,134	535,739	556,344
13	17,410	18,107	18,803
14	164,925	171,522	178,119
Total	3,336,269	3,469,720	3,603,170
*Per Child Additional Funding	1,247	1,297	1,346

Step 6: Estimating the Difference in Cost for Contract Labor, Professional Development, Travel and Transportation

Table 9 shows the projected costs for some additional key items in the DD preschool budget. Contracted services that were reported by the regional programs included dedicated personnel such as therapists and psychologists. They also included blended personnel such as



janitors and substitute teachers. For the analysis shown in the table, only dedicated contracted personnel were used. For the other resources in this table—professional development, transportation and travel—we assumed that 100% of these costs would be attributable to DD preschool services. The combination of best practices recommendations contained in this report which include recommendations for additional staff training and the fact that some of the past professional development activities have been funded through CDS of Wyoming lead us to project increased expenditures for professional development. These costs, when assumed by the regional preschool programs are estimated at \$110,000 per year. This translates to an additional \$43 per preschool child served and this amount is included in the professional development column in Table 9. This provides an upward estimate of some of the additional non-personnel costs in the model. As the table shows the FY 2005 estimated cost of these estimates is \$647,471 or about \$242 per DD preschool child served. The 2006 projected cost estimate for these services is \$695,862.

The “1 before 2” Screening Funds

The “1 before 2” screening effort is designed to increase the number of children in Wyoming who are screened for developmental disabilities and delays. Currently this effort is funded entirely through Child Developmental Services (CDS) and most of that funding comes from private foundation sources. The cost of this effort ranged between \$70,000 and \$100,000 per year during which time screening increased by 34% statewide. It is clear that this effort is at least part of the reason why the numbers of DD eligible preschool children has increased by one half to three quarters of a percent each of the past few years. This effort is impressive. Ads for this screening campaign can be seen in nearly every community throughout Wyoming. It is estimated that the “1 before 2” child screening cost effort is approximately \$125,000 in FY 05

Table 9
Contract Labor, Professional Development, and Transportation (2004-2005 Child Count)

Region	Child Count		Contracted Services		Professional Development		Transportation		Total's		
	DD %	DD	100%	Difference	100%	Difference	100%	Difference	Total 100%	Total Per Child Difference	Total Additional Cost
1	86%	285	39.73	5.52	72.92	10.13	345.53	48.02	458.19	63.68	18,147.61
2	93%	154	0.00	0.00	126.55	9.15	147.39	10.65	273.94	19.80	3,049.65
3	35%	88.5	0.00	0.00	187.66	122.66	845.26	552.48	1,032.91	675.13	59,749.38
4	30%	102	151.88	106.32	664.60	465.22	121.98	85.39	938.47	656.93	67,006.47
5	48%	202	326.31	170.11	89.83	46.83	292.67	152.58	708.81	369.52	74,643.53
6	84%	230.5	172.78	27.69	103.07	16.52	488.59	78.32	764.43	122.53	28,243.44
7	73%	225	0.00	0.00	105.34	28.39	490.84	132.27	596.17	160.66	36,147.83
8	64%	146	18.82	6.82	193.81	70.25	125.20	45.38	337.83	122.45	17,877.04
9	79%	282.5	0.00	0.00	133.25	27.96	130.10	27.29	263.35	55.25	15,607.71
10	33%	215.5	844.69	564.43	129.60	86.60	542.96	362.81	1,517.25	1,013.84	218,481.84
11	77%	111	275.83	63.21	218.32	50.03	543.69	124.60	1,037.84	237.84	26,400.16
12	94%	411	210.17	13.40	124.74	7.96	358.60	22.87	693.51	44.23	18,179.68
13	65%	136	84.04	29.09	336.00	116.31	118.44	41.00	538.48	186.40	25,349.97
14	78%	87	1,126.26	251.40	475.34	106.10	385.41	86.03	1,987.01	443.53	38,587.10
Total		2676	3,250.51	1,238.00	2,961.04	1,164.10	4,936.66	1,769.68	11,148.20	4,171.78	647,471.41
											241.95
											695,862.40

This spreadsheet assumes that transportation, professional development, and the related services portion of contracted services is used fully by DD children. Therefore, this spreadsheet calculates the additional cost to reimburse these costs at 100% (as apposed to reimbursement based on child count percent).

Each "100%" column is the per child reimbursement amount.

Each "Difference" column is the difference between 100% reimbursement and child count percentage reimbursement



and this is a responsibility of the preschool programs. More universal child screening has resulted in more children who qualify for preschool services being referred, enrolled and served by the preschool programs. Under the new preschool funding formula screening costs are proposed as a 100% reimbursable service estimated to cost approximately \$47 per preschool child served in FY 2005. In addition, the DD preschool programs incur additional screening costs for which they are not reimbursed. Many more children are screened than are eligible for services. The new preschool funding formula would reimburse screening based on the actual screening cost and provide incentives to fully assess developmental delays in Wyoming's early childhood population.

The Cost of Hiring Additional Professional Staff

The DD regional preschool programs were surveyed regarding the number of unfilled positions. The results showed that most regions had at least one speech/language therapy position that they had been unable to hire at the salary and benefit package that they could pay under the current preschool funding. There were also a few regions that reported unfilled intervention and occupational therapy positions. The cost of filling these positions is shown in Table 10 and is just over \$1 million per year. Since we do not know the specific training and years of experience of the employees who may be hired to fill these positions, we estimated the cost from the average salaries for similar personnel in the K-12 special education expenditure report for FY 2004. These estimates were adjusted by 8% to project the FY2006 cost of filling these positions (assuming an 8% increase in salaries and benefits since FY 2004).

This may be a conservative estimate since some of the regional directors have expressed concerns about high staff caseloads for existing staff. Table 11 describes the caseloads of preschool service providers and there are some large discrepancies shown. Caseloads for service



coordinators range from 18 to 67 per provider and those for therapists range from 17 to 56 per provider. Teachers reported caseloads ranging from 8 to 35. The models of service delivery, the rural/urban nature of the community, intensity of services, number of children with and without disabilities who are served by the teachers are variables that affect caseload. It is possible that programs will recruit additional staff so that caseloads for some professions in specific regions will be reduced and associated costs would increase.

Table 10

*Estimated Costs of Unfilled Positions (FY 2006)
(14 Speech/Language, 1 Occupational Therapist,
1 Intervention Specialist, 2 Special Ed Teachers)*

Region	Total Salaries and Benefits
1	0.00
2	0.00
3	224,881.72
4	183,887.98
5	118,414.40
6	0.00
7	59,207.20
8	59,207.20
9	0.00
10	59,207.20
11	118,414.40
12	118,414.40
13	59,207.20
14	59,207.20
Total Cost	1,060,048.90
4% Inflation	1,102,450.80



Table 11

Average Caseload Size of Children Served Through Wyoming Preschool Program as Reported by Providers

Region	Service Coordinators			Teachers			Therapists		
	Mean	N	SD	Mean	N	SD	Mean	N	SD
1	31	18	18	27	5	24	28	20	14
2	29	8	9	19	1	0	27	11	8
3	37	4	33	13	1	0	17	3	6
4	23	5	7	12	3	6	21	6	7
5	24	7	13	22	2	15	25	5	13
6	34	5	17	20	2	8	38	9	18
7	38	6	16	35	2	14	51	9	19
8	67	2	30	13	6	8	56	3	29
9	34	11	17	15	7	4	32	13	13
10	18	20	13	8	11	4	23	16	12
11	24	6	11	24	1	0	22	6	8
12	37	19	29	20	10	16	40	18	15
13	19	8	16	12	12	2	29	11	22
14	24	5	9	20	2	28	24	7	17
Total	29	124	20	15	65	7	31	137	17

The Projected Costs of Tier 3 Funding for Capital Facilities

Capital facilities needs for serving preschool children with disabilities were estimated using Wyoming Public Schools Facility Design Guidelines which gives a school size per student of 35 square feet per child for classroom space and 146 total square feet per child for children K-12. The Division of Family Services guidelines for infants gives 50 square feet per child for classroom space resulting in 161 total square feet per child for children age birth to 3 (50 square feet for classroom plus 111 square feet for other services). Current capital construction cost in Wyoming for school facilities is \$165 per square foot (personal communication, James “Bubba” Shivler, Director of the Wyoming School Facilities Commission). There were 2,876 preschool children with disabilities enrolled statewide during the 2005 school year. Table 12 summarizes the projected costs of constructing facilities based on these guidelines. The actual Part C facilities cost could be lower since not all Part C children are served on location in a facility—



many receive home visits from their service providers. The Part C facilities cost given in Table 12 assumes that all Part C children will be served in the DD preschool centers.

Table 12
FY 2005 Child Cost Facilities Calculations (in 2005 dollars)

Region	Part C Child Count	Part B Child Count	Part C ^a sq ft	Part B ^b sq ft	Total sq ft	Total cost ^c	Annual cost ^d
1	88	242	14,168	35,332	49,500	\$8,167,500	\$272,250
2	36.5	123.5	5,876.5	18,031	23,907.5	\$3,944,737.50	\$131,491.25
3	21	63	3,381	9,198	12,579	\$2,075,535.00	\$69,184.50
4	39.5	74.5	6,359.5	10,877	17,236.5	\$2,844,022.50	\$94,800.75
5	45.5	164	7,325.5	23,944	31,269.5	\$5,159,467.50	\$171,982.25
6	77.5	166.5	12,477.5	24,309	36,786.5	\$6,069,772.50	\$202,325.75
7	48.5	194.5	7,808.5	28,397	36,205.5	\$5,973,907.50	\$199,130.25
8	31.5	101.5	5,071.5	14,819	19,890.5	\$3,281,932.50	\$109,397.75
9	100	221	16,100	32,266	48,366	\$7,980,390.00	\$266,013.00
10	55	160.5	8,855	23,433	32,288	\$5,327,520.00	\$177,584.00
11	36	81.5	5,796	11,899	17,695	\$2,919,675.00	\$97,322.50
12	135.5	328	21,815.5	47,888	69,703.5	\$11,501,077.50	\$383,369.25
13	40.5	120.5	6,520.5	17,593	24,113.5	\$3,978,727.50	\$132,624.25
14	33	47	5,313	6,862	12,175	\$2,008,875.00	\$66,962.50
Total	788	2,088	126,868	304,848	431,716	\$71,233,140	\$2,374,438
State funded @ 50%						\$35,616,570	\$1,187,219

^a Assumes 161 square feet per Part C child

^b Assumes 146 square feet per Part B child

^c Applies a \$165 price per square foot

^d Assumes all dollars allocated for facilities in 2005-2006 (not adjusted for future inflation)

The facilities cost estimates for Part B children is based on the assumption that all are served in the center as well and the total cost is approximately \$71 million for facilities for all DD preschool children in 2005 dollars. Under the proposed funding model, 50% of the total DD facilities cost would be funded through grants by the state of Wyoming so that the state cost would be approximately \$36 million in current, non-inflated dollars.



However, some of the preschool programs have recently constructed new facilities and are unlikely to submit a request for state funds under this grant system in the near future. Assuming that the cost is spread out over 30 years (the assumed life of capital facilities) and that the square footage cost will increase by 4% per year and 8% per year the state cost of funding DD preschool facilities grants over the next 30 years is provided in Table 13. The 4% increase is a very conservative estimate and based on the Wyoming cost of living index while the 8% was taken from the Municipal Index and reflects changes in the price of goods that municipalities purchase. Recent energy price increases, high demand for capital construction fueled, in part by low interest rates and in part from international markets and hurricane Katrina, has resulted in very recent large increases in the prices for raw materials and capital construction. It is difficult to know whether these fluctuations are likely to be temporary or permanent in the market.

Table 13

Estimated Facilities Costs—Total, With 50% State Funds in 2006, Annualized over 30 Years

Region	2006 Estimated Cost 100%	2006 Estimated Cost 50%	50% of Cost Facilities Cost Annualized Over 30 Years at 4%	50% of Cost Facilities Cost Annualized Over 30 Years at 8%
1	\$8,179,545.00	\$4,083,750.00	\$7,634,562.15	\$15,420,677.11
2	\$3,944,737.50	\$1,972,368.75	\$3,687,339.29	\$7,447,875.52
3	\$2,075,535.00	\$1,037,767.50	\$1,940,104.19	\$3,918,721.16
4	\$2,844,022.50	\$1,422,011.25	\$2,658,447.08	\$5,369,666.69
5	\$5,159,467.50	\$2,579,733.75	\$4,822,806.89	\$9,741,350.77
6	\$6,069,772.50	\$3,034,886.25	\$5,673,713.55	\$11,460,055.33
7	\$5,973,907.50	\$2,986,953.75	\$5,584,103.84	\$11,279,057.07
8	\$3,281,932.50	\$1,640,966.25	\$3,067,783.00	\$6,196,464.20
9	\$7,980,390.00	\$3,990,195.00	\$7,459,661.27	\$15,067,403.42
10	\$5,327,520.00	\$2,663,760.00	\$4,979,893.79	\$10,058,642.88
11	\$2,919,675.00	\$1,459,837.50	\$2,729,163.18	\$5,512,502.66
12	\$11,501,077.50	\$5,750,538.75	\$10,750,620.26	\$21,714,649.84
13	\$3,978,727.50	\$1,989,363.75	\$3,719,111.40	\$7,512,050.46
14	\$2,008,875.00	\$1,004,437.50	\$1,877,793.82	\$3,792,863.51
Total	\$71,233,140.00	\$35,616,570.00	\$66,596,362.76	\$134,514,722.22



Summary and Recommendations

Table 14 summarizes the cost estimates associated with the new DD preschool funding formula. The additional total non-facilities cost is about \$5.5 million per year, without the effects of inflation. If all facilities were funded during the first year the total cost would be between \$41 million and \$44 million depending on the cost of new construction during the next fiscal year. The additional cost per child shows the amount that the proposed funding formula would cost per child if all of the funds were allocated in 2005-06. The last column of this table reflects the additional cost per child for the first year if facilities cost were spread over 30 years. The total cost of personnel and one year of facilities cost (assuming facilities are funded over 30 years) is approximately \$6.7 million.

Table 14

Summary of Additional Costs from the Three-Tiered Funding Mechanism

Resource	Additional Total Cost	*Additional Per Child Cost	***Additional Per Child Cost (funding first year of Facilities)
Salaries and Benefits	3,585,616	1,247	1,247
New Positions	1,102,451	383	383
Personnel Development, Contractual, and Travel/Transportation	695,862	242	242
1 Before 2	135,172	47	47
Subtotal	5,519,102	1,919	1,919
Subtotal (4% Inflation)	5,739,866	1,996	1,996
Subtotal (8% Inflation)	5,960,630	2,073	2,073
Facilities (funded at 50%)**	35,616,570	Part B 12,045 Part C 13,290	Part B 402 Part C 443
Total (Including Facilities)****	41,135,672	Part B 13,964 Part C 15,209	Part B 2,321 Part C 2,362
Total (Including Facilities w/ 4% inflation)	42,781,098	Part B 14,523 Part C 15,817	Part B 2,413 Part C 2,457
Total (Including Facilities w/ 8% inflation)	44,426,525	Part B 15,081 Part C 16,426	Part B 2,506 Part C 2,551

*Computed using FY 2006 Child Count (2,876 DD children)

**Funds facilities for 2,876 children under the 50% grant model

***Assuming facilities is paid over 30 years—first year total facilities cost is \$1,187,219

****First year total additional cost is \$6,706,321 without inflation



Preschool benefits. The bulk of the estimates of the additional cost are from salaries, benefits and facilities. These are gross cost estimates not net estimates. While most of the discussion in the report has been related to the cost of the proposed funding mechanism it is important to remember that the mechanism is recommended because these additional resources will benefit Wyoming's children and families and ultimately, their taxpayers. The benefits from this preschool investment, while difficult to precisely estimate, do exist as reflected in the literature on best practices in early childhood education. One key early childhood study found that for every \$1 invested in early childhood education parents and taxpayers save approximately \$17 in later costs from reduced special education services, grade retention, better post-secondary outcomes, etc. (Schweinhart et al., 2005). One of the legislative intents of IDEA early childhood legislation was to reduce the need for special education services as children move through elementary and secondary school by improving developmental outcomes early. There is evidence that developmental outcomes for preschool children with developmental delays in Wyoming are on average improving after 16 months in the program—their rate of developmental growth rose. This means that many of the children served are catching up with their non-disabled peers.

Cost of personnel turnover is reduced. However there are also gaps in DD preschool services, in particular in the recruitment and retention of qualified personnel who provide direct services to children. One of the benefits of making salaries more competitive is that the turnover costs will be reduced. When estimating the cost of turnover one of the large costs is the lost productivity from having the position vacant. This can be as high as 100% of the salary and benefits if the position is vacant for a long period of time. There are costs from the person leaving, from recruiting someone new to fill the open position and training costs for the new employee. Some estimates suggest that the cost of turnover can reach 1.5 times the salary of the



position—the cost is higher for managerial and professional positions than for paraprofessional employees with less specialized skills (Bliss, 2005).

Funding model increases labor market equilibrium. One of the concerns is that the model will simply increase wages but not the number of staff to fill those positions. The laws of supply and demand for labor do not support that view. When there is a labor shortage the demand for labor exceeds the supply and wages are below the level that would make supply and demand equal and alleviate that shortage. As wages rise then two things happen. First, the quantity of labor demanded decreases because as people face higher prices they find substitutes for this labor (for example, therapy aides are used more often and they switch to more of a consultative model with teachers and families so that the intensity of therapy time is less while maintaining therapy services). The second thing that happens is that the quantity of labor that is supplied increases as wages rise. This can occur over the long and short term. In the long-term more people enter the field and in the short term people shift from other states into Wyoming and between sectors who hire this type of labor—therapists and teachers.

The real challenge for Wyoming is that the competition for labor is between two state-supported programs so that by increasing preschool wages you are increasing the cost to Wyoming taxpayers. However, the problem is that there is disequilibrium in the local Wyoming market for these specialists—there are more going into school-age services compared with preschool than is economically efficient. Most of the literature on speech and language is very clear—earlier is better. For example, there are some very good studies that show that early speech/language with children with hearing loss can increase language development significantly (as well as cognitive and social-emotional). “Some researchers have suggested that the critical period for acquisition of a first language may be restricted to the first year of life (e.g., Olson, 1972; Yoshinaga-Itano et al., 1998). Other studies show that intervention at age 3 years of age



can be effective if they receive appropriate, intensive intervention. Nittrouer and Burton (2002) compared two groups of children identified at 3 years of age: one in which children spent their time in an intensive preschool and the other much less intensive. Children in the more intensive program had vocabulary scores almost 1.5 standard deviations higher (96 versus 75 on the Peabody Picture Vocabulary Test) compared with the less intensive group. Clearly early intervention between birth and five is important and speech and language is the biggest shortage that I found in Wyoming when interviewing the directors and staff.

What you have in Wyoming are school districts and birth to five programs competing for these therapists. However, there has been no mechanism to bring equilibrium to the local Wyoming markets for these specialists. There has been a greater personnel shortage in birth to 5 than school-age because under the K-12 special education funding formula the school age wages have been able to fluctuate based on the market. The two markets, school district and preschool, will achieve a better balance in the allocation of therapy time under the new funding formula since preschool programs will have more flexibility in what they can pay personnel where there are shortages. There will be greater equilibrium in the local markets for these specialists. There will be times when the school districts will find substitutes when they did not in the past—they will use more aides, perhaps invest in recruiting outside the state, and do more consultation. Preschool will continue with consultation and aides but they will be able to offer wages and benefits that are more similar to school-age and more of the certified therapists will be hired by the preschool programs alleviating this employment gap between the employers. This will allow the therapists to move to their highest valued use—and greater efficiency will be achieved.

Preschool services reduce the need for later special education services and costs. Also, the literature shows that by intervening with speech therapy early children move closer to the norms of their non-disabled peers and will need less speech and language during their school age



years; thus, there should be a natural reduction in the need for those services in later school age programs by providing quality, early, intensive services to the birth to 5 population. This will reduce the cost of special education services for many of these children as they move in primary and secondary education and “graduate” from special education in regular education services. Clearly, this is not true for all DD preschool children. Many of these children remain in special education throughout their school careers. However, there is other evidence that early inclusive services provided to children with developmental disabilities improve key decision-making and self-advocacy skills and improve the prospect for more positive post-school outcomes as they transition into adulthood, employment, and independent living (Goetze et al, 2004).

Quality facilities reap benefits for children. Another key recommendation in this report is to provide some core state funding for DD preschool capital facilities. This recommendation is based on the projection that there is a strong relationship between the environmental quality of school facilities and student performance. The literature on this subject is extensive and finds relationships between air quality, noise level, school design, and space on learning. The Environmental Protection Agency (EPA) found evidence that poor indoor air quality resulted in illness that could increase school absences, loss of performance, and general discomfort (EPA, August 2003). For the past 30 years literature has emerged that showed a strong relationship between high noise and poorer reading scores compared with children exposed to less noise. Bronzaft (2005) concludes that poor school facilities design and planning distracts students and makes hearing the teacher difficult leading to poor learning environments. There are documented benefits from having good quality educational facilities that promote optimal learning.



What are the Characteristics of the Wyoming Preschool Providers?

As noted in the literature review of best practices, it is recommended that preschool providers are hired who have received specialized training in this age range and in serving children with disabilities. Therefore, the Provider Survey developed for this study was designed to assess the following:

- Educational degrees and training
- Years of experience
- Specific credentials (i.e., Service Coordinator, Therapists Case load)
- Job satisfaction

The following tables provide a description of these provider characteristics. A Total of 265 Provider Surveys were received from those employed by the Wyoming Preschool Program from every region of the state. As shown in Table 15, the average provider age was 42 years. Approximately 92% of the providers identified themselves as white, 4% were Latino, and 2% Native American; the remaining 4% were of other ethnicities or multi-ethnic. This is generally in proportion to the cultural representation of the families, whereby 5% of the families were Latino and 4% were Native American (some providers refrained from responding to this question).

Table 15
Race/Ethnicity Percentages for Professional Staff

Variable	
Sample Size	226
Mean Provider Age (years)	42
White	92%
Latino	4%
African American	.9%
Native American	2%
Asian	0%
Pacific Islander	.4%
Multi-Ethnic/Racial	1%



Table 16 summarizes the educational qualifications of the professional staff, which excluded aides. Almost half of the providers reported having a Bachelor’s degree, and almost 40% had a Master’s degree. Approximately 12% had a high school equivalent or an Associates degree and a small portion had a doctorate. The mean years of professional experience working with children with disabilities was 12, reflecting a high level of experience.

Table 16
Education degrees and years of experience for Professional Staff

Education and Experience	%
High School Diploma/GED	6
Associates Degree	6
Bachelors Degree	49
Masters Degree	39
Doctorate Degree	2
Years worked professionally w/children w/disabilities	12

What Are the Caseload Sizes for Providers?

Providers were asked to report their caseload sizes for children served through the Wyoming Preschool Program (note that some providers serve dual roles, i.e., therapist and service coordinator and thus are sometimes reflected in more than one category). As shown in Table 17, the average caseload size for service coordinators was 29, 16 for teachers, and 31 for therapists. It is important to remember that teachers of inclusive classrooms also serve typically developing children (who were not counted here) and thus have a much larger actual caseload.

Table 17
Average Caseload Size of Children Served Through Wyoming Preschool Program as Reported by Providers

Total caseloads	Service coordinators	Teachers	Therapists
Mean caseload	29	16	31
Sample Size	124	65	137
Standard deviation	20	7	17



Given the important role of service coordinators and case managers (SC/CMs), the frequency of contact with families as reported by SC/CMs was analyzed. As shown in Table 18, the vast majority of SC/CMs (94%) reported being in contact with families at least monthly, with 66% reporting contact weekly or several times monthly. This is relatively frequent contact with families compared to other service coordination studies (Roberts, Behl, & Goetze, 2005).

Table 18

Service Coordinator and Case Manager Frequency of Contact with Families

Frequency of contact	%
At least once a week	28
A few times a month	38
About once a month	29
Less than once a month	6

To What Extent Are Wyoming Preschool Providers Satisfied With Their Jobs?

High ratings of job satisfaction are important in order to prevent staff turnover. Figure 1 reflects the responses of the service coordinators/case managers and preschool teachers when asked, “How satisfied are you with your current job as a (family service coordinator/case manager/teacher)?” About 38% of the staff reported being “very satisfied” and 59% considered themselves “satisfied” with their position. In the business world, companies aim for a much greater percentage falling in the “very satisfied” category in order to sustain their “customers”, which in this case would be the providers. Further analysis was conducted looking at the providers who gave a rating of “dissatisfied.” When asked about the least pleasurable part of their job, they offered the following comments:

- Filling out forms and writing reports
- Scheduling meetings, attending meetings



- Uncertainty of case management procedures
- General paperwork
- Not enough time to routinely visit with families
- Tracking evaluations, transition plans, families who have moved, and changes in foster care placements.
- Having inadequate time to serve as both a classroom teacher and administrator.

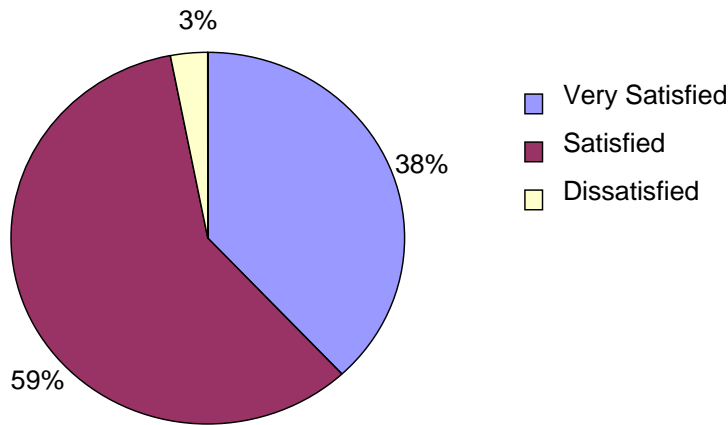


Figure 1. Teacher/coordinator job satisfaction.

What Were the Characteristics of Providers for Each of the Regions?

Analyses were conducted to determine if there were any statistically significant differences across regions on these provider characteristics, which was based on two-sided tests with a significance level of .05. In general, there were few statistically significant differences; Region 14, which serves the Wind River Indian Reservation, has a much higher percentage of providers who are Native American compared to the other regions. See Appendix B for provider results by region.

Figure 2 displays the service coordinators' and teachers' views regarding the adequacy of their pay. It is apparent that roughly 40% of these providers view their pay to be inadequate to very inadequate.

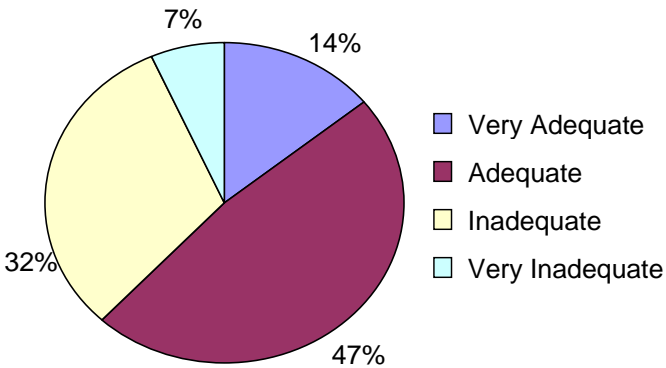


Figure 2. Teacher/coordinator adequacy of pay ratings

How Do Providers View the Program’s Ability to Involve Families and Meet Their Needs?

Table 19 summarizes the perspectives of providers in terms of family involvement as well as other program aspects to support families. When asked how often parents participate in therapy sessions or implement therapy recommendations at home, providers responded primarily with “sometimes” or “often.” This reflects a fair fit between the program’s intervention and fit with family routine. It may be worthwhile for programs to explore the reasons why higher ratings were not given on this important issue given that family-centered care is a critical philosophical component of early intervention. For example, about half of the providers report that they never offer evening hour services and about 40% offer them only sometimes. Parents who work during the day most likely face particular challenges in trying to integrate early intervention services and recommendations into their daily lives.

About 30-40% of the families are viewed by providers as having some difficulty in getting specialized equipment and in getting needed services in the community, with about 65% of families were viewed by providers as facing waiting lists for community services (which includes non-DD services). In response to these needs, about 70% of providers say that they often or almost always share information with other community providers and about 80% partner



with child care centers and preschools, which should help ensure that families access services and participation in inclusive environments.

Table 19

Perceptions of Therapists Regarding Parent Participation and Support and Community Partnerships

	Almost Never	Sometimes	Often	Almost Always
Parents participate in therapy sessions	13.5	52.6	26.9	7.1
Parents follow therapist recommendations	1.3	57.6	38.6	2.5
Specialized equipment is available for families to borrow	9.4	37.1	30.8	22.6
It is easy for families to find services	4.4	27.7	45.3	22.6
Providers share resource information	4.4	22.6	49.1	23.9
There are few waiting lists for services	17.1	47.9	21.9	13.0
Therapy services include evening hours	49.4	41.1	8.9	0.6
Partnerships w/child care & preschool programs are being established	0.6	13.4	33.1	52.9

Recommendations

The analysis of the provider survey data reflect that the majority of the Wyoming Preschool Program providers are qualified in terms of their degrees and have a great deal of experience serving children with disabilities. Their perceptions regarding the program are worth further exploration.

- Strive to reach higher satisfaction levels with employees, particularly in terms of wages. Ways to address this need are proposed in the cost and financing section of this proposal.
- Explore ways to make the paperwork requirements more efficient.
- Provide further training and mentorship in how to do service coordination, especially helping families access services and sharing information with other community providers.
- Provide incentives to providers to see families during the evening if it meets the family’s needs.



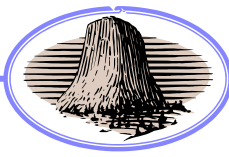
What Are the Characteristics of the Children and Families Enrolled in the Wyoming Preschool Evaluation?

Approximately 540 families from across the 14 regions consented to participate in the study. The targeted study enrollment was approximately 20% of families served from each region. This goal was met for 10 regions, with three regions providing significantly more than 20% of their enrolled families and two regions providing significantly fewer. Demographic information about the children and families who served as subjects in the study was drawn from the Wyoming state data system as well as from family report via the Family Survey.

Table 20 shows some key characteristics of the children enrolled in the study. The average age of the children was 47 months at the time of family survey data collection; approximately 24% of these children were 35 months or younger, and, therefore, assumed to be served by the Part C Early Intervention Program. Almost all of the children in the study had insurance

Table 20
Characteristics of the Children enrolled in the Evaluation Study

Child characteristics	
Sample size	540
Mean child age (months)	47
% Female	33%
% Male	67%
% with insurance	96%
Public insurance	42%
Private insurance	43%
Both public and private	14%
Ethnicity	
White	82%
Latino	5%
African American	.2%
Native American	4%
Asian	.8%
Multi-Ethnic/Racial	8%
Total % minorities for study	18



coverage, with an equal split between public and private insurance; about 14% of the families had dual coverage, which is often associated with children who have more complex medical needs.

Over 80% of the children were categorized by families as White; the greatest minority categories were Multi-ethnic/racial, Latino, and Native American, respectively. The percent minorities of the sample is about 66% higher than percent minorities for the general population (see section on Contextual Characteristics). This racial/ethnic representation in the sample of children is generally proportionate with the characteristics of the providers serving the families.

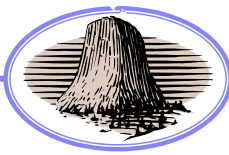
Table 21 presents income and education information for the families enrolled in this study. About one quarter of the families had incomes under \$20,000, with half of the families having incomes between \$20,000 and \$60,000. The education levels of the families reflect that almost one third of the families had only a high school diploma or less, and about one quarter of the families had at least a bachelor's degree.

Table 21
Characteristics of the Families enrolled in the Evaluation Study

Family characteristics (income)	%	Parents' Education Level	%
Income < \$20,000	25	> High School/Some High School	4%
\$20,000 - \$39,999	29	High School Diploma/GED	27%
\$40,000 - \$59,999	21	Some College/ Associates Degree	21%
\$60,000 - \$79,999	14	Bachelors Degree	15%
\$80,000 - \$99,999	5	Some Grad School/Masters Degree	4%
\$100,000 or more	6	Doctorate Degree	1%
Median income general population	\$37,892		
Sample Size	453		451

What Were the Characteristics of Families Enrolled From Each of the Regions?

Appendix C features the demographic characteristics of the families from each of the regions. Region 14 represented the greatest percentage of minorities (100%), with Region 3



reporting the smallest percentage (6.7%). In terms of family income, Region 11 has more families reporting higher incomes compared to Region 10 with the lowest; Region 11 had the highest reported education level with 65% of parents having at least a bachelor's degree (this is most likely attributed to the presence of the University).

What Was the Impact of the Wyoming Preschool Program on Family Well Being?

Family perceptions about the program and its outcomes for their family were measured via a Family Survey, for which families had the option to complete either via telephone with EIRI-based callers or via a written survey which was then mailed directly to EIRI. The actual survey is provided in Appendix A. Spanish speaking families were administered the survey via telephone with Spanish speaking interviewers ($n = 10$).

The Family Survey is designed to assess the families' experiences and feelings about the following:

- Getting Connected with the Program
- Child Evaluation Process
- IFSP/IEP
- Child and Family Services
- Family Service Coordinator/Case Manager
- Consistency with Family Routine
- Changes in Child's Development & Health
- Transition to Preschool Services

Domain scores were derived for the Family Survey by combining items based on content validity as well as statistical analysis reflecting cohesive constructs. Families were asked to rate specific program components using a Likert-type scale where 1 = poor and 4 = excellent.

Domain scores were calculated by taking the cumulative ratings for each domain and dividing it by the highest possible score. This was used to facilitate interpretation of the findings by presenting the extent to which families scored in relation to 100% —the optimal score.

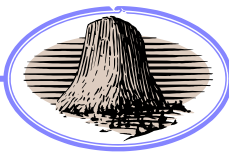


Figure 3 reflects the mean scores across the total statewide sample. Overall, the family scores reflect a mean score that falls between “good” and “excellent” for all of the domains, reflecting high quality of the Wyoming Preschool Program as perceived by the families surveyed. A description of the content represented in these domain scores is provided below.

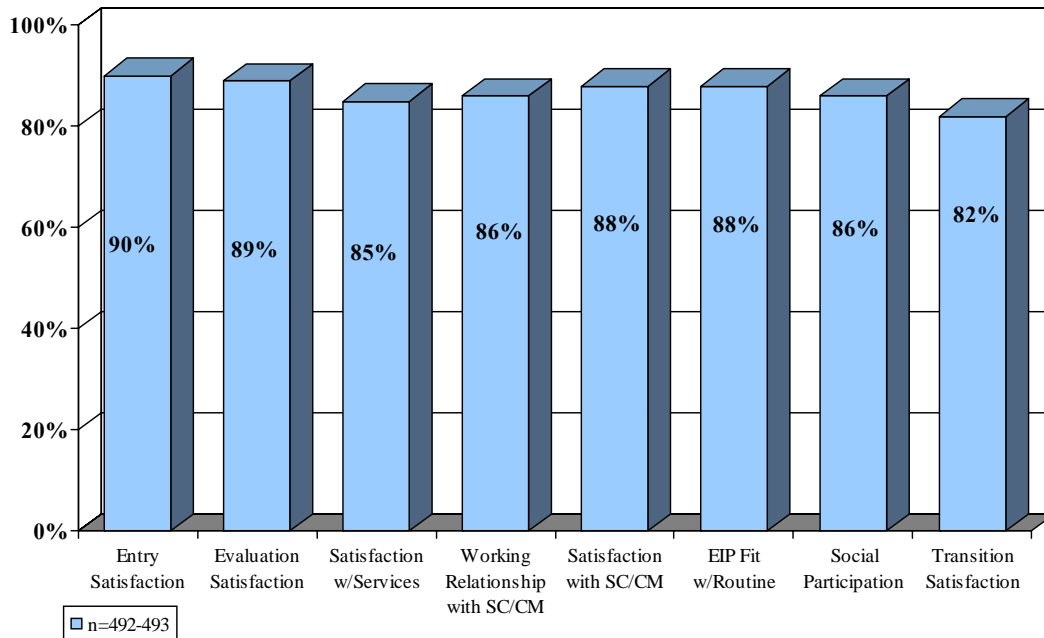


Figure 3. Family survey domains from total sample.

- *Entry into the program.* Families were very positive about their experience in entering the Wyoming Preschool Program. They reported that the program explained the steps for getting their child into the program as well as telling them about the services they offered.
- *Evaluation Satisfaction.* Families rated the programs highly in regard to their overall satisfaction with the evaluation process, including the extent to which the evaluation addressed their concerns and identified their child’s strengths.
- *Satisfaction with Services.* The amount, quality, and choices in locations and providers were all rated highly by families. When asked whether the program provided information on parent groups, only 47% reported “yes.” Families of children with special needs often report feeling isolated and describe a desire for family-to-family support; this is an area that programs may want to further explore.
- *Ease of working with Service Coordinator/case manager.* In general, families found their service coordinators could be reached easily and were responsive to desired

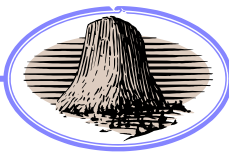


changes in services. Families were asked if they were given a choice in who would be their service coordinator, and 75% of the families said “no.” When asked if they knew that they could change service coordinators if they desired it, almost 50% said they did not know this. In terms of frequency of contact with their service coordinator, 39% reported being in contact at least once a week or more, and 26% were in contact at least 1 to 3 times per month, and 21% said they had contact 1 to 6 times per year.

- *Satisfaction with Service coordinator/case manager characteristics.* Families rated their SC/CM highly in terms of their ability to understand their family’s needs, is a good listener, is knowledgeable regarding child development, explains things well, and making sure all providers understand what one another are doing.
- *Program fit with routine.* Families were asked to rate how well their child’s services fit with the activities that are important for maintaining their family routine, such as going to work, getting children to school and taking care of their homes. In general, families found that the Wyoming Preschool Program were a good fit, still allowing families to maintain their desired routine.
- *Social participation.* Families of children with special needs often are challenged by the impact of their child on their ability to interact with friends, family, and general community participation. Families reported that in general they are still able to take part in desired activities, which is important for family well being as well as providing inclusive environments.
- *Transition Satisfaction.* Families were asked about their experiences when their child changed for the Part C service delivery system serving children birth to age 3 to the Part B program that serves children 3 to 5 years. The mean score for this domain was relatively lower than the other domains, reflecting the importance of programs focusing on improving the transition process. Families rated the programs as generally “good” in explaining the transition process, offering them choices in services, and the family’s ability to make informed decisions. It is important to note that only about half of the families answered these questions even though many more were of transition age. This could be because families in Wyoming do not know that they are transitioning since services are provided from the same agency and often by the same providers for children birth to 5.

What Were the Family Well-Being Outcomes for Each Region?

Appendix D shows results from Family Survey domains for each region. These regional scores reflect highly positive perceptions of families in terms of quality of the program. Caution should be taken when comparing results of one region to another due to the wide range in sample sizes, diverse contextual characteristics, and variations in service delivery as well as funding.



How Does the Wyoming Preschool Program Impact Child Development Outcomes?

The key purpose of the Wyoming Preschool Program is to enhance child development, supporting children in reaching their full potential and remediate delays to the fullest extent possible. To determine the extent to which the program has impacted child development, extant data were obtained from the programs directly for the subjects enrolled in the study.

What Data Were Used to Measure Child Development?

Extant data were based on any available testing protocols provided by the regional programs. For each subject, two age equivalent scores from assessments at least 6 months apart in as many domain areas as available were obtained. Domain areas included:

- Cognition
- Motor
- Language
- Social/Emotional
- Adaptive/Self-Help
- Articulation

A Developmental Quotient (DQ) was then calculated by taking the child's Age Equivalent (AE) score and dividing by their chronological age. For example, a 48-month-old child functioning at a 48-month level would have a DQ of 1.0 ($48/48 = 1$); a 48-month-old child functioning at a 24-month level would have a DQ of .50 ($24/48 = .50$). Use of DQs provides a common metric regardless of the amount of time between the first and second assessment.

Almost all of the children were evaluated to determine eligibility for services, typically being tested in the suspected areas of delay using standardized or criterion-referenced assessment tools. Based on discussions with program directors and providers, it appears that subsequent evaluations were performed based on individualized need. In general, the programs do not appear to conduct evaluations with any consistent periodicity, adherence to specific assessment



tools, or ensuring that developmental domain areas are consistently assessed for all children. Some of the children were evaluated specifically for this study. Due to this variability, child development outcome data were not available for all of the subjects across all of the areas of development. Thus, the sample size on which these analyses were based on roughly one fourth to one third of the total sample enrolled in the study.

What Were the Changes in Child Development?

Table 22 reflects the developmental scores at Time 1 (typically entry into the program) and Time 2. The mean time period between Time 1 and Time 2 assessments was 16 months.

Table 22

Comparison of Child Developmental Quotients between Time 1 and Time 2

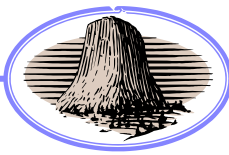
Domain Area	DQ Time 1	DQ Time 2	n
Cognition**	.70	.76	158
Motor***	.67	.75	198
Language*	.72	.77	295
Social/Emotional	.69	.72	123
Adaptive/Self-Help	.69	.73	121
Articulation***	.62	.74	65

* $p < .05$

** $p = .01$

*** $p < .001$

Time 1 DQ scores represent delays of approximately 33%, reflecting a sample of children with significant developmental delays. Statistically significant differences were found across all five major areas of development as well as speech articulation. These growths in DQ elude to the impact of the Wyoming Preschool Program on achieving the goal of improving child developmental outcomes; however, this has not been empirically demonstrated due to absence of a control group. Wyoming's definition of DD is a delay of 25% or more. The DQs at Time 2 show that many of the children who were eligible for the program at Time 1 may no longer be



considered to have developmental delays based on this criterion. The need for later special education services is reduced as the DQ scores approach those of their non-disabled peers.

Due to the great variability in the sample sizes across the region—many for which the sample size was less than 10—DQ scores by region are not reported here. As discussed later in the “recommendations” section, the evaluators encourage the state Wyoming Preschool Program to increase the collection of child development data for accountability purposes as well as to guide program improvement.

What Factors Effect Child Developmental Progress?

We were interested in exploring the family and service characteristics that may effect the developmental progress of children as measured by their developmental scores (DQs) at Time 2. The DQ score at Time 1 and length of time in the program were already known to consistently effect DQ scores at Time 2. To explore the effects of other factors, regression analyses were performed, enabling us to control for the effect of these variables. Analyses were run using family demographics typically reported in the literature to effect child development (i.e., maternal education, family income); none of these family characteristics were found to consistently effect DQs at Time 2. We also looked at the effects of the “amount of time receiving individualized instruction” and the “amount of time in group instruction,” and these also did not consistently effect Time 2 DQ scores.

Theory would suggest that those children with the most severe disabilities or delays would be the ones who would require the greatest amount of service. This being the case, we also looked at a subsample of children who had severe disabilities (defined as those whose scores were lower than .66 on their initial assessment DQ assessment). The results for this subgroup were essentially the same as those for all the children.



These analyses demonstrate the challenges in determining the factors that effect child developmental progress for children with disabilities/significant delays. In reality, this population is very heterogeneous in terms of the complexity of their disability - they vary greatly in severity, areas of delay, presence of health conditions, and family demographics. This task is particularly difficult given the individualization in services that theoretically occurs in meeting the unique needs of each child. Further exploration of these factors is warranted, and the authors hope to conduct further investigation.

Time Spent in Direct Services

The time that service providers reported spending in group services across all regions was 415 minutes per week per child and family. This is nearly 7 hours a week or 2½ hours three days per week. This is fairly typical of what we found at the preschool center around the state. Providers reported spending approximately 87 minutes per week or about 1 ½ hours per week in 1 on 1 service with the child and family. We also asked providers to report the amount of time that they spent supervising or training other staff to provide direct services and this averaged about 45 minutes per week. Providers reported spending nearly 7 hours per week in direct service provision with each child and family on average per week. Table 23 describes the differences in direct service provision by region and shows that the intensity of services varied throughout some of the regions. The amount of time that children spent in group services was highest in region 13 and followed by region 10 and then by region 14. These are all regions that blend substantial non-DD funds with their funds for preschool DD services to broaden the numbers and types of children that they serve. Region 13 builds on a base of county support while Region 10 blends DD services with those of Head Start. Region 14 reported receiving supplemental grants from the Indian Education fund for Indian Children. These funds could



explain the differences in intensity of services observed in these regions. Alternatively, these programs could differ in their philosophical approach to serving children with developmental disabilities with an emphasis on intensive, center-based services. This philosophy would reveal itself through the increased group and total direct services for those regions (see Table 23).

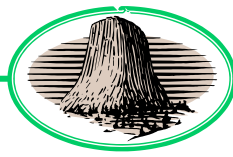
Table 23
Time Spent in Direct Services per Child by Region (Minutes per Week)

Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14
One on One Services	74	108	14	99	49	20	94	49	87	147	65	78	56	165
<i>Sample Size</i>	<i>54</i>	<i>30</i>	<i>84</i>	<i>24</i>	<i>32</i>	<i>19</i>	<i>59</i>	<i>23</i>	<i>60</i>	<i>51</i>	<i>20</i>	<i>33</i>	<i>22</i>	<i>14</i>
Group Services	127	154	183	352	41	314	148	338	529	750	117	264	1018	586
<i>Sample Size</i>	<i>37</i>	<i>25</i>	<i>7</i>	<i>6</i>	<i>20</i>	<i>9</i>	<i>54</i>	<i>19</i>	<i>43</i>	<i>38</i>	<i>11</i>	<i>29</i>	<i>54</i>	<i>6</i>
Supervision	19	10	44	22	13	37	58	136	9	57	41	47	69	13
<i>Sample Size</i>	<i>37</i>	<i>23</i>	<i>9</i>	<i>12</i>	<i>27</i>	<i>10</i>	<i>54</i>	<i>22</i>	<i>40</i>	<i>46</i>	<i>19</i>	<i>31</i>	<i>62</i>	<i>6</i>
Total	170	236	196	198	83	178	278	458	472	757	168	343	931	422
<i>Sample Size</i>	<i>55</i>	<i>31</i>	<i>15</i>	<i>24</i>	<i>33</i>	<i>20</i>	<i>60</i>	<i>23</i>	<i>60</i>	<i>51</i>	<i>20</i>	<i>34</i>	<i>65</i>	<i>14</i>

Recommendations

In general, the results from the analysis reveal that children and families enrolled in the Wyoming Preschool Program are achieving very positive outcomes. This study also revealed potential ways that the Wyoming Preschool Program can make their program even stronger:

1. Ensure that families are provided information about family-to- family supports, be it local or state entities, and provide a variety of opportunities for families to connect informally with one another to meet their unique family routines.
2. Wyoming’s model of having case managers for children 3-5 years is relatively unique compared to other states, and they can play an important role in ensuring coordinated, comprehensive services. It is important to ensure that families fully understand the role of their case manager or service coordinator as well as their right to choose their SC/CM.
3. Consider policies to ensure that child outcome data are collected consistently in terms of measures used, periodicity of re-evaluations, and across developmental domains. As demonstrated by this study, these data can be extremely useful in demonstrating program effectiveness and in guiding continuous quality improvement strategies within programs.



What Are the Contextual Characteristics that Influence the Regional Wyoming Preschool Programs?

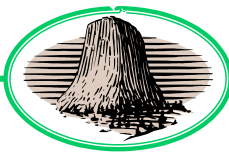
Contextual characteristics pertain to the socio-demographic characteristics of the communities (such as the population size, average household income, cultural diversity) as well as the characteristics that guide the extent to which community agencies, churches, citizens, and other public/private entities work together to support children and families. These contextual characteristics can influence the provision of services; for example, the tax base and healthy growing businesses can influence the amount of local funding available. Strong local collaborative councils that engage families as well as private and public providers can ensure that services are more accessible to families and that include children with special needs.

What Are the Socio-Demographic Characteristics of the Regions?

Socio-demographic characteristics of the regions are provided in Appendix E. There are considerable differences across regions. For example, Teton County in Region 1 has the lowest percentage of families below the poverty level (6%), while Albany County (Region 11) has 3.5 times the poverty rate (21%) despite the presence of the university. The Wind River Reservation is extremely disparate with 53% of households being below the poverty level. These data corresponded closely with the perceived community financial support for children's services.

How Do These Socio-Demographic Characteristics Influence the Provision of Services?

Growing populations, particularly increases in minorities, can enrich the culture of the community, and they can be a challenge in terms of keeping up with needed increases in staff, particularly the need for those who are multi-lingual. Such changes can also influence the need

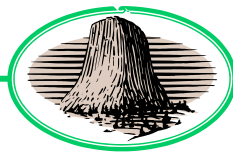


for diverse, culturally competent outreach strategies. Low-income families often have a strong need for help in accessing resources such as financial assistance, insurance coverage, mental health, and family support. Thus, characteristics of the community can drive the need for enhanced coordination among public and private entities who can offer these resources. Several qualitative and quantitative data collection tools were used to gather contextual information for each of the regions; these tools are provided in Appendix A. The information from these tools was synthesized, creating a picture of some of the key regional contextual characteristics.

What Were the Strengths and Challenges of the Regional Context?

Several qualitative and quantitative data collection tools were used to gather contextual information for each of the regions; these tools are provided in Appendix A. The information from these tools was synthesized, creating a picture of some of the key regional contextual characteristics. These points are highlighted below.

- When asked about the adequacy of providers in their county, the most universal needs identified for child care providers, respite care, dentists, and specialty care.
- Interagency relationships appear to primarily be at the “information exchange” or the basic coordination level. For example, most regions have a directory of resources and some basic interagency agreements. However, almost none of the regions reported the presence of pooled funding, co-location of programs, shared data efforts, or centralized referral services.
- Generally little to no physician participation in IFSP/IEPs, and they were occasionally members of the local early childhood councils.
- Many of the local interagency councils described themselves as serving the broader community, such as all children and families. This broad-based focus is important for bringing together community vision and support for all children.
- Most of the local councils were established based on a mandate by the state legislation at the inception of Early Intervention services.
- Most councils meet monthly, which is the minimum frequency required of action-based councils who want to go beyond information sharing.



- Families and private community supports such as churches were involved in about one third of the local interagency councils; most respondents acknowledged the need for family involvement. In general, financial support for family participation was not reported.
- In terms of culturally competent practices, most regions said that translated written materials were readily available, and about half said that translation assistance was available. A few of the regions reported intentionally recruiting staff from culturally diverse groups, including representation for diverse groups, providing training to staff in cultural issues, and having outreach to minorities via non-English media.
- There were a variety of barriers to interagency collaboration identified, especially: (a) no effective mechanism for communication between agencies, (b) agencies are frequently unaware that they are serving the same children and families, (c) agencies are protective of their professional turf, (d) confidentiality policies impede the sharing of client information, (e) agencies do not share the same philosophy, and case loads that are too large, (f) insufficient time for coordination, and (g) inflexible funding regulations.
- The consensus of the perceived relationship between the state administration and the regional administration was one of neutrality. The regions did not see the state administration impeding their efforts, nor did many report strong support in terms of training or technical assistance to help guide their community issues.

Recommendations

Although there the demographic characteristics and the economies of the communities are beyond the control of the Wyoming Preschool Program, there are some recommendations for supporting the infrastructure to support the system of care.

- Initiate dialogue with the regions and state administration on the ways the state-local relationship can be strengthened.
- Provide training and technical assistance in ways to strengthen culturally competent practices. Use cultural brokers—representatives from the community that are familiar with various cultures—to better understand the needs of individual regions.
- Provide training and technical assistance in service integration strategies to enhance the efforts of the local interagency councils, moving beyond information sharing.
- Implement mechanisms to increase meaningful family involvement at the policy level; providing stipends for families and increasing family awareness of family advocacy organizations are two ways to begin to educate families and recognize their value in policy making.



Evaluation Summary and Overall Recommendations

The goal of this study was to identify the resource allocations and service strategies that best support *service system efficiency and child and family outcomes*. The proposed study is unique in that it investigated current Wyoming Preschool service models particularly in terms of child and family outcomes as well as costs associated with different models.

An important step in completing this study was conducting a review of the literature regarding best practices in serving young children with disabilities. Through a contract with the National Institute for Early Education Research, a summary of efficacy studies and recommended practices was conducted. The findings from these reviews is provided in Appendix F. In short, the results reveal a dearth of empirically-demonstrated evidence to guide these policy and practice decisions; recommended practices based on those of experts in the field offer the best guidance at this time.

The results from this study reveal strengths and challenges of the Wyoming Preschool Program. This study demonstrates the positive child and family outcomes being achieved, and it offers recommendations for system improvements. Of particular importance are recommended funding formulas to ensure that the Wyoming Preschool Program continues to grow in its capacity to serve children and families through high-quality service provision.

Cost Analysis and Funding Recommendations

The proposed DD preschool funding formula is a culmination of the following activities and findings.

- The literature review shows that the benefits from quality preschool programs are long-lasting and significant.



- A review of 36 early childhood program studies found that there were large positive effects on school achievement, grade retention, placement (decreased) in special education and social adjustment.
- A 37 year follow-up study of the costs and benefits of preschool services found that there was a return to society of \$17 for every \$1 that was invested.
- Best practices in preschool highlight the importance of recruiting and maintaining a high quality early childhood special education workforce that are fully certified, receive a broad range of content areas as part of professional development programs such as supervision of paraprofessionals and accommodating cultural diversity .
- Class size reductions were found as particularly beneficial for younger children and for some special education populations, there is evidence that smaller caseloads may predict better student achievement.
- No two states have the same regulations regarding class size and caseload in special education and flexibility is important to insure that states are providing services that meet the requirements of each child's IEP and IFSP.
- Currently, Wyoming funds preschool using a flat grant formula. Primary weaknesses of this model are that it does not vary funding with the individual needs of the child and the family. It also does not vary funding with the regional cost variations that exist in the state of Wyoming, such as those for very high cost children with disabilities and for the high costs of serving very rural areas.
- The proposed Three Tiered Preschool Funding Formula is designed to fund services for eligible preschool children with disabilities and their families based on the needs identified in the IEP and IFSP.
- The proposed formula is also designed to alleviate the turnover and labor shortages that preschool programs face in competing for personnel with other major employers in their regions including school districts and hospitals.
- The incentive to maintain local funds as a source of revenue and public awareness is built into the formula through a matching grant incentive for capital facilities.
- The new funding formula recognizes the achievements of the preschool programs while addressing the challenges that they face.
- Monitoring of best practices throughout the preschool programs must continue in conjunction with the new funding model to insure best practices, like inclusion and LRP, continue to be implemented throughout the state.



Findings and Recommendations pertaining to Wyoming Preschool Providers

The analysis of the provider survey data reflect that the Wyoming Preschool Program providers in general are qualified in terms of their degrees and have a great deal of experience serving children with disabilities. Their perceptions regarding the program are worth further attention.

- Although providers are generally satisfied with their jobs, they view their pay as inadequate. Ways to address this need are proposed in the cost and financing section of this proposal.
- Explore ways to make the paperwork requirements more efficient.
- Provide further training and mentorship in the comprehensive role of service coordination, especially helping families access services and sharing information with other community providers.
- Provide incentives to providers to see families during the evening if it meets the family's needs.
- Discrepancies in provider caseload between the regions should be examined to determine whether providers in regions with high caseloads receive sufficient support to implement IFSP and IEP services and goals.

Findings and Recommendations Pertaining to Child and Family Outcomes

In general, the results from the analysis demonstrate positive outcomes for children and families enrolled in the Wyoming Preschool Program. This study also revealed some potential ways that the Wyoming Preschool Program can make their program even stronger:

- Ensure that families are provided information about family-to-family supports, be it local or state entities, and provide a variety of opportunities for families to connect informally with one another to meet their unique family routines.
- Wyoming's model of having case managers for children 3-5 years is relatively unique compared to other states, and they can play an important role in ensuring coordinated, comprehensive services. It is important to ensure that families fully understand the role of their case manager or service coordinator as well as their right to choose their SC/CM.



- Consider policies to ensure that child outcome data are collected consistently in terms of measures used, periodicity of re-evaluations, and across developmental domains. As demonstrated by this study, these data can be extremely useful in demonstrating program outcomes and in guiding continuous quality improvement strategies within programs.

Findings and Recommendations Pertaining to the State and Regional Context

Although the demographic characteristics and the economies of the communities are beyond the control of the Wyoming Preschool Program, there are some recommendations for supporting the infrastructure to support the system of care:

- Initiate dialogue with the regions and state administration on the ways the state-local relationship can be strengthened.
- Provide training and technical assistance in ways to strengthen culturally competent practices. Use cultural brokers—representatives from the community that are familiar with various cultures—to better understand the needs of individual regions.
- Provide training and technical assistance in service integration strategies to enhance the efforts of the local interagency councils, moving beyond information sharing.
- Implement mechanisms to increase meaningful family involvement at the policy level; providing stipends for families and increasing family awareness of family advocacy organizations are two ways to begin to educate families and recognize their value in policy making.



References

- Ager, C. L., Shapiro, E. S. (1995). Template Matching as a Strategy for Assessment of and Intervention for Preschool Students with Disabilities. *Topics in Early Childhood Special Education, 15*(2), 187-218.
- Algozzine, B. (2003). Scientifically Based Research: Who Let the Dogs Out? *Research-and-Practice-for-Persons-with-Severe Disabilities, 28*(3), 156-160.
- Barnett, A. (1989). Misapplications Reviews: Dealing with Autism. *Interfaces, 19*(3), 27-32.
- Barnett, W. S., Hustedt, Jason T. (2003) Preschool: The Most Important Grade. *Educational Leadership, 60*(7), 54-57.
- Bhakoo, O. N., Kaur, Satwant, Narang, Anil, & Verma, S. K. (1977). A longitudinal study of variations in development quotients (DQs.) in the first 30 months of life. *Indian Journal of Clinical Psychology, 4*(1), 59-68.
- Bliss, W. G. (2005). *Cost of Employee Turnover*. Retrieved September 30, 2005 from www.isquare.com/turnover.cfm
- Bowman, B. T., Donovan, M. S., & Burns, M. S. (2001). *Eager to Learn: Educating Our Preschoolers*. Commission on Behavioral Sciences and Education. Washington DC: National Academy Press.
- Bronzaft, A. L. (2005). *A Quieter School: An Enriched Learning Environment*. Retrieved September 30, 2005, from www.quietclassrooms.org/library/bronzaft2.htm.
- Brown, W.H., Odom, S.L., & Conroy, M.A. (2001). An intervention hierarchy for promoting young children's peer interactions in natural environments. *Topics in Early Childhood Special Education, 21*(3), 162-175.
- Brown, W. H., Conroy, M. A. (Eds.) (2001). [Promoting peer-related, social-communicative competence in preschool children with developmental delays](#). In H. Goldstein, L. Kacamarek, & K. English, *Promoting social communication in children and youth with developmental disabilities* (173-210). Baltimore, Maryland: Paul H. Brookes.
- Brown, W. H., & Conroy, M. A. (Eds.) (1997). *Including and Supporting Preschool Children with Developmental Delays in Early Childhood Programs*. Little Rock: The Southern Early Childhood Education Press.
- Brown, W. H.; Odom, S. L., & Conroy, M. A. (2001). An Intervention Hierarchy for Promoting Young Children's Peer Interactions in Natural Environments. *Topics in Early Childhood Special Education, 21*, 162-175.



- Brown, W., Horn, E. M., Heiser, J. G., & Odom, S. L. (1996). Project BLEND: An Inclusive Model of Early Intervention Services. *Journal of Early Intervention, 20*, 364-375.
- Bruder, M. B. (1993). The provision of early intervention and early childhood special education within community early childhood programs: Characteristics of effective service delivery. *Topics in Early Childhood Special Education, 13*(1), 19-37.
- Bruder, M. B. (2000). Renewing the Inclusion Agenda: Attending to the Right Variables. *Journal of Early Intervention, 23*(4), 223-30.
- Bruder, M. B. *Social Competence in Early Childhood/Effects of a Specific Curriculum Focus. Final Report.*
- Bruder, M. B., Staff, I. (1998) A comparison of the effects of type of classroom and service characteristics on toddlers with... *Topics in Early Childhood Special Education, 18*(1), 26-38.
- CDS Educational Salary Data; North Dakota 2004-2005 Salary and Benefits Information, Idaho 2003 SWS Enrollment Information, Colorado School Districts 2004-2005 Salary Schedules and Related Information, Nebraska 2004-2005, Utah 2004-2005, Montana Certified School Staff Salary Book 2004-2005, 2003 Omnibus Survey Caseload Report: SLP.
- Chandler L.K., Fowler S.A., Lubeck R.C. (1992) An analysis of the effects of multiple setting events on the social behavior of preschool children with special needs. *Journal of Applied Behavior Analysis, 25*(2), 249-63.
- Children Birth Through Five With Developmental Disabilities Served by Wyoming Child Development Centers (graph).
- Cohen, J. (1998) *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cook, T. D. (1985) Post-positivist critical multiplism. In L. Shotland & M. M. Mark (Eds.), *Social science and social policy* (pp. 21-62). Beverly Hills, CA: Sage.
- Diamond, K. E., et al (1994) Integrating Young Children with Disabilities in Preschool: Problems and Promise. *Young Children, 49*(2) 68-75.
- Diamond, K. E., et al (1988). Planning for School Transition: An Ecological-Developmental Approach. *Journal of the Division for Early Childhood, 12*(3). 245-52.
- Diamond, K. E., LeFurgy, W. G. (1994) Attitudes of Parents of Preschool Children toward Integration. *Early Education and Development, 5*(1). 69-77.
- Disabilities.* (2003) 28(3). 117-25.



- Duchan, J. F. (1994). Two Approaches to Research in Child Language. *Language Speech and Hearing Services in Schools*, 25(1). 48-51.
- Dunst, C. J., Bruder, M. B., Triveffe, C. M., Hamby, D., Raab, M., McLean, M. (2001). Characteristics and Consequences of Everyday Natural Learning Opportunities. *Topics in Early Childhood Special Education*, 21(2). 68-93.
- Early Intervention Research Institute. Final Report.
- Effectiveness of Early Special Education for Handicapped Children.*
- U.S. Environmental Protection Agency. (August 2003). *Indoor Air Quality & Student Performance* (Publication No. 402-K-03-006).
- Federal Outlook for Exceptional Children: Budget Considerations and CEC Recommendations, Fiscal Year 2003, 2002.*
- Forecast of Service Demand in Wyoming, June 23, 2003.
- Frea, W., Craig-Unkefer, L., Odom, S. L., Johnson, D. (1999). Differential Effects of Structured Social Integration and Group Friendship Activities for Promoting Social Interaction with Peers. *Journal of Early Intervention*, 22(3). 230-42.
- Gardner, J. F., Markowitz, R. K. (1986) *Maryland Family Support Services Consortium. Final Report.*
- Goetze et al, 2004.
- Goetze, L. D., Plamer, K., Barnett S. (1996). *Dollars and sense: Practical and simple methods for evaluating economic efficiency.* Paper presented at the American Public Health Association Meeting, New York.
- Goldstein, H., English, K. (1995) Use of peers as change agents in communicative interactions with preschoolers with disabilities. *Preventing School Failure*, 39(4). 16-21.
- Governor's Fact Finding Team Response Preschools – Birth Through Five: Why Early Intervention Works.
- Haas, D. F., Kraft, D. H. (1984). Experimental and Quasi-Experimental Designs for Research in Information Science. *Information Processing and Management*, 20(1). 229-37.
- Haines, David, et al. *The Development of Preschool Programs in America's Most Rural State: A Frontier Model for America*
- Hanson, Marci J. *Early Transitions for Children and Families: Transitions from Infant/Toddler Services to Preschool Education.* ERIC Digest E581.



- Harper, E. A., Developmental gains and future educational placement among children served in various types of preschool special education programs. *Dissertation Abstracts International Section A: Humanities & Social Sciences*, 63(1-A), Jul 2002. pp. 77.
- Heinlein, K. The Cost of Wyoming's Developmental Preschool and Early Intervention Services Fiscal Year 1997
- Hobbs, N., et al (1995). *The Economic and Psychological Burdens Associated with Lovaas Treatment for Childhood Autism*. ERIC.
- Historical Data for the Number of Children Birth to Five Years Old with Disabilities Served in Wyoming Developmental Preschools (graph)
- <http://doe.state.wy.us/lmi/20042pub/tes/TOC001.htm>
- Innocenti, M. S., Roberts, R. N. (1999). Participatory realism: Defining the role of non-evaluator. In R. N. Roberts & P. R. Magrab (Eds.) *Where children live: Solutions for serving young children and their families*. Stamford, CT: Ablex.
- Jacobson, J. W., Mulick, J. A., Green, G. (1998). Cost-benefit estimates for early intensive behavioral intervention for young children with autism—general model and single state case. *Behavioral Interventions*, 13(4), 201-226.
- James “Bubba” Shivler, Director of the Wyoming School Facilities Commission
- Janko, S., et al. () Portraits of Inclusion through the Eyes of Children, Families and Educators.
- Jenkins, J. R., Odom, S. L., Speltz, M. L. (1989). Effects of social integration on preschool children with handicaps. *Exceptional Children*, 55(5), 420-428.
- Jenkins, J. R., Speltz, M. L., Odom, S. L. (1985). Integrating normal and handicapped preschoolers: Effects on child development and social interaction. *Exceptional Children*, 52(1), 7-17.
- Jeppson, E. S., Thomas, J. (1995). *Essential allies: Families as advisors*. Bethesda, MD: Institute for Family-Centered Care.
- Juster, F. T., Stafford, F. P. (Eds.); *Time, goods, and well-being*. Ann Arbor: University of Michigan, Institute for Social Research, 1985.
- Juster, F. T. (1986). Response errors in the measurement of time use. *Journal of the American Statistical Association*, 81, 390-402.
- Lackney, J. A. (1999). *The Relationship between Environmental Quality of School Facilities and Student Performance*. Retrieved September 29, 2005 from Environmental Quality & Student Performance Website:
<http://schoolstudio.engr.wisc.edu/energysmartschools.html>



- Lasky, R. E., Klein, R. E. Yarbrough, C., Kallio, K. D., (1981). The predictive validity of infant assessments in rural Guatemala. *Child Development*, 52(3), 847-856.
- Leeds, S. J. (1984). Evaluation of Nebraska's Intensive Services Project: Lincoln and McCook, Nebraska, March 1983-February 1984.
- Lewis, M., McGurk, H. (1972). Evaluation of infant intelligence: Infant intelligence scores-true or false? *Science*, 178(4066), 1174-1177.
- Lieber, J., Hanson, M. J., Beckman, P. J., Odom, S. L., Sandall, S. R., Schwartz, I. S., Horn, E., Wolery, R. (2000). Key Influences on the Initiation and Implementation of Inclusive Preschool Programs. *Exceptional Children*, 67(1), 83-98.
- Lombardo, V., Lombardo, E. (1980). Structuring Learning Environments for Pre-School Handicapped Children. *Journal for Special Educators*, 16(2), 130-133,136.
- Lovass, O. I., Smith, T. (1988). Intensive behavioral treatment for young autistic children. In B. B. Lahey & A. E. Kazdin (Eds.), *Advances in clinical child psychology*, Vol. 11. (pp. 285-324). New York, NY, US: Plenum Press. xviii, 396 pp.
- Lowenthal, B. (1996). Teaching Social Skills to Preschoolers with Special Needs. *Childhood Education*, 72(3), 137-140.
- Markowitz, J., Larson, J. C. (). A Longitudinal Study of Children in Preschool Special Education Programs.
- McColl, A., Malhoit, G. C. (2004). Rural School Facilities: State Policies that Provide Students with an Environment to Promote Learning. Rural Trust Policy Brief Series on Rural Education, June 2004.
- McConnell, S. R., Odom, S. L. (1999). A Multimeasure Performance-Based Assessment of Social Competence in Young Children with Disabilities. *Topics in Early Childhood Special Education*, 19(2), 67-74.
- McEvoy, J. (1992). An evaluation of simple games as a method of teaching counting to children with a moderate mental handicap. *European Journal of Psychology of Education*, 7(3), 181-190.
- McLean, M. E., Odom, S. L. (1993). Practices for young children with and without disabilities: A comparison of DEC and NAEYC... *Topics in Early Childhood Special Education*, 13(3), 274-292.
- McWilliam, R. A., Tocci, L., Harbin, G. L. (1995). Services are child-oriented and families like it that way-but why? Unpublished manuscript, Early Childhood Research Institute, University of North Carolina, Chapel Hill, NC.



- (1991). Medicaid Coverage of Health-Related Services for Children Receiving Special Education: An Examination of Federal Policies.
- Mikesell, C., Fortune, J. (2004). Report on DDD Child State Respite, October 1, 2004.
- Mikesell, C., Fortune, J., (). Report on DDD Children's Waiver Program
- Mikesell, C., Fortune, J. (). Report on Early Intervention and Education Program, DD Preschools
- Mills, P. E., Cole, K. N. (1998). Effects of differing levels of inclusion on preschoolers with disabilities. *Exceptional Children*, 65(1), 79-90.
- Mitchell, Melissa, Ed.; *Money Matters. Federal Financial Support for Special Education: What's the Right Formula? A Project ALIGN Issue Brief*. 1996
- National Early Intervention Longitudinal Study (n.d.) *The National Early Intervention Longitudinal Study home page*. Retrieved October 3, 2005, from <http://www.sri.com/neils/reports.html>.
- Nittrouer and Burton (2002)
- Odom, S. L., Strain, P.S. (2002). Evidence-based practice in early intervention/early childhood special education: single-subject design research. *JEI*, 25(2), 151-160.
- Odom, S. L., Haring, T. G. () Contextualism and applied behavior analysis: Implications for early childhood education for children with disabilities.
- Odom, S. L., Wolery, M. (2003). A Unified Theory of Practice in Early Intervention/Early Childhood Special Education: Evidence-Based Practices. *Journal of Special Education*, 37(3), 164-173.
- Odom, S. L., et al. (1995). Recommended Practices in Early Childhood Special Education: Validation and Current Use. Feature Article. *Journal of Early Intervention*, 19(1), 1-17.
- Odom, S. L., Hanson, M. J., Lieber, J., Marquart, J., Sandall, S., Wolery, R., Horn, E., Schwartz, I., Beckman, P., Hikido, C., Chambers, J. (2001). The Costs of Preschool Inclusion. *Topics in Early Childhood Special Education*, 21(1) 46-55.
- Odom, S. L., Horn, E. M., Marquart, J. M., Hanson, M. J., Wolfberg, P., Beckman, P., Lieber, J., Li, S., Schwartz, I., Janko, S., Sandall, S. (1999). On the Forms of Inclusion: Organizational Context and Individualized Service Models. *Journal of Early Intervention*, 22(3), 185-199.
- Odom, S. L., McConnell, S. R., McEvoy, M. A., Peterson, C., Ostrosky, M., Chandler, L. K., Spicuzza, R. J., Skellenger, A., Creighton, M., Favazza, P. C. (1999). Relative Effects of Interventions Supporting the Social Competence of Young Children with Disabilities. *Topics in Early Childhood Special Education*, 19(2), p75-86.



- Odom, S. L., McConnell, S. R. (1994). Acceptability and feasibility of classroom-based social interaction interventions for young... *Exceptional Children*, 60(3), 226-236.
- Odom, S. L., McLean, M. E. () Early Intervention/Early Childhood Special Education: Recommended Practices.
- Odom, S. L., McLean, M. E. () Establishing Recommended Practices for Programs for Infants and Young Children with Special Needs and Their Families.
- Odom, S. L., Parrish, T. B., Hikido, C. (2001). The Costs of Inclusive and Traditional Special Education Preschool Services. *Journal of Special Education Leadership*, 14(1), 33-41.
- Odom, S. L. (2000). Preschool Inclusion: What We Know and Where We Go From Here. *Topics in Early Childhood Special Education*, 20(1), p20-27.
- Odom, S. L., Strain, P.S. (1986). A comparison of peer-initiation and teacher-antecedent interventions for promoting reciprocal social interaction of autistic preschoolers. *Journal of Applied Behavior Analysis*, 19(1), 59-71.
- Odom, S. L., Strain, P. S. (2002). Evidence-Based Practice in Early Intervention/Early Childhood Special Education: Single-Subject Design Research. *Journal of Early Intervention*, 25(2) 151-160.
- Odom, S. L. (1981). The relationship of play to developmental level in mentally retarded, preschool children. *Education & Training of the Mentally Retarded*, 16(2), 136-141.
- Okagaki, L., Diamond, K. E. (2000). Responding to Cultural and Linguistic Differences in the Beliefs and Practices of Families with Young Children. *Young Children*, 55(3), 74-80.
- Olson, 1972; Yoshinaga-Itano et al, 1998
- Parrish, T. B., Verstegen, D. A. (1994). Policy Issues and Alternatives. Fiscal Provisions of the Individuals with Disabilities Education Act. Policy Paper Number 3.
- Peterson, C. A., McConnell, S. R. (1993). Factors affecting the impact of social interaction skills interventions in early childhood special education. *Topics in Early Childhood Special Education*, 13(1), 38-56.
- Piscitelli, V. (2000). The effects of an integrative preschool program on the language development and social competence of children with disabilities. *Dissertation Abstracts International Section A: Humanities & Social Sciences*, 61(6-A), 2179.
- Pivato, E., Chomicki, S. (1986). The GRIT kids start school, *Entourage*, 1(3), 6-10.
- Preschool Special Education. Research & Resources on Special Education: Issue V.



- Rafferty, Y., Boettcher, C. () Inclusive Education for Preschoolers with Disabilities: Comparative Views of Parents and Practitioners.
- Rafferty, Y., Piscitelli, V., Boettcher, C. (2003). The Impact of Inclusion on Language Development and Social Competence among Preschoolers with Disabilities. *Exceptional Children*, 69(4), 467-479.
- Roberts, Behl, & Goetze, 2005
- Roberts, R. N. (1995). Annual Report: Best practices for home visiting with families of children with special health needs (# HRSA 93-410[P]). Rockville, MD: Bureau of Maternal and Child Health and Resources Development.
- Roberts, R. N., Innocenti, M. S., Judd, D. R., Taylor, M. J., Morris, C. (1998). Family satisfaction with transition from infant toddler (Part C) to preschool (Part B) services. *CPD News*, 21(3), 1-8.
- Roberts, R. N., Rule S., Innocenti M. S. (1998). Strengthening the family-professional partnership in services for young children. Baltimore, MD: Brooks.
- Rosenberg, S., Clark, M., Finkler, D., Filer, J., Robinson, C. () Project Participate Final Report, September 1985-August 1988.
- Rule, S., Tso, M. () Using Constant Time Delay To Teach Preventative Safety Skills to Preschoolers with Disabilities. Final Report.
- Sainato, D. M., Strain, P. S. (1993). Increasing Integration Success for Preschoolers with Disabilities. *Teaching Exceptional Children*, 25(2), 36.
- Schorr, L. (1994). Shifting to outcome-based accountability: A minimalist approach for immediate use. Washington, DC: National Alliance for Restructuring Education and the Improved Outcomes for Children Project.
- Schweinhart, et al., 2005
- Seery, M. E., Davis, P. M., Johnson, L. J. (2000). Seeing Eye-to-Eye: Are Parents and Professionals in Agreement about the Benefits of Preschool Inclusion? *Remedial and Special Education*, 21(5), 268-278, 319.
- Sewell, T. J., Collins, B. C., Hemmeter, M. L., Schuster, J. W. (1998). Using Simultaneous Prompting within an Activity-Based Format to Teach Dressing Skills to Preschoolers with Developmental Delay. *Journal of Early Intervention*, 21(2), 132-145.
- Sexton, D., et al. (1988). Criterion-Related Validity of a New Standardized Developmental Measure for Use with Infants Who Are Handicapped. *Measurement and Evaluation in Counseling and Development*, 21(1) 16-24.



- Shearer, M. S., Mori, A. A. (1987). Administration of Preschool Special Education Programs: Strategies for Effectiveness. *Journal of the Division for Early Childhood*, 11(2) 161-170.
- Skinner, M. L., Buysse, V., Bailey, D. B. (2004). Effects of Age and Developmental Status of Partners on Play of Preschoolers With Disabilities. *Journal of Early Intervention*, 26(3), 194-203.
- Smith, T., Eikeseth, S., Klevstrand, M., Lovaas, O. I. (1997). Intensive Behavioral Treatment for Preschoolers with Severe Mental Retardation and Pervasive Developmental Disorder. *American Journal on Mental Retardation* 102(3) 238-249.
- Spooner, F., Browder D. M. (). Scientifically Based Research in Education and Students with Low Incidence Disabilities. *Research-and-Practice-for-Persons-with-Severe*
- Strain, P. S., Odom, S. L. (1986). Peer social initiations: Effective intervention for social skills development of exceptional children. *Exceptional Children*, 52(6), Special issue: In search of excellence: Instruction that works in special education classrooms. 543-551.
- (1994). Study of Special Populations: Native American Students with Disabilities. Chapter 7.
- Sung, A., Sartain, M., et al. (2000). Results from Lewis Little Folks, NAEYC Open-Ended Family Survey.
- Tarr, J.E., Barnett, W.S. (2001). A cost analysis of Part C early intervention services in New Jersey. *Journal of Early Intervention*, 24(1), 46-55.
- Tschantz, J. (2002) *Funding Formula and the Fiscal Provisions for Part B: A Policy Analysis*.
- Venn, M. L., Wolery, M., Werts, M. G., Morris, A., et al. (1993). Embedding instruction in art activities to teach preschoolers with disabilities to imitate their peers. *Early Childhood Research Quarterly*, 8(3), 277-294.
- Wilson, D. (2003). To Compare is Human: Comparison as a Research Methodology. *Education & Society*, 21(3), 5-18.
- (2005) Wyoming Department of Administration & Information, Economic Analysis Division; Inflation Tables. Retrieved September 29, 2005, from EADIV Home Website: <http://eadiv.state.wy.us/wcli/inflation.pdf>
- Wyoming Special Education Expenditure Project and Cost Based Funding Model: Final Report November 12, 2002
- Wolery, M. (1991). Instruction in early childhood special education: `Seeing through a glass darkly...knowing in... *Exceptional Children*, 58(2), 127-135.
- Zahr, L. (1994). An integrative research review of intervention studies with premature infants from disadvantaged backgrounds. *Maternal-Child Nursing Journal*, 22(3), 90-101.