Costs of Preschool Education in Mexico

Constructing cost estimates at the center level: An Experiment

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October 2008

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Funding for this project was provided by the World Bank

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ACKNOWLEDGEMENTS

The World Bank provided the main support for this study, with funds from DFID.

The preschool staff in the state of Oaxaca kindly provided access to schools there in spite of continuing political turmoil. We are particularly grateful to Norma Andrea González Ortega, Head of the Department of General Preschool Education, Margarita López Toledo and Plutarco Cortés Quintas, Director of Indigenous Education as well as to teachers Martina Ventura, Martina Pascual Cuate and Hortensia López Martínez in that department. We appreciate also the help of Ana Carolina Peña de CIESAS who helped make necessary contacts in Oaxaca.

In Puebla, we are indebted to Aida Escalante Rodríguez, Director of Preschool Education and to María de la Paz Merino y Edna Torres as well as to the Sub-secretary of Education.

In the State of Mexico, Martín Piña Nava graciously provided access to the CONAFE preschools.

Thanks are due to the following people who carried out the field work and provided us with most of the basic information needed to estimate costs: Elena Villacaña, Lucia Alvarez, Brenda Flores, Wendolyn Marquez Porras, Edgar Flores, Virginia Vieyra Sánchez, Jehu Israel López, Giovanna Escobar Mota, Tania Costa Luna, Carlos Castro, Marisol Parras López.

The study could not have been done without the cooperation of the directors and teachers in the preschools visited and the parents who agreed to be interviewed.

INTRODUCTION

The problem

It is useful to know what it costs to educate students at various levels and in various programs. Knowledge of costs is essential for budgeting and planning. Costs serve as a basis for cost-effectiveness or cost-benefit studies. Nevertheless, systematic studies that calculate (or better said, estimate) and analyze costs are infrequent and most such studies are narrowly conceived. The following are characteristic of most cost studies:

- They do not try to estimate total costs. Rather, they are based on budget analyses and look only at the costs that are covered specifically by the public or private entity responsible for administering the educational system or program being considered.

- Studies rarely include costs of resources used in educational institutions that are covered by direct payments or through donations of materials or time made by families, communities and others who are not directly responsible for operating the institutions. (In Mexico, the Constitution says that public education should be free but it is common knowledge that parents have to contribute. Less well known is the size of their contributions.)

- Most studies are used for budgeting and planning and occasionally for cost-effectiveness analysis. Rarely are they used to identify inequities in an educational system despite the lingering notions that better education probably costs more, that there are huge differences in the resources available to different schools, programs and educational sub-systems and that we should try to reduce inequities, including those related to the distribution of resources.

- Costs are rarely related to the quality of the education provided. When that is done, the relationship is to educational outcomes but not to processes. The quality of educational processes is often assumed to be determined by the level of costs or expenditures despite evidence that the relationship is far from perfect.

This study aspires to complement traditional cost analyses by:

- estimating costs at the level of individual preschool centers, rather than at the system or program level.
- estimating total costs at the center level, including costs that are covered by families and communities and other sources.
- looking at differences in costs across centers to see how much of a gap exists between centers in the same sub-system and centers in different sub-systems.
- relating costs to evaluations of quality carried out in the same centers, with quality defined by a set of indicators that includes not only the availability of

resources but also how well a school is managed, teaches and relates to families and communities.

These aspirations, held when beginning the study, have outrun our ability to deliver fully the results we had hoped for. Difficulties can be summarized as follows:

1. The process of constructing costs at the center level proved to be more complicated than we imagined. It is not possible to estimate costs by formula. Collecting all the data needed to do a precise job was difficult particularly in light of the variations among centers in the kinds of costs incurred, the accounting systems (or lack of them) and discontinuities in the school staff.

2. The correct prices that should be applied to various cost components are not always clear; assumptions were necessary that we think are reasonable but occasionally represent a bit more art than science.

3. Administrative difficulties prevented us from entering schools in the Federal District. We could not, therefore, estimate costs there. We cannot know whether these are the most expensive schools in the public system or whether large class sizes that are so typical of those schools result in lower costs per student. We cannot relate these costs to the quality of the schools, some which had the highest quality ratings among preschools in the study.

4. The centers in Oaxaca that were part of our sample had been inactive for six months during the previous year playing havoc with the regular processes of teaching as well as organizing and funding preschool education there. We do not know how that may have affected our cost estimates in Oaxaca.

5. A robbery in which raw data were taken incidentally made it impossible to capture and analyze information from two of the more interesting cases in the study, one an urban, privately-run, community-based school and the other a preschool run by the family welfare system.

Despite these challenges, we feel we have, in this experiment with costing at the level of individual schools, been able to make a useful advance toward specifying and analyzing costs of preschool education in Mexico. We have learned a great deal along the way and will share those lessons in this document. We hope that this work will serve as a basis for refining and extending the study of costs of preschool centers. And, we are able to report results that we hope will be suggestive, provoke debate, have implications for policy and planning and serve as a basis for future studies.

Antecedents

This study grew out of work that began in 2001 in the Inter-sectorial Project on Indicators of the Well-Being of Children under Seven Years of Age in Mexico.[1] That Project included a working group on indicators of the quality and equity of preschool education which not only defined indicators but developed a scale of educational quality for application in Mexican preschools. Over several years, that scale was refined and used to look at preschools in several research projects and program evaluations (Myers and Martinez, 2008).

One of the first studies of preschool educational quality using the scale was carried out during the 2002-2003 school year in a sample of 40 preschools in four Mexican states.[2] These schools were chosen for their variety in terms of their location in urban and rural areas, the social, economic and cultural background of the students, the administrative responsibility for managing the preschools and the type of preschool.

In 2006, an opportunity presented itself to return to those 40 preschools with the intention of examining the impact on quality over four years of various educational reforms that had occurred during the period. Although estimating costs had not been part of the original study[3], it seemed logical to take advantage of the new study to look at several aspects of preschool education including costs and their relationship to educational quality. Accordingly, this study of costs is one of a group of five studies:

1. Preschool quality and the impact of preschool reforms.
2. Competencies of preschool children.
3. Case studies of social participation in four preschools.
4. The transition into primary school from preschool.
5. A study of the costs of preschool education and of who bears the costs.

The first three studies were carried out during the 2006-2007 school year; the field work for the costs and transition studies in 2007-2008 when we again returned to the 40 original preschools.

[1] This Project brought together representatives from divers governmental institutions such as SEP, CONAFE, DIF, SSA, CONAPO, INEGI, SEDESOL, IMSS, ISSSTE e IMSS- SOLIDARIDAD. Also participating were people from universities such as UNAM, and UPN, as well as international organizations (UNICEF, UNESCO) and non-governmental organizations (COMEXANI, CAPYS, IAP, Cristal House de México, ACUDE, FAI). The coordination of resided in the Dirección General de Planeación, Programación y Presupuesto de la Secretaría de Educación Pública (SEP) and with Erika Valle, one of the authors of this report. Work was carried out between 2001 and 2006

[2] Myers, Martinez and Linares, 2003.

[3] The working group on the quality and equity of preschool education did not look at educational costs even though one of the indicators suggested for looking at equity was to look at how equitably resources are distributed in the system.

Organization of this document

We begin in Chapter 1 by putting the study in context for readers who are not particularly familiar with the current state of the Mexican educational system or with preschool education in Mexico. Chapter 2 presents a brief review of pertinent literature, setting the base for the methodology to be applied for estimating costs in this study. Chapter 3 describes the objectives, methodology, sample and organization of the field work. We present research results in Chapter 4. The final chapter is devoted to conclusions and some implications.

I The Study in Context

The purpose of this chapter is to put the study of preschool costs in context by providing some basic information to the reader who may not be familiar with the current Mexican educational system or, more specifically, with preschool education in Mexico. It is not our intention to be exhaustive or overly analytical in this presentation. We begin with a rough sketch of changing conditions in Mexico that have affected the way education is perceived, implemented and paid for. Next is a brief description of current educational policy and practice, emphasizing preschool education. We conclude the chapter with tidbits of information about the costs of preschool education in Mexico gleaned from national and international sources.

Mexico in transition

Important demographic, economic, social and political changes have been occurring in Mexico over the last few decades that have had important implications for education and, more particularly for preschool education.

Demographic changes. External and internal migration has been pronounced, creating various problems for the educational system. First, it has resulted in a concentration in cities (75% of the population is now found in "urban" areas with more than 2,500 people). Logistically, this progressive concentration of the population could make the delivery of services easier and less costly. At the same time, depopulation of rural areas has resulted in an increase in the number of small and isolated communities that are difficult to reach, potentially increasing costs of services aimed at reducing educational inequities.

The increase in internal temporary migration for work has created difficulties for the educational system. In some cases the father is absent for long periods creating pressures at home that may affect attendance, behavior or outcomes. In others, the children migrate with the family creating discontinuities in school attendance and requiring new and innovative programs at work sites. For the most part this problem is related to agricultural migration but also appears when women migrate to work in assembly line companies in the North. This phenomenon also raises questions about how (or whether) private companies should share the costs of education.

In this study we included in the sample preschools in isolated areas as well as in urban areas.[4] We have not included a preschool center for children of migrant workers.

Another demographic transition is evident in the birth rate which has fallen rapidly since the 1970s. As a result, the absolute number of children under 6 has dropped slightly each year. This means a real reduction in the demand for preschool education and more

[4] As indicated earlier, we could not enter public schools in the Federal District. We do, however, have information for a limited number of preschools in the city of Oaxaca.

easily allows real increases in enrolments. It also means there are fewer families with large numbers of children; this increases the possibility that all children will be able to attend school, even in poorer families because the potential cost of education to families is reduced.

Economic changes. Economic adjustments related to globalization have affected Mexico which, since the 1980s has pursued a "neoliberal" economic policy. Among the results of that policy are: 1) reduced inflation with slow and fluctuating economic growth punctuated by moments of crisis, 2) a high level of poverty and extreme poverty despite important poverty reduction programs,[5] seriously affecting the capacity of millions of families to feed, protect and educate their children, 3) continuation of a highly unequal income distribution (the richest 10% of population controls 60% of the income[6]), 4) high levels of informal employment and under-employment (some estimates indicate that 50% or more of the labor force is in the informal sector).

A relatively low level of growth combined with a low level of tax revenues produces a low level of public revenues. Although Mexico spends a relatively high level of its budget on education this amount is not great in absolute terms. This, in turn, places additional burdens on families, many with very few resources,

Social and cultural changes. The demographic and economic tendencies noted are accompanied by important changes in the structure and functioning of families. As in other countries, the extended family is giving way to the nuclear family, with an increase also in the percentage of women-headed households who are often single mothers.

Female participation in the labor force has increased, stimulated by economic need, increases in education levels, reductions in fertility and changes in women's perceptions of themselves, their roles in society and the value of their time. The current 35% participation figure is more than double that of 1970. In large urban areas and in certain age groups the percentage is closer to 50 per cent. Women's paid work has helped families cover educational costs for their children; however, the majority of working women still earn less than two minimum salaries. [7]

Political transition. In 2000, victory by the opposition broke a 70-year monopoly of continuity and control by the ruling party. The change was heralded as consistent with a broader tendency toward transition toward democracy in Mexico which included a shift away from an all-powerful executive and toward a more important role for the legislative and judicial branches of government. In 2006 the same party that won in 2000 was returned to power in a hotly contested and controversial election in which the votes of teachers played an important part, leading to increased demands made from a position of power.

From this complex and still incipient process of political transition at least two policy directions merit emphasis. The first is a greater emphasis with the recent governments, at least at a rhetorical level, on educational quality and equity as main

[5] La Jornada, 1 de agosto de 1998
[6] Mejía y Monroy, p. 24.
[7] ENIGH, 2003, second trimester.

considerations in public policies and programs.[8] It is important therefore to explore the relationship among costs, quality and equity.

A second element that has gathered force as part of the political transition has been attention to public accounting and transparency. We consider this study of costs as a small contribution to the process of improving public accounting and transparency.

Current Educational Policy and Practice

According to the Mexican Constitution, education is to be public, laic and freely available. As will be evident from this study, education is not totally without cost to families and the relative contributions that parents make to the operation of public institutional services varies significantly.

Although the educational system is decentralized administratively (as of 1993 for basic education), the federal government maintains control over financing, curriculum development and evaluation.

The National Union of Educational Workers (SNTE) has been a powerful force in education for many decades, vestige of a corporate state that has not yet made the full transition to democracy.[9] It has an important effect on the costs of education, not only mainly because of its ability to negotiate salaries and benefits (a major component in the budget. With the bid by Union leadership to become more actively involved in setting the national educational agenda and program and to use its power to control the educational bureaucracy, major frictions have developed within the Union.

The government that began its six-year period in 2000 proposed creation of a new educational system based on a qualitative change (SEP, 2001) that would include 1) placing the classroom and school in the center, 2) democratizing the educational system, 3) improving social participation, 4) strengthening federalism and 5) emphasizing quality with equity. Many elements of this program have been picked up by the incoming government in 2006 which promised an educational transformation built around six priorities: 1) education of quality; 2) equitable education; 3) scientific and technological education; 4) integrated education; 5) education for sustainable human development and competitivity; and 6) democratic education. The program says little about financing or costs.

A series of major reforms proposed by the teachers´ union have found their way into the Education Sector Program, 2007-2012 alongside several new initiatives from the SEP and from there into the proposals presented by a controversial Alliance for Educational Quality between the Union and the SEP. These proposals deal with such topics as a reform of national evaluation, reformed criteria for hiring teachers, an incentive scheme for

[8] The National Education Program for 2001-2006 was titled "Toward Education of Good Quality for All; An Educational Focus for the Twenty-First Century" and the program for 2007-2012 takes "Quality with Equity" as a major heading. The agreement between the Secretary of Education and the leaders of the Union is titled the Alliance for Educational Quality.

[9] At present the Union has a favored place as a result of delivering crucial votes at the time of the election of the present President.

teachers linked to student outcomes and the creation of a set of national standards. Several proposals made to upgrade the teaching profession imply very large, and probably unrealistic, expenditures by the federal government.

Preschool Education in Mexico

Preschool educational services in Mexico are varied. Approximately 15% of the 4,739,200 children enrolled in 2006-2007 are in private preschools (Poder Ejecutivo. 2008), some for the middle and upper income groups, others community preschools catering mainly to lower-income urban groups. Most public preschools are operated by the Secretary of Education (SEP), but some are administered by: Family Welfare (DIF), and the Social Security System (as an add-on to child care), as well as by semi-autonomous entities of the government, universities, the prison system and others. There are three main service lines: 89% of the students are enrolled in "general" preschools which may be in urban or rural areas. Another 8% are in a system of "indigenous" education and the remaining 3% are in "community" preschools run by the state, by the National Council for Promoting Education, by Family Welfare or by community groups (Ibid.).

Consistent with the changing times, greater recognition has been accorded in recent years to preschool education in Mexico. Although preschool enrolments began to expand in the 1970s, preschool education in general was not given much attention. However, in November 2002, the General Education Law was changed to make preschool education obligatory, for children ages 3, 4, and 5, and a timetable was set for universalizing participation at the three ages by the beginning of the 2008-2009 school year (a goal that has not been reached because a high percentage of 3-year olds are still not enrolled). The new law not only made obligatory the provision of services by the state, it also made parents responsible "to make sure that their children attend public or private schools to obtain a preschool education" (Poder Ejecutivo 2002, p. 2).

In part, the new recognition of preschool education, evident in the revised law, reflected a worldwide tendency fueled by accumulating evidence from a variety of academic disciplines and evaluations of programs that the early years are critical in the formation of intelligence, personality and social behavior. Indeed, Mexico became part of this global process by signing a number of international agreements beginning in 1990. [10] In part it was a product of national politics and the search by a "transitional" government to do something new.

But whatever the motivation behind obligatory preschool education, the initiative brought with it large logistic and financial challenges related to meeting coverage goals while maintaining and improving quality. Where would the funding come from? Who would bear the additional costs? Would additional burdens be put on parents?

[10] These included: The Convention on the Rights of the Child (1990); The Declarations of the World Conferences on Education for All (Jomtien 1990 and Dakar 2000) and the World Summit for Children (1990 and the special session on children of the United Nations. Each of these included a process to monitor and follow-up progress toward complying with the promises set forth in the documents.

At the same time, during the six-year period from 2000 to 2006, other initiatives were underway that were to benefit preschool education. A major preschool educational reform was undertaken and a new curriculum was made official in 2004. A Schools of Quality Program brought modest new funding directly to voluntarily participating schools as the program was moved downward from primary school to preschool.[11]

As a result of these activities, preschool enrolment increased rather dramatically (30%) during the period from 2002-3 to 2006-7, as shown in Table 1. At present, enrolment is near 100% for children age 5 and above 88% for children age 4. During the period, the share of private preschool education increased from 10% to 15%.

Table 1. Enrolment, Preschool Education in Mexico, 2000-2001 a 2006-2007*

School Year	Enrolment	Change
2000-2001	3,423,600	
2001-2002	3,432,300	0.3%
2002-2003**	3,635,900	5.9%
2003-2004	3,742,600	2.9%
2004-2005	4,086,800	8.4%
2005-2006	4,452,200	8.9%
2006-2007	4,739,200	6.4%

* Official data taken from national education censuses, reported in: SEP 2008.
** School year in which obligatory preschool education began.

Enrolments have increased and new programs are in place but there seems to have been little effect on quality over the last five years. One study (Martínez and Myers 2008) suggests that the effect may even have been slightly negative, particularly with respect to the educational process, a result of increasing class sizes and of difficulties encountered in adjusting quickly to a new curriculum. The system continues to operate at a minimum level of quality, with huge variations among individual schools and lesser but still large differences among sub-systems, with rural and indigenous preschools lagging, together with urban preschool programs operated by social welfare.

This study will relate per student costs to quality and, we hope, will help to understand who is bearing the costs of these legal and program changes by looking at total costs at the level of individual preschool centers.

Costs and Financing of Education in Mexico

The national budget in Mexico is proposed by the Executive branch of government; the legislature debates, adjusts and approves the budget, taking a much more active role in recent years in this process. According to the latest statistics published by the Organization

[11] By way of contrast, the national education program for 2007-2012 pays almost no attention explicitly to preschool education. Rather, at the time of this writing, the system is experiencing tensions related to the Alliance which is not accepted by an important segment of the union.

for Economic Cooperation and Development (OECD 2008), Mexico spends the highest percentage of its total budget on education of any OECD member country, 23. 4% in 2006.[12] Educational expenditures as a percentage of Gross Domestic Product also compare favorably, 6.9%. The down side of these statistics has to do with the relatively low level of the overall Mexican budget, in part a result of its inability to collect taxes at a significant level.[13] Accordingly, the per student expenditures for education at all levels places Mexico in last place among all OECD countries. (Ibid.)

States are heavily dependent on central government funding. The sources of educational funding are divided in the following manner:

Federal funding from the regular budget	62%
Funding from state and municipal sources	16%
Private funding	22%

States have relatively few sources of revenue they can call their own. They receive funds from the federal government to cover costs associated with the administrative decentralization according to a formula but influenced by individual negotiations between the state and federal government, a thoroughly outmoded system according to some experts. It is difficult to know with any precision what states really provide for education because some of the federal funding to states is not earmarked. Delays in the flow of funds are common.

Costs and financing of preschool education in Mexico

Obtaining solid information about costs and financing is difficult. Our two main sources for the tidbits of general information available about costs of preschool education in Mexico are: 1) the Annual Report of the President which contains appendices with cost information (SEP 2007) and 2) Education at a Glance published each year by the Organization for Economic Cooperation and Development (OECD 2008). These two sources do not present the same figures because different criteria are used for calculating costs. In addition, the most recent Annual Report available (SEP 2008) presents statistics for the 2006-2007 school year whereas the OECD figures are for 2005-2006.

Costs per student per year. According to the Annual Report of the SEP (2007), the expenditure per child per year at the preschool level is 11,100 pesos for the 2006-2007 school year. This translates into approximately 1,047 US dollars. However, according to the OECD figures, the expenditures per child per year at the preschool level is double that reported in the SEP's Annual Report, 2,045 dollars. This compares with an average for

[12] This includes subsidies to parents as well as institutional expenditures.
[13] Tax revenue as a percentage of Gross Domestic Product in Mexico is only 4.7%, as compared to, for instante 29.5% in Denmark which is the highest of the OECD countries in this category.

OECD countries of US$7,528. This discrepancy shows how difficult it is to pin down a specific cost estimate.[14]

If one looks at the costs per student only of teachers´ compensation, Mexico's ratio is low because, although teacher's salaries are relatively high in relation to the GDP, the class sizes are also high. There is a trade off between teacher compensation and class size.

Although specific information could not be found for preschool education, the OECD figures for primary school indicate that over 90% of the costs of education in Mexico are costs of teacher compensation. When 6 or 7% for other operational costs are added in, that leaves very little for investment. In general, teachers are paid well in Mexico. According to the OECD statistics, primary school teachers with 15 years of service receive a salary that is 1.5 times the GDP per capita, placing compensation above the 1.28 average for OECD member states. There is reason to believe that these patterns are similar for preschool education.

Education at a Glance (2007) calculates a ratio of budget allocation to number of students by level. For preschool, the budget allocation was 10.3%, a figure that comes close to the 12.3% share of preschool enrolment in total enrolment. This would suggest, somewhat naively, that preschool is receiving a bit less than "its share" according to the number of students enrolled. This is not surprising in light of the fact that the per student cost for university education is three times the per student cost for preschool education. Nevertheless, it is extraordinary for a Latin American country to devote more than 10% of its educational budget to preschool education suggesting that Mexico has made an important financial commitment to education at this level.

With this brief descriptive background of the Mexican context for the study, we turn now to examine the literature on costing and on preschool costs in Mexico and other relevant studies done elsewhere.

[14] It does not seem possible to account for the difference in terms of an adjustment made for purchasing power parity or an adjustments associated with a one-year difference in the time when the information was collected. Although we have tried to explain the difference, taking into account the information supplied by OECD about how their calculation was made we have not been able to come up with a satisfactory explanation. The most probable explanation is as follows. It is our understanding that the figures presented by SEP are calculated only for Federal funds used at the center and dispersed to the states to cover decentralization. No independent state funds are included. No parental contributions are included. However, it seems that OECD has made an attempt to include both federal and state expenditures as well as contributions from families derived from responses to questions on the annual educational survey.

II Theoretical and Practical Bases for Estimating Costs[15]

We have used the word "estimate" in the title of this chapter rather than "calculate" or "measure" or "determine" because the process involves a variety of assumptions and choices about how to value resources that makes it difficult to say with finality that THE cost of Program X or of center Y is a certain amount. As will be evident from this study, the process of costing is complicated, even at the level of individual centers where one does not have to worry about differences in purposes or characteristics of disparate models. It is probably not an exaggeration to say that existing cost studies, including this one, have often included an important element of art as well as of science.

At the outset we should emphasize that, in this study, we are dealing with institutional costs; that is to say the costs incurred by educating children in an institutionalized preschool program occurring outside the home. We will not include in our cost estimates those costs incurred by families to educate their children in the home (purchase of toys, visits to museums, etc.).

Purposes

As suggested in the introduction, the main purpose of this study is not to provide figures for use in a budgeting or planning process, although results may be helpful in those processes. Nor will we try to carry out a cost-effectiveness or cost-benefit analysis. Rather, our concern is more closely linked to a process of monitoring and public accounting. By looking at total costs and their distribution for individual centers we expect to be able to see how costs vary at local levels within the same program model and/or across program models, in terms of the total costs, the distribution of costs among cost categories and who bears the costs.

Looking at costs for individual centers should help to identify variations that may be indicative of inequalities linked to particular geographic circumstances or to social or cultural differences and discrimination. Studies with this purpose for estimating costs are rarely found in the literature (see below). Inequity may be evident in differences in the relative amount of resources that different groups actually receive. Or, inequity may result from the way in which different groups are asked to participate in covering costs (for instance, a disadvantaged rural population may be asked to contribute relatively more – in money, time and kind – to financing a program than more privileged urban participants). Here a first step is calculating costs and a second step is seeing how the burden of sharing these costs is distributed.

How are costs defined and estimated?

Theoretical considerations. In this study, "cost" is defined as the value to someone (individual, organization, government, society at large) of something (resources) used to achieve (transform) something (outcome).

[15] This chapter draws heavily on previous work by one of the authors. See Myers 2008.

From this definition it is clear that an estimate of costs depends on whose point of view is taken when making the estimation. For instance, if the point of view is that of a government, costs to individual participants in a program may be left out because they are not of immediate interest; officials may want only to know what the charge will be to the governmental budget. This means that costs of a program to society at large would be underestimated. This narrow approach, linked just to a governmental or organizational viewpoint, may be shortsighted and even misleading but is common. It fails to recognize the contributions of others to program operations and to outcomes. The approach taken in this study is to think in terms of total costs, i.e., costs of all aspects of a program regardless of who bears those costs.

How will costs be valued? The above definition of costs falls short because it does not give one a basis for how to value resources. We follow Levin and McEwan (2001) who, in their book on cost-effectiveness provide a base for valuing resources with the following explanation of costs:

> "Every intervention uses resources that can be utilized for other valued alternatives. For example, a program for raising student achievement will require personnel, facilities and materials that can be applied to other educational and non-educational endeavors. If these resources are used in one way, they cannot be used in some other way that may also produce useful outcomes. The human time and energy, the buildings, materials and other resources used in one endeavor have other valuable uses. By devoting them to a particular activity, we are sacrificing the gains that could be obtained from using them for some other purpose.
>
> "The value of what is given up or sacrificed represents the cost of an alternative. Accordingly, *the "cost" of pursuing the intervention is what we must give up by not using these resources in some other way.* Technically, then *the cost of a specific intervention will be defined as the value of all the resources that it utilizes had they been assigned to their most valuable alternative use.* (p. 44)

But, from this theoretical posture, how will we actually place values on resources used in a program? For most "ingredients" (see below) we will assign a value in terms of the price the resource as it is bought and sold in the market. For instance, for paper and pens and pencils or cleaning materials the price is set in a relatively competitive market and the best alternative use of the resources is essentially the same as their use in a preschool. It will, however, be necessary to calculate "shadow prices" for some resources including the cost of donated buildings or equipment, volunteer labor, underpaid para-professionals in a community school, the time of parents spent in school meetings or parental education courses, or of books produced by the government, that are provided "free of charge" to all preschools in a national program in a process where there is no competitive pricing of the books.

From the above, it should be clear that to estimate costs requires a careful and clear definition of all the resources are that are actually being used in a program and of how they are being used, regardless of who provides the resource, so they can be valued in the most appropriate way. Once that has been done, either a market price can be assigned or, when market prices are not available or are distorted, evaluators can assign values based on "shadow" prices that are thought to express the real value of the resource as used in the program.

Operationalizing estimates. As a starting point for estimating costs, we will look at the following "ingredients" of a preschool program.

1. **Personnel** (Administrators and clerical staff, those who attend directly to children – who may be teachers, doctors, assistants, nurses, promoters, depending on the program – and those who provide periodic support such as supervisors, cooks, maintenance personnel). It is particularly important to be as precise as possible with the estimates of personnel costs because they often constitute the bulk of the costs of any program. In addition to the value of the salaries *and benefits* that staff receive, personnel costs will be affected by differences in the qualifications of personnel (with more qualified personnel presumably demanding higher pay) and by the number of hours that the personnel work.

The estimate of the cost of paid personnel will normally be the actual expenditure on salaries and benefits which, taken together, usually reflect the market price for these items. For volunteers who do not get paid, however, estimates need to be made of the value of their contribution depending on the kind of work they are being asked to do. In cases where the work does not demand particular qualifications, the minimum salary or the lowest salary of a paid para-professional within the system is often used to value this component. The costs of health personnel, supervisors, special teachers will need to be prorated for each center depending on the time they are providing service to the center.

The same treatments mentioned above will be appropriate for administrative personnel who work at a general level in a program's district or head office rather than in face-to-face implementation with children or parents or communities. At the level of a center the general administrative costs can be handled in one of two ways; either they are treated as general costs to the system that are not relevant to costing education at the center level or they would be pro-rated. We have chosen the first option. When general administrative costs are prorated over the large number of individual centers in a system the cost associated with an individual school is extremely low.

2. **Infrastructure** (Buildings/facilities; equipment[16]) The cost of infrastructure Will be valued differently depending on whether it is owned (constructed or purchased by those who operate the program so that it is part of the capital that an organization has on hand), rented or donated. If buildings and equipment are owned (whether by the government or privately), the value needs to be 1) prorated over the estimated life of the item taking into account the possible best alternative uses of the buildings or equipment or

2) estimated by using what it would cost to rent or lease something similar (see Levin and McEwan, chapter 4). If rented, the actual rent paid might be used, assuming it is in line with the market price for renting something similar. If donated facilities or equipment need to be valued the solution is probably to use what it would cost to rent something similar.

3. Materials. Often "materials" are thought of as equivalent to supplies because they are used up during the course of a program period. Indeed, some materials will be used up during a year (or during whatever period is used when estimating costs). However, some toys and books and teacher aids that are classified as pedagogical materials will be used over a period of several years such that the cost of those materials needs to be spread out over the period of their usefulness. When estimating the cost of materials actually available or used it should be kept in mind that the cost may be different than the amount budgeted by a center or program for materials. The difference may be related to resources purchased or donated by teachers, by a special assessment made to parents, or from donations to a school or health center; in all of these situations the cost may be hidden because it does not appear in a budget or in accounting statements.

4. **Supplies**. These items, whether educational or administrative or maintenance supplies, are those that are used up during the course of a program period. They are usually valued at their market price. The estimate should include the estimated cost of donated as well as purchased items. The same comment made for materials applies to supplies that are paid for by teachers or parents or come from donations.

5. **Food**. Many early childhood programs, particularly in the Majority World, are built around a feeding program or include a feeding component; food can be a, if not the major program cost. The cost of food should be valued at the market price of what is provided, even if it is donated through a governmental feeding program or provided by an external agency (such as the World Food Program). In some programs, parents are asked to provide food or contribute to a fund used to purchase food. This food is thought to constitute an extra cost to families as food that is in addition to that normally supplied at home by parents so is classified as a program cost borne by parents.[17]

6. Overhead expenses. Included in this category will be such items as utilities, cleaning and maintenance, insurance, bank charges.

7. Transportation. Transportation of children to a location is sometimes required and carries with it a cost. That cost may be covered by the school or health center or other location or it may be something paid for by parents. This category may also include transport of administrators and other personnel necessary to carry out their work (going to meetings, consulting with specialists, transport to participate in training courses, etc.). Some of these costs may be paid for by the personnel because such costs are not budgeted or are under-budgeted. Supervisors, for example, may have to pay at least part of their own transportation to get to the schools to which they are assigned, thereby providing a subsidy to the program.

[17] In some cases, however, parents make a substitution, providing less food at home when children are fed at school, thereby undercutting much of the value of such feeding programs.

8. Uniforms or special clothing may be required of children participating in an early education program.

9. Training costs. In this study, the cost of initial (or start up) training will be treated as a sunk cost and will not be estimated. The costs of upgrading teachers and directors will be estimated. It is possible that teachers and directors may have to pay from their own pockets for part of the training (transport and housing for instance if the course is not provided locally).

If this study was directed toward estimating costs for a particular program or costs at the national level it would be important to include evaluation costs and developmental costs. It is possible to think that costs for these items might appear at the local level but it is unlikely. Accordingly we have not included estimates for these two cost categories in the study.

Strategies for estimating costs

There are at least three general strategies for estimating program costs:

1. Using budgets or expenditures found in official documents.
2. Constructing costs by looking at the resources actually used by programs in operation, and
3. Constructing costs a priori or by modeling.

1. Using budgets or expenditures

Using Budgets. This way of estimating program costs is probably the one most frequently used, particularly for estimates at a systemic or program level. That is because simply looking at records, particularly in some central place where program budgets originate, is easier (and less costly) than an alternative requiring site visits to identify and value the resources actually being used at a local level in the different settings that are covered by a program. Unfortunately, budgets are not a complete or even reliable source of information when estimating costs, even if they are at the level of an individual center or are specific to a particular program. Why?

First, budget seldom includes resources that are provided by organizations and individuals who are not directly responsible for a program (the federal government, a particular division of the government charged with operating a program or a school director) but who will nevertheless contribute to the program in some way or another. If others provide resources, the exercise of costing requires putting together values found in a variety of budgets, something that is often difficult to do. If the budget is drawn up by a preschool center, it will, in all likelihood, not include a number of possible local sources of support such as the results of fund-raising activities. It will not budget donations of time or materials. These are usually "extra" funds that can be used with a certain degree of discretion and are not part of the official accounting process. Looking at budgets typically

puts one within the particular and limited point of view of the organization that made the budget; it does not include all resources that will be used in a program.

Second, budget figures will often distort costs because they register what will be spent in a particular year even though the cost of an item that is provided (for example, a new facility) may need to be spread out over the lifetime of the resource. Construction and training and furniture must be paid for in the present even though the use and benefits of those investments play out over a number of years.

Third, budgets are best guesses and projections that may bear little relation to actual expenditures. It is not unusual for example for a budget to include a category for the purchase of equipment that never gets bought because funds are spent instead on salaries or something else. Should one, therefore, turn to expenditures instead of budgets for costing estimates?

Finally, at the level of individual centers in Mexico, a regular budgeting procedure is infrequent and systematically created budgets are usually not available.

Expenditures. An analysis of expenditures should allow one to see how budget allocations are really spent. Programs and often individual centers are required to keep accounts that show what resources were received and how they were used. However, if the accounting records that are provided by each unit are limited to showing how budgeted resources received from a particular source are spent (for example, accounting for what was received from a governmental organization), then most of the difficulties mentioned above for budgets would apply to estimating costs from expenditure records. The accounting would not pick up expenditures of locally-obtained funds, would not include costs incurred that are associated with donations of time or in kind contributions and would not spread out over time expenditures for buildings or equipment.

In addition to the above, there may be a problem of access to and reliability of accounting records. Or, such records may not exist at the level of individual centers.

2. Constructing costs by looking at the actual costs of programs in operation

Another approach to estimating costs, and the one adopted in this study for making estimates at the center level, may be more complicated and expensive than using budget or expenditures but it opens up the perspective and allows all costs of a program to be identified and evaluated, including costs hidden in various budgets (the center and the municipality, for instance) and costs associated with volunteer work and donations of resources.

To utilize this method at the level of a program, it is necessary to visit a sample of centers where a program is being implemented and to construct costs on the basis of questionnaires, of conversations with practioners and participants and of observations, as

well as by looking at budgets and accounting records (if such exist).[18] This method allows a look inside centers in operation, identifying and taking into account variations in costs from place to place and their relation to particular conditions. It is relevant to discussions of equity and quality as well as to projecting costs for budget purposes, allowing comparisons among settings within the same program.

A review of the literature suggests that this method of calculating costs has not been used frequently. However, we have identified two recent studies that have used this method, in Chile (Bosch and Gonzalez 2006) and Colombia (Pineda 2006) as well as several small scale studies carried out in the 1980s and 1990s in Brazil (Ciavetta, 1983), Peru (Cereceda 1984), Mexico and India (Myers 1995 and 1990).[19] Another useful attempt to calculate preschool costs at a center level comes form Kenya (Issa 2006)

3. Constructing costs: "modeling" or "simulation".

Another approach to estimating costs does not depend on budgets or expenditures or on determining and evaluating what resources are actually being used in an existing program. This approach begins with a set of assumptions, based on research and experience and prevailing norms, about what combinations of resources are needed in a program to produce the desired results. The starting point may be the combination of resources necessary to reach an "ideal" outcome but may also be built around what is considered an acceptable or even a "minimum" result. This method of constructing costs can be particularly useful when trying to set out a new program. If linked to estimates of differential benefits, it may be useful when trying to compare costs of different program models.

A potential drawback to this strategy is related to the fact that in most national settings, there will be considerable variation in the conditions under which a program model is implemented implying different assumptions about which costs to assign. It may be more difficult, for instance, to get supplies to rural areas. The facilities to be used may have to be different for geographical or cultural reasons. The availability of qualified personnel may differ so that incentives are required. Transportation may be needed in one setting but not another. Food may be required in some cases and not be so important in others. These variations complicate a modeling exercise but, in theory, it is possible to introduce many variations into a simulation model and carry out the indicated costing estimates in each case.

When utilizing a modeling approach it is not necessary to determine in advance where the financing will come from in order to implement the model. After estimating costs, different ways of obtaining the necessary resources can be considered. The model is not tied directly, therefore, to the availability of government funding to provide the

[18] Just sending out questionnaires to those in charge of centers is not enough. Memories fail. There are sometimes reasons to hide resources received. It is not possible to check answers against local accounting or local realities.

[19] There are undoubtedly more such studies that it would be interesting to include.

resources defined as necessary, or for that matter to any other source of funding. If the prospects of financing seem totally unrealistic, adjustments may be made in the model and the simulation.

A Chilean example of costing at the center level

Let us look now at a recent example from Chile of constructing costs in individual early education centers as a way to estimate educational costs.[20] (Bosch and Gonzalez in Raczynski 2006). This study was carried out in Chile in 2006 in order to help the incoming government of Michelle Bachelet establish policies and programs.[21] It focuses on attention to children under four years of age living in conditions of poverty or social vulnerability. Costs of three main models were examined:

- a formal model of direct attention carried out in two kinds of programs, one for children 0 to 2 and one for children 3 to 6 years of age (although these two were sometimes brought together in one center). This model included wide variations in numbers of children attended by centers, as well as in the organization and infrastructure of centers. Several modalities of the formal model were costed separately.
- a non-formal community day care initiative for working mothers in homes where a mother cares for 5 to 8 children.
- an inter-sectoral program in which qualified personal from education and health provide support and education to mothers of children at risk of delayed psycho-motor development, when they come for medical check-ups, through home visits and in periodic meetings of small groups.

Recognizing the difficulties of getting access to disaggregated budget or expenditure information, and realizing that most early education centers function with resources from many sources, the evaluators decided to obtain information by 1) applying a structured questionnaire administered in a representative sample of the formal education centers and 2) carrying out in-depth interviews with implementers of the home day care and parental support programs. In all cases, 3) information was verified by visits to locations where the service was provided, both to check institutional records and to observe the program in action.

Costs were evaluated either in terms of the actual expense incurred (market price) in consuming the resource or by assigning the value of the best alternative use. Values were estimated not only for resources used in the regular functioning of the program but also for investment costs.

The cost categories used were as follows:

[20] Examples of the other strategies can be found in Myers 2007.

[21] This study involved cooperation between the Chilean government, The Inter-American Development Bank, UNICEF and Chilean university researchers.

Human resources: Directly paid personnel were valued by taking the total of the salaries and benefits received. Costs of volunteers and personnel in informal positions were estimated in terms of what it would cost to contract equivalent services to maintain the program if these human resources were not available. For most cases of volunteers, their time was valued at the legal minimum wage.

Food. This resource was valued at market price.

Consumable materials (educational, administrative and cleaning materials) valued in terms of their market price and their level of use during the year.

Basic services. The expenditures on electricity, water, heat, telephones, etc. necessary for functioning of the program.

Infrastructure. The value of the building and land where the program functions was valued at what it would cost to rent the space for other uses.

Equipment. Durable goods with an administrative or educational purpose or used to prepare and serve food were valued at their market price spread out over the life of the goods.

Training. Values were estimated for 1) the initial training of personnel without a professional formation in which case they were treated as an investment to be spread out over the useful life of the investment and 2) general upgrading through periodic courses that was treated as a part of the general operation of a center (much like regular maintenance costs).

Supervision, technical and administrative support. The costs associated with these support activities which come from a central source were pro-rated according to the number of centers for which the supporting structure was responsible.

Because the programs were in operation, developmental costs were not a consideration. Evaluation costs were not included. Nor were possible costs for such items as transportation or uniforms or parental participation.

The evaluators found that in the early education and care centers it was necessary to disaggregate estimates further within each establishment: costs were estimated according to the age of the young children attended, approximated by the age groupings used (usually 0 to 2, 2 to 4 and 4 to 6). They concluded that if only the costs per student at the center level were estimated by taking an average across groups in a particular center that attended to children in more than one age group, this would not reflect the important differences in costs by age and educational level that correspond to different educational and care needs. Accordingly, in estimating per child costs, it was important to sort out the full costs of the personnel at each level who directly attend the children and of the materials used directly by them. On the other hand, administrative costs, infrastructure and other costs that pertain to children of all ages were allocated among the age groups and levels. A set of rules were establish for making these distinctions and assigning costs. (This will not be a problem in

our study because the children are all of preschool age whereas programs that include children under age 3, as the Chilean study, do require disaggregation.)

The per-child costs calculated for these varied programs are presented in Table 2. They vary from US$82 to US$127 per month. If annualized (assuming 12 months of operation), the yearly costs would range from US$984 to US$1,524.

Table 2. Monthly per-child expenditures in Chilean pesos, by institution and modality, by cost category

Cost Categories	JUNJI – direct administration	INTEGRA-direct administration	JUNJI transfer of funds	JUNJI Alternatives	Community Day care
Personnel (regular hours	21,482	23.266	26,891	12,563	21,332
Personnel (extended hours)	5,590	5,671	8,943	5,777	
Food	14,031	13,282	14,646	13,166	7,025
Consumable materials	1,940	1,791	2,386	2,151	1,583
Basic services	1,126	1,686	2,223	1,224	363
Furniture	1,826	1,154	2,804	1,219	1,100
Infrastructure	4,307	4,445	4,571	3,875	3,055
Supervision and technical help	4,099	5,078	4,016	2,832	8,413
TOTALS	54,402	56,373	66,479	42,807	42,872
Dollar equivalent	US$104	US$107	US$127	US$82	US$82

Source: Raczynski,, 2006

Note that the salaries account for approximately half of the cost, with minor variations and food accounts for another 25 percent. There are some significant variations in the structure of costs by program. When costs were assigned by age of children, the per child costs for the 0 to 2 group were, on average 80% higher than costs for 2 to 4 and 4 to 6, related mainly to the fact that the number of children per adult for the younger children was significantly less than for "older" children.

Studies of preschool costs in Mexico

The only studies of preschool educational costs in Mexico that we could find[22] were two rough case study estimates made by Myers in 1995. The cost estimates included costs of: salaries, infrastructure, overhead, classroom materials, supervisory visits, teacher training, out-of pocket expenditures of teachers and directors, participation and monetary contributions related to operation of the preschool committee.

[22] In addition to searches in the internet, we asked a number of prominent educational researchers, including those working on the economics of education, to try and locate studies. The only results we could, in addition to the national estimates of per student costs made by the SEP and presented in their Annual Report or done in conjunction with OECD were very rough case study estimates carried out by one of the authors of this document more than a decade ago (Myers 1995). It is likely that studies exist that we could not find, perhaps in master´s theses, but what is clear is that if such exist they are not generally known or easily available to the public.

The general conclusions about costs from the two case studies (done in the Mixteca Alta in Oaxaca where several of the schools in this study are located) were the following. The cost per child per year (in 1995) was estimated at US$350 in one school and $436 in the other. [However, these estimates were made just before a major devaluation of the peso. Using the rate of exchange after the devaluation, the costs were US$198 and US$247, respectively.] The government covered 84% of the costs in one school and 67% in the other, almost all of which went toward salaries. In one of the schools, parents covered 13% of the costs and in the other 27%. Teachers were paid at the level of about 4 minimum salaries. Teachers estimated that they spent the equivalent of about one month's salary for purposes related to the functioning of the school or for their own training.

The lack of such studies was somewhat surprising and by itself is a finding of this research.

With this brief dip into the literature as background we turn now to a description of the study to estimate costs in Mexican preschools.

III Description of the Study

Objectives and Key Questions

The general objectives of the study are:

- to generate debate and reflection that will support policy formulation and program development.

- to strengthen public accounting by experimenting with a method for providing information about the total costs of preschool centers.

The main questions to be answered in this study are the following:

1. What do different models of preschool in different contexts cost per student per year? We expect to find important differences in per student costs related to location and quality. It is likely that these will also be related to family contexts with poorer families sending their children to preschools where the cost per student is considerably lower than for families with more resources.

2. What is the structure of the costs?

   - Does the payment of personnel account for, as the literature suggests, a very high percentage of the total costs?

   - What percentage of costs are investment costs, administrative costs, food, etc.?

3. Who bears the cost?

To answer this question it will be necessary to be sure we have included all contributors of resources including the federal government, state governments, municipalities, private sources, parents, and even teachers and directors who may be providing funds out of pocket to purchase materials or to attend training courses.

By sorting out who bears the cost we can seek answers to such questions as:

- Is preschool education really free to parents?

- Who covers the bulk of the costs?

- Are there inequities in the way in which families and communities are being asked to cover costs?

Methodology

Part of the novelty of this study lies in the construction of costs for individual preschools by visiting the schools, observing, inventorying, and obtaining information directly from directors, teachers and parents. Another relatively novel part of the approach taken in this study is its insistence on trying to determine the total costs during a school year of running a center, taking into account the goods and services donated as well as purchased, including contributions in kind as well as cash and by private as well as public sources.

To do this several related instruments or formats were created as was a training manual.

In theory, the information collected allows estimates to be made for each of the "ingredients" described in Chapter 2 as well as classification of the cost data for each category according to who is bearing each of the costs. The format for summarizing costs for each school is represented in Table 3.

Table 3.—Format for consolidating cost information at the school level

	Public			Private		
	Regular budget		Special Program			
Components	National	State and Local	PEC, PNL, …	Parents & Community	Education Staff	Others (Business, church, foundation ……)
1. Personnel Salaries Benefits Housing and meals						
2. Infrastructure: Buildings						
3. Infrastructure: Equipment						
4. Materials						
5. Supplies						
6. Food						
7. Overhead Expenses						
8. Transportation						
9. Training						
10. Supervision						
11. Uniforms						
12. Other						

From this table it will be possible to identify, for each center:

- the total and per child costs
- what components are the most important in determining the total cost

- what components seem to be neglected
- who bears the cost for each component

From comparisons of the results for different schools it will be possible to identify how the patterns of costs and of who bears them differ across types of centers.

Data and instruments

Costs. The specific instrument used in this study to collect cost information is presented in Appendix 1.[23] The instrument is divided into sections dealing with: 1) General information about the center; 2) A description of staff; 3) Personnel costs; 4) Costs of equipment; 5) Overhead costs:; 6) Income received by the center and its uses; 5) Information about visits to the center by professionals; 7) Costs of training during the year; 8) Costs incurred by parents; 9) Participation in the Council of Social Participation and/or the Parent's Association.

Quality. For information about the quality of the centers, we applied the Scale for the Evaluation of Quality in Preschool Centers, Version 2.2. This scale consists of 45 items organized into two main parts to be applied at the general level of the center and at the level of each classroom. The scale has four dimensions tapping the quality of: Resources available, Management, the Educational Process and the Relation with family and community. Each indicator is scored on a continuum from 1 to 5 (1 = inadequate; 2 = Incipient; 3 = Basic; 4 = Good and 5 = Excellent). A brief overview of the indicators used in the scale is presented in Appendix 2.

The sample of preschool centers

The centers to be studied were determined by the fact that this research was embedded in a broader research project focused on examining the impact of policies on the quality of preschool education (see the Introduction to this document). For that broader study, a sample of 40 preschools was selected and studied in the school year 2002-2003, then followed up in 2006-2007 and 2007-2008. These centers were selected so as to include variation in geographical location (urban-rural locations; four states - Federal District, Oaxaca, Puebla and the State of Mexico), cultural differences (indigenous and non-indigenous), socio-economic differences (lower vs. middle and upper class) and institutional responsibility (private and governmental, and, within government, General Preschool, Indigenous Preschool, the Council for Educational Promotion, and the Department of Family Welfare). Table 4 presents the sample.

[23] For the construction of the instruments we drew on: Bosch and Gonzalez (2006), Lewin and McEwan (2001) and Pineda (2006).

Table 4. – Distribution of the sample of preschools

Oaxaca	Puebla	Distrito Federal	Estado de México
4 Urban Marginal 4 Urban Middle Class 4 Rural Indígenous 4 Rural General	3 Rural Indígenous 5 Rural General 2 Rural Community schools (run by the State)	6 Urban Marginal (1 private) 4 Urban Middle Class (1 private) 2 Urban Community-based schools (DIF)	2 Rural Community-based schools (CONAFE)
Total = 16	Total = 10	Total = 12	Total = 2

Since 2002-2003, one of the preschools closed (the Center for Integrated Attention in the Community – CAIC) in the Federal District. For purposes of the costs study, another preschool with similar characteristics was substituted.

Although the original sample was of 40 centers, we discovered that, after a prolonged negotiation to obtain permissions to enter the centers located in the Federal District, we were denied permission, eliminating from the sample the 9 public preschools administered there by the SEP.[24]

Organization of the field work

Selection and training of evaluators. The following criteria were used to select evaluators:

[24] In December 2007 we visited the Department of Preschool Education of the Federal District to present the study and request permission to, in effect, continue the study that was begun in 2002 with a follow-up at the beginning of 2008. Our understanding at the time was that there would be no problem and we set our schedule accordingly. However, when we returned in January to make arrangements to obtain the letters of permission that are required to enter the preschools, we met with some resistance. It became clear that more time would be needed and we would not be able to begin work in the first week of February as planned. An adjustment was made to move field work in the Federal District to mid March, with visits first to other states. However, in mid-February we were told that we would not be allowed to enter the preschools in the District because a new policy had been proclaimed prohibiting outsiders from visiting centers as a part of allowing teachers to concentrate on improving their work without distractions. We argued that the cost study would involve visiting preschools, but with a minimum of disruption to the teaching process, and in only 9 preschools of the entire system. The preschool department held firm on its decision not to let us visit preschools in the Federal District. As a result we lost the opportunity to gather cost information in the nine schools in question (in the sample for the Federal District there was one privately run center and two centers operated by Family Welfare (DIF) that we could visit. Our sample for the cost study was reduced from 40 to 31.

1. Educational level of licenciatura
2. Experience in applying questionnaires and carrying out interviews
3. Field work experience in rural areas
4. Availability to travel

The group of 14 evaluators was made up of three educators, eight psychologists, one anthropologist and two sociologists. All met the requisites. It would have been better if we had been able to recruit field workers with a background in economics.

Training. Training was carried out during a period of three days in a workshop that lasted 20 hours. Field workers were introduced to the project and its methodology. The costing instrument was gone over in detail. Strategies for applying the instrument were discussed. Assignments for field work were made and administrative logistics were treated.

Each evaluator was provided with a methodological guide for applying the modules of the costing instrument.

The field work. Seven teams were formed to carry out the field work, each consisting of two people, one concentrating on the cost study and the other gathering information for a complementary study of the transition to primary school. One week was allowed for each team to complete the data collection.

The timeline for the field work that was carried out is presented below in Table 5.

Table 5.— Timetable for the field work

	February				March	April
Locations	4-8	11-15	18-22	25-29	03-07	21-29
Puebla	7 Equipos	3 Equipos				
State of México		2 Equipos				
Oaxaca			7 Equipos	7 Equipos	1 Equipo	
Federal District						7 Equipos

The process of obtaining information for the cost studies turned out to be more difficult than anticipated, even after having piloted the instruments. It was not always possible to make a good estimate on site of various components. Teachers did not necessarily have their pay stubs available to check salaries. Some estimators did not understand fully what was needed so neglected to obtain detailed information on some components (or information that would help to determine the cost of the component). In order to make the estimates it has been necessary to make additional assumptions about the conditions of the particular schools being studied something that is facilitated however by having additional information about the schools from other studies.

These difficulties have led us to place more emphasis than we might otherwise have placed on details of the process of estimating the costs. In the following chapter we will present an example of how we calculated the estimates, making explicit assumptions and adjustments to the data.

IV Research Results and Analysis

We begin this chapter with a detailed description of how we estimated costs for one school. We think this is appropriate for two reasons: first it will let the reader see exactly how the estimates were made so that judgments can be rendered about the results reported: second, it exposes the methodology to criticism and reflection which is one of the main purposes of this costing experiment.

A detailed example of how costs were estimated for one preschool

Description of the preschool. The preschool to be analyzed is rural and part of the indigenous preschool system, located in the mountains of the State of Oaxaca, in the municipality of Tlaxiaco. It has a total of 54 students enrolled, 4 in *primero* (usually children aged 3), 20 in *segundo* (children aged 4) and 30 in *tercero* (age 5, just prior to entry into primary school). There are three teachers and one director, all with considerable experience in the system (8, 17, 21 and 26 years respectively). This means that the average number of children per teacher is 18 to 1.

The preschool participates in the Schools of Quality Program (PEC). Nevertheless, the evaluation of school quality carried out at the time of the cost study provided an average quality score of only 2.16 on a scale of 1 to 5; this is considerably below the 3.0 score designated as the minimum quality score hoped for in all preschools.

It is somewhat unusual for a rural indigenous school to have a separate director and three teachers for a total of only 54 students (usually 75 are required to be able to claim a third teacher and a director). This low ratio of children to adults is likely to increase the per student costs in comparison with other similar schools. It is also unusual for a rural indigenous school to participate in PEC. Participation in PEC required some additional time on the part of teachers. It also allowed the school to acquire some new equipment and materials as well as to add a multi-purpose courtyard to the school.

As will be seen, the school received support from families in money, kind and time to cover costs in several cost categories. Teachers also contributed from their earnings, but mostly to costs associated with their training or to their participation in special events in which they had to be present.

The questionnaire used to obtain the information can be found in Appendix 1.

The information for each of the cost categories is summarized in Table 6 which is presented on the following page. The reader may want to refer back to this table after reading each of the explanations about how costs were calculated for each category ("ingredient") of costs. We have gone into some detail about the process used to estimate costs not only because it provides the reader with a basis for interpreting the results but also because the process should be critiqued and undoubtedly requires adjustments before it is applied in other studies

Table 6

Results of the cost analysis of an indigenous preschool, 2007-2008

Components	Público			Privado		Total costs	Percentages
	Regular Budget		Special Programs (PNL, PEC, CONAFE)	Parents and communities	Center Personnel		
	Federal	State and Municipal					
1. Personnel							
Salaries y Benefits	$279,258	$87,840				$367,098	**56%**
Aguinaldo y prima	$49,400	$17,200				$66,600	10%
Food and Lodging						$0	0%
2. Infrastructure: Constructio		$60,000	$600	$665		$61,265	9%
3. Infraestructura: Equipment	$2,426		$2,000			$4,426	1%
4. Materials	$312		$6,000	$20,813	$14,900	$42,025	6%
5. Supplies	$2,500					$2,500	0%
6. Alimentació n				$44,928		$44,928	7%
7. Overhead		$2,100				$2,100	0%
8. Transportation						$0	0%
9. Capacitación		$4,850			$20,653	$25,503	4%
10. Supervisio n	$609					$609	0%
11. Uniforms				$5,365		$5,365	1%
12. School Committees				$1,247	$4,342	$5,588	1%
13. Other				$919	$29,300	$30,219	5%
Tota l	$334,505	$171,990	$8,600	$73,937	$69,195	$658,226	100%
Per student cost	$6,195	$3,185	$159	$1,369	$1,281	$12,189	
Percentages	51%	26%	1%	11%	11%	100%	
Percentages	**78%**			22%		100%	

Cost categories

1. Personnel costs. In this category, information was collected about the base salary, monetary benefits and in-kind benefits provided by the community for food and housing. (In this particular preschool the community did not provide in-kind benefits for food and housing.) The information about salaries and benefits was to be obtained by evaluators from the check stubs provided to each teacher at the time they are paid, every 15 days. In theory this should make the calculation of salaries and benefits easy, taking the bi-monthly amounts, multiplying by 24 and then adding in once-per-year bonus payments received for vacation and the "extra salary" (aguinaldo) paid at the end of the year. The basic information collected by the evaluators for this preschool was as follows:

Table 7. – Salary and benefit information reported

Remuneration	Director	Teacher1	Teacher 2	Teacher 3
Bi-monthly payments				
Basic Salary	$4,000	2514.50	2514.50	2514.50
Benefits			776.76	
Teaching material		25.25	25.25	25.25
Credit				135.00
Total salary each 15 days	$4,000	$3,660	3955.72	3680.01
Once yearly payments				
Vacation	2,000	1,200	200.00	1,200.00
Yearly bonus	16,000	16,000	14,000.00	16,000.00
Who pays?	Federal	State	Federal	Federal

In some cases, when teachers were reluctant to share directly their receipts, they were asked to fill out the form for collecting information about their salaries and benefits. The only way to check the accuracy of this information was to look at what a teacher of the same category, education preparation and years of experience in the system would presumably earn.

Interpreting the salary data. A look at the salary information provided leads to a number of questions:

- Why, with the exception of the director, does the "Total salary" for each 15 day period not correspond with the sum of the basic salary + benefits + an allowance for teaching materials? The fact that these do not correspond suggests that we are not picking up all of the benefits provided. We decided that we would take the "Total salary each 15 days" as representing teachers' salaries and benefits paid each month. According to this calculation, the salaries for the four personal run between $8,000 and 7320 per month. It is possible that this slightly underestimates salaries and benefits.

- Why would a teacher with only 8 years of experience receive the same level of vacation pay as the director who has 26 years of experience? Is it possible that the pay scales and negotiated benefits for those paid by the state and belonging to the state union are different than those being paid with national funds? We decided to accept the yearly bonus (aguinaldo) as reported.

These decisions taken, the calculation was as follows:

Salaries: $4,000 + $3,660 + $3,955.72 + $3,608.01 = $15,295.73 x 24 = $367,097.52
Benefits: $18,000 + $17,200 + $16,000 + $17,200 = $66,600

2. Infrastructure: Buildings and property. The costs of construction are found in three categories: a) costs of the building and property; b) costs of new construction with funds from the Program Escuelas de Calidad (PEC) and c) time provided by parents to undertake the new construction.

a. Building and property. In this case the estimated rent for an equivalent building was determined to be 5,000 pesos. Therefore, $60,000 was the estimate for the cost of the building per year. (If the building was privately owned it would have been necessary to estimate what it would cost to build the same building and then amortize that cost over 30 years. Because the building was constructed by the government there is no rental and the government is not actually putting out money to cover the cost during the year.)

$5,000 x 12 = $60,000

b. Cost of new construction. PEC provided $24,000 to the school. We did not obtain information about how this money was spent except for a designation of the purchase of a computer which we estimated at $6,000. However, based on previous work with PEC, we decided to divide the remaining $18,000 into $12,000 for construction and $6,000 for educational materials. Our best guess is that the money for construction was used to buy materials needed for parents to construct an outdoor basketball court (which is also used for many other activities). The 12,000 pesos were amortized over a period of 20 years, the assumed life of a basketball court. [t is also possible that PEC money was used to purchase some of the other equipment described (desks, etc., see next section) but we decided to stay with the division into computer, infrastructure and academic materials.]

$12,000/20 years = $600

c. Parental time donated to construction. The questionnaire asked parents to estimate time that had been devoted to construction and maintenance during the school year up to the time of the survey (in February). Six parents were asked and all indicated they had devoted time to construction or maintenance: specifically mentioned was time devoted to constructing a basketball court as well as to "work" (faenas) and to painting and cleaning. We decided to group all this under construction even though, with more precise information we might have taken some part of this for maintenance and included it in "overhead" (indirect costs). To make the calculation we:

- took the average of the hours reported by the six parents (31/6 = 5.2 hours per parent). The questionnaire was not sufficiently specific to know whether or not this was per week (unlikely) or per month or for the total time from September to February when the survey was carried out (we opted for this alternative, especially in light of the fact that parents were also giving time to participation in the school council and to other meetings)

- assumed that 30% of the parents would have participated in the construction activities at one time or another from September to February (16 parents).

- applied the hourly minimum wage in Oaxaca ($49.5 pesos per day for an 8 hour day = $6.1875 per hour).

- annualized the amount by adding in 3 more months (assuming a 10-month school year of which 7 had passed).

31/6 = 5.2 x 16 = 83.2 x $6.1875 = $514.8 x 1.3 = $669.24 per year

3. Infrastructure: Equipment. To estimate the cost of equipment, inventories were taken of the equipment in the office, the classrooms and the recreational area. For most of these items the school director provided prices that were then applied to the number of items in each category (e.g., 32 children's chairs x $93.15 per chair = $2980.80) A standard life of 7 years was assumed for the equipment (desks, chairs, tables, filing cabinets, bookcases) and the cost of these items were amortized over the 7 years. The total value of the equipment inventoried was estimated at $16,982.65.

$16,982.65/7 = $2,426.09 per year

The school also had a computer for which a market price was estimated at $6,000. This price was amortized over three years (this was done despite the fact that the computer which was in the office, was not in use: there was no electricity and the director did not know how to use it.) This computer was purchased with funds from PEC.

$6,000/3 = $2,000

4. Materials. The cost of materials was estimated in several categories: a) books; b) materials (not specified) purchased with funds from PEC; c) materials purchased by parents; d) Materials purchased by teachers.

a. Books. The inventory produced a count of 156 books. Although the price for the SEP is about 8 pesos per book, this is a special price; the market price is closer to 14 pesos per book. We applied this shadow price. We then amortized the books over a seven year period.

156 x $14 = $2,184 / 7 = $328

In preschools, the books are not issued to individual children but form part of a library to which children have access.

b. Materials purchased with funds from PEC. We assumed that the estimated $6,000 of PEC funds used for materials were for materials that would be used up in one year so there was no need to amortize them.

$6,000 for one year = $6,000

c. Materials purchased by parents. In the questionnaire for parents we asked about purchases of books and school materials. One parent indicated the purchase of a mathematics book but we discarded this because the purchase was for a child in the first year of preschool and it seemed unlikely that such a purchase was an institutionally related purchase; rather, we took it as a purchase by a parent of educational material to be used in the home, equivalent to purchase of a toy and not related to institutionalized educational expense. All six parents interviewed mentioned purchases of school materials (these included back packs for some as well as purchases of crayons, pencils, etc.) We took the

average amount indicated by the parents ($301.67 per year) and multiplied by the number of students.

$301.67 x 54 = 16,290.18

All six parents interviewed mentioned also a special purchase of plastiline. We averaged the amounts mentioned by each parent ($7.83 pesos per parent) and multiplied by the number of parents.

$$7.83 x 54 = $422.82

In the information provided by directors an amount of $25,000 was indicated as the amount spent for materials during the year. Of that amount, $6, 000 was estimated to have come from PEC (The $24,000 contribution included $12,000 for infrastructure, and $6,000 for a computer, leaving $6,000 for materials.) That leaves an amount of $19,000 in expenditures for materials unassigned. From this amount we subtracted the $14,900 that the teachers said they contributed (see next item) and assigned the remaining $4,100 to contributions from parents.

Accordingly, the total contribution estimated for parents for the year was:

$16,290.18 + $422.82 + $4,100 = $20,813

d. Materials purchased by teachers.

The director and teachers estimated that they contributed $14,900 over the course of the year to purchases of materials. Although this estimate seems a bit high we accepted it. Some of this may have come from the small allowance that teachers are given ($50.50 pesos per month) for materials. We did not have enough information to know how that amount was used by the teachers.

The total estimated for materials is:

$2,184 (federal) + $6,000 (PEC) + $20,813 (parents) + $14,900 (teachers) = $43,897

5. Supplies. We included in this office supplies (which might have been placed in the overhead category instead).

Paper		$1,500
"Other" provided by teachers		$800
Supplies for promotion y publicity		$200
	Total	$2,500

6. Food. This school did not participate in any national or state program providing food. The contributions for food were made by parents. These were of two kinds: a) funds or food requested by the school for the children to eat during the morning; and b) money provided to the children by the parents so they might buy a snack on the way to or from or

during school hours. We decided not to count the second category, treating it as a family expense rather than an institution-related expense. The average amount reported for a day, based on the reports of the six parents, was $4.16 pesos. The school year is 200 days and there are 54 students.

$4.16 x 200 days x 54 students = $44,928

7. Overhead Expenses. In this category we included only the cost of electricity. The school did not have a telephone, gas or potable water. We assigned the cost of the electric bill to the municipality (state). The average for the two months for which we obtained information was $350 per payment. Electric bills are bi-monthly.

$350 x 6 = $2100

8. Transportation. This school did not have any transportation costs.

9. Training. We asked each teacher and the director about the training courses they had participated in during the year, requesting detail for the course inscription as well as for the costs of food and housing, materials and transportation to the site of the course. We have assumed that the State picks up the cost of the inscription and that the teachers pay the other expenses. This probably underestimates somewhat the cost to the state which sometimes picks up other costs by providing transport and a per diem, while overestimating the contribution out of pocket by the teachers. In one or two cases the information was incomplete for one teacher but we assumed the expenses to be the same as for another teacher who took the same course.

The total for the course inscriptions was $4,850
The total cost for food, housing, materials and transport was $20,653

The total cost for training was estimated to be: $4,850 + $20,653 = $25,503

10. Supervision. We asked how many visits were made during the year by the supervisor or by another functionary. This school had only been visited twice during the year, once by a supervisor and once by a functionary in the health system, each for a day. To estimate the cost of the time of these individuals we made a rough estimate of what an educator with 15 years of experience would get paid per day as $304.56.

$304.56 x 2 = 609.12

11. Uniforms and other clothing. The questionnaire produced conflicting information about uniforms. On one hand, it seems that uniforms were not used in the school. On the other, one of the parents answered that the state provides uniforms. We chose not to estimate a cost for uniforms. However, parents reported having to purchase special clothing for their children needed to participate in the honor guard or special presentation made by the students. Five of the six parents interviewed reported such expenses. We took the average expense reported which was $331.20. We then assumed that approximately a

third of the parents would be called upon for such expenses. (This estimate was made despite the fact that 5 of 6 parents mentioned the expenses because the parents interviewed tended to be the most active parents and the most likely to have children participating. This may be an underestimate of what parents spend.)

$331.20 x 54 = $17,884.80/3 = $5.365.44

12. Preschool Committee participation

In this category are included: a) time dedicated by staff and parents to the Council of Social Participation; b) time dedicated to the Parents' Association. In this school, both organizations were functioning.

a. Council of Social Participation. Two members of the school staff participated in this council together with two parents.

- School staff. We assumed that the school staff members were taking extra time to participate in this council (this based on a common complaint that participation in PEC, which requires such a council, means additional unpaid hours of work). The Director estimated his time to date on the Council at 50 hours and a teacher at 40 hours. We annualized these estimates to get times of 65 hours for the Director and 52 for the Teacher. We then applied an hourly rate of $44.44 for the Director and of $27.94 for the teacher (calculated on the basis of their salaries and assuming a 6 hour work day).

  Director: 65 hours x $44.44 = $2,888.60
  Teacher: 52 hours x $27.94 = $1,452.88
  Total $4,341.48

- Parental time. Parents put in an estimated 80 hours to date which, annualized is 104 hours. We applied the equivalent of a minimum hourly rate for Oaxaca (49.5/8 = 6.1875).

  Two parents: 104 hours x $6.1875 = $643.50

b. Parents Association. Parents estimated they had spent 75 hours up to February. The annualized number of hours was 97.5. When valued at $6.1875 per hour the total is $603.28.

Three parents: 975 hours x 6.1875 = $603.28

Adding together these two estimated costs of parental participation we have:

$643.50 + $603.28 = $1,246.78

13. Other. Several important cost estimates fall in this category: a) time dedicated by staff to special events and b) time by parents to attend meetings.

a. Staff time dedicated to "special events". The director and teachers gave us estimates for the amount of money they had spent to participate in what were called "special events". These events included meetings that they had to attend for one reason or another and for which they had to pay their transportation and sometimes costs of hotel and meals. They might be called to a meeting by PEC, their supervisor, the union, administrators or others. For the four staff this added up to a total of $29,300 for the year. Unfortunately, there was no way to verify these estimates so we accepted them and placed them in "other" category. This is probably a high estimate because it would be the equivalent of almost one month's salary.

b. Parental attendance at meetings. The average number of hours attending reunions was indicated as 5.5 hours per person. If we assume that 50% of the parents attended then the value would be:

5.5 hours x 27 parents x $6.1875 per hour = $918.84

The total estimate for this category is:

$29,300 (staff) + $918.84 (parents) = $30,218.84

What can be learned from this case study?

1. The importance of assumptions

The reader will see that assumptions are important. For instance, we assumed that the correct figure to use when estimating salary costs was the figure reported for the pay received by teachers every 15 days. However, it may have been valid to add other items on to the salary (or to have increased benefits beyond the obvious benefits of the extra month's pay and vacations).

Among other assumptions were the following:

- We assumed that the money given to children to buy something on the way to or from school was not a valid expense to include in this study but that money provided to the school to buy mid-morning food was valid. Behind this assumption is the idea that this is "extra" or "complementary" food that does not substitute for food that is provided at home as part of the regular diet. In several of the examples to be presented later, the way of estimating the food contributions becomes even more important; it will be evident that food costs become a large item in the general distribution of costs.

- We assumed that teachers covered all the costs except course inscriptions for their training. This may have overestimated the part of training costs that are borne by

teachers (but not the total costs of the training). We also decided not to amortize training costs although, in theory, the use of the training will be spread out over many years in the same way that the costs of buildings and other inputs are spread out over time.

- We assumed parents did not buy uniforms.

2. More detailed information is necessary

To make more accurate estimates we needed much more information than we were able to obtain. For instance, as commented, it was not clear why the amounts received by teachers every 15 days were as they were, requiring an assumption about how they were calculated. We needed information we did not have about how the PEC funds were allocated. We should have had more detailed information about the costs of training and about who actually bore the cost. The activities that were included in the teachers' estimates of their participation in "special events" needed to be described along with what expenses were incurred.

3. Costs per student per year

The per student costs estimated taking into account all costs amounts to $12,189. Translated into dollars this is approximately US $1,149.[25]

This per student cost is similar to that of **$11,100** presented by SEP in its Annual Report for preschools during the previous school year, 2006-2007. However, the two estimates are not directly comparable because the estimate from SEP, although for public institutions, does not include costs covered by parents or staff; nor did it use a process of amortizing costs.

To get closer to a comparable figure using our data, let us revisit Table 6 and use the information to estimate costs under a different set of assumptions, closer to those that are normally used and which underpin the SEP's estimate of per student cost. We will assume that:

- Only costs attributable to the federal and state governments should be included.
- The costs of buildings and equipment that were there at the beginning of the year are taken as "sunk" costs that have already been accounted for in a previous year. (Only a new construction cost or new purchases of equipment and materials should be included.)
- We do not amortize amounts spent during the year for construction or equipment or durable materials but take the full amount spent by the government during the year in these categories.

Under these assumptions we would count the following costs:

[25] Although the exchange rate has been fluctuating substantially, we have used the rate of 10.6 pesos to the dollar, the rate as of April 1, 2008 when the field work was being completed.

Salaries	$367,097.52
Benefits	66,000.00
The contribution by PEC (to construction and materials)	24,000.00
Materials	2,546.00
Overhead	2,100.00
Training (covered by the government)	4,850.00
Supervision	609.12
Total:	$467,202.64
Per student cost, pesos**:**	$8,651.90
Per student cost, US dollars:	$816.22

The per-tudent cost of **$8,651.90** is the estimate for what was spent by the government during the 2007-2008 school year for education in this school. The fact that it is lower than the SEP's estimate for preschool education as a whole should not be surprising, even in this case where the number of students per teacher is relatively low (18 to 1) and where an amount was made available from a special program (PEC); an estimate made at the school level does not include any of the multiple administrative costs that are absorbed at federal and state levels.

The pertinent question for this study will be, do these total cost estimates approximate the per student cost figures for preschools in other locations and models? Is there a systematic bias against (or in favor of) indigenous preschools?

2. The distribution of costs by categories

Several categories will be highlighted.

Salaries and benefits. It is clear from Table 6 that although the bulk of the costs are of salaries and benefits which account for two-thirds (66%) of the total costs as we have estimated them. This is a far cry from the 90+ percent that one usually hears as being taken up by salaries and benefits. However, when we use the figures that are only for what the government has provided during the year, the percentage of the total that is for salaries and benefits is 93%. If we add in the training costs it edges up to 94%.

Infrastructure and materials. In this case, the cost of buildings and equipment is estimated at about 10% with materials accounting for another 6%.

Food. The 7% of total costs for food is, as will be seen later on, a relatively low percentage.

Supervision. Perhaps one of the most striking features of Table 6 is the infinitesimal amount spent for supervision for this school which was visited only twice during the school year.[26] One might argue that the 5% of the total costs that are spent on

[26] The estimate is only for the supervision provided to this particular school. In theory on could prorate the total costs of the preschool supervisory force among the set of schools for which each is responsible. Here, we take only what is of benefit to this school.

training will not have much effect on the quality of the schools unless there is some kind of systematic follow-up to the training. Indeed, the low level of the quality of teaching suggests this may be the case. It is also possible that some supervision costs are not picked up because teachers are called together by the supervisor in which case more supervision takes place that would seem to be indicated by the analysis and costs come out of the teacher's pocket.

Training. In the larger picture, relatively little (4%) is spent on training.

3. Who bears the costs?

The federal and state governments cover most of the costs (78%). However, families also contribute as do teachers from their own pockets. Parents contribute in cash, with purchases of materials and clothing for their children, as well as by donating their time by participating in parental organizations and attending meetings. Although in this case an annual or monthly fee is not charged, parents are nevertheless expected to buy materials and special clothing and contribute food. Education is not totally free. Other examples will show a much higher burden for parents than is evident in this case.

Teachers contribute by covering costs for materials and by financing their participation in training and in "special events". This contribution was estimated at more than the equivalent of one month's salary.

We turn now to results from other preschools.

Results from the calculation of costs in 8 preschools

In this section, information will be presented and summarized for 8 preschools, two of which are indigenous rural preschools, two rural general preschools, three rural community preschools (one administered by CONAFE and two administered, respectively, by the states of Puebla and Oaxaca), and one urban general preschool in the city of Oaxaca.

Table 8 presents consolidated cost information for the 8 preschools. Table 9 summarizes selected characteristics and cost results for each preschool. The tables showing the cost estimates for each of the seven additional preschools are presented in Appendix 2. The first case presented in the table 8 has been examined in detail above and the table has been included in the text.

Table 8

Consolidated Cost Results for the 8 Preschool Centers, 2007-2008

	Público			Privado		Gasto Promedio Total	Distribución porcentual promedio
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios	$1,481,687	$525,826		$118,760		$2,126,273	33%
Aguinaldo y prima	$176,300	$65,200				$241,500	4%
Alimentación y hospedaje				$86,950	$200	$87,150	1%
2. Infraestructura: Construcción	$1,000	$269,280	$4,900	$96,323		$371,503	6%
3. Infraestructura: Equipamiento	$18,878	$79,425	$5,205	$12,838	$771	$117,118	2%
4. Materiales	$20,851	$64,872	$6,000	$84,060	$32,460	$208,244	3%
5. Suministros	$48,186	$20,881				$69,067	1%
6. Alimentación	$23,200			$2,264,995		$2,288,195	36%
7. Gastos Indirectos	$450	$11,310			$9,900	$21,660	0%
8. Transporte	$0			$180,600		$180,600	3%
9. Capacitación	$13,500	$51,050			$35,746	$100,296	2%
10. Supervisión	$6,472	$1,523				$7,995	0%
11. Uniformes				$216,050		$216,050	3%
12. Comité Escolar				$252,984	$4,342	$257,326	4%
13. Otros		$5,000		$77,629	$62,240	$144,869	2%
Total	$1,790,525	$1,094,367	$16,105	$3,391,189	$145,659	$6,437,845	
Gasto promedio por alumno	$4,060	$2,482	$37	$7,690	$330	$14,598	100%
Proporciones	27.8%	17.0%	0.3%	52.7%	2.3%	100%	
Proporciones	**45.1%**			**54.9%**		100%	

Interpreting the results

The reader will note that seven of the eight schools in Table 9 are rural schools. Four different entities administer these schools: Indigenous Education, General Education, CONAFE, and state organizations charged with overseeing community-based programs. They also vary in terms of their quality rating (from 2.09 to 3.04) but it should be noted that all are rated relatively low in quality, with only one of the seven schools reaching, barely, the minimum level of quality (3.00) that is hoped for in all schools. The schools are found in three states: Oaxaca, Puebla and the State of Mexico.

Table 9.-- Summary of Characteristics and Selected Results for 8 Preschools

	Characteristics of Preschool				Selected cost results				
	students /teacher	Urban rural	Quality *	Type of preschool	Per student Cost**	% Gov	% Par-ents	% Salaries	% Alimen-tación
1	54/3	R	2.16	Indigenous	12,189	78	12	66	7
2	40/1	R	2.09	Indigenous	9,011	48	50	33	31
3	63/2	R	2.72	General	13,028	67	32	53	14
4	30/2	R	2.62	General	12,628	64	28	48	7
5	25/2	R	3.04	Community (CONAFE)	13,409	37	60	40	18
6	74/3	R	2.77	Community (Puebla)	16,498	17	83	25	60
7	80/4	R	2.32	Community (Oaxaca)	16,625	34	66	23	58
8	75/4	U	3.68	General	18,109	47	51	41	32
Consolidated results***					14,598	45	53	38	36

* The score is the overall quality score calculated by applying the Scale for Evaluating Quality in Preschool Centers, version 2.2. (See Appendix 2)

** In Mexican pesos. To convert to US$ divide by 10.6 which was the exchange rate at the time of the field work.

*** The totals are not averages of the respective columns in which they are found. This is because the different schools have different numbers of children, a factor that had to be taken into account when consolidating the data.

Per student costs

For this small sample of schools, the consolidated per student cost is $14,598 pesos (US$1,377), with a range from $9,011 to $18,109 (US$850 to US$1,708). This per student cost places the set of preschools analyzed here somewhat above the estimate of $11,100 presented in the Annual Report of the Secretariat of Education. It should be kept in mind, however, that the official figure does not include the contributions made by families. If we took out the 53% contributed by families and the 2% contributed by teachers, the per-child cost would be $6,594, much lower than the reported national average. It suggests that government support is not getting to rural areas.

The number of students per adult in each school might be expected to influence the per student cost, with a higher ratio bringing a lower cost. This relationship does not seem to hold except in the extreme case of the preschool with 40 students for one teacher which has the lowest per student cost. Schools with ratios of 15 and 18 to 1 have lower per student costs than a school with 32 to 1. Obviously various other factors come into play.

The distribution of costs by categories

The two categories that have the highest percentages in the distribution are **salaries** and **food**.

Salaries and benefits. Salaries and benefits account for only 38% of total costs in the eight schools studied. The range across the preschools of the percentage of salaries to

total costs is from 66% to only 23%. The preschool with the highest percentage of total costs devoted to salaries is the rural indigenous preschool described in the detailed example presented above.

The rural community preschool administered by CONAFE (Number 5 in Table 9) merits special discussion. In this case, we have included in salaries and benefits an estimate for the room and board that the community is asked by CONAFE to provide to the teachers. These teachers are secondary school graduates who receive very little money during the limited time they are recruited by CONAFE to teach in the preschools.[27] If we included only their payment in pesos, then the percentage of salaries to total costs in the CONAFE school would be only 12%. This is the only school in which parents cover a part of the support for teachers; the parental share is greater than the governmental share in this case. The fact that the funds provided for salaries are low does not mean that the per-student cost is low; in the CONAFE case, the number of students per teacher is low (12.5 to 1) and this pushes per student costs up. [28]

Food. An important result of this study has been to verify that a relatively high percentage (36%) of total costs goes toward feeding children while they are in the preschool. This is so despite the fact that only two of the preschools received very modest government food rations. Indeed, 99% of the cost of the food provided (for consumption in the school) was covered by parents through assessments to purchase food or by giving additional food to their children for a morning snack in the school.

This suggests that the view by parents and teachers is of development in preschools as an integral process involving nutrition as well as learning. But in general, parents are the ones who are requested to provide the food. This was true for the urban preschool in the sample as well as for the rural preschools.

At the same time, the unknown in this equation is whether or not the food provided is seen as a substitute for food provided at home or as a supplement. Our assumption is that it is a supplement. If it is not, then this large category should be eliminated from the calculations and the total and per-student costs would drop considerably, as would the estimates of parental contributions.

Infrastructure. Combining buildings and grounds with equipment, the estimate is that infrastructure accounts for only about 8% of total costs. Of that amount, the government covers 75%.

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[27] These students provide their services because CONAFE has agreed to give them scholarships to continue their studies following their service year(s) teaching preschool. If an estimate had been made of the cost of the scholarship-in-lieu-of-salary, then the cost would have increased. We do not, however, have an estimate of what that future cost might be so stayed with the actual cost during this school year. Moreover, the benefit from the scholarship would accrue to the student teacher in the future and not to the particular school in which they are teaching and its students.

[28] This is a particularly interesting case because the community did not want to take on the expense of a second teacher for a group of only 25 students but CONAFE insisted. As a result, one family took in both teachers and the "community" contribution to their support while teaching is really a contribution by one family.

Materials. Very little is spent on materials (3% of total costs). Families and teachers cover 56% of the costs in this category.

Overhead. In our estimates, very little is spent on overhead. Even if we were to switch the costs of cleaning and of some supplies to this category it would not change the amount for overhead significantly.

Training. Again, a small amount, relatively, is spent on training, 35% of which is covered by the teachers and directors who participate in the training.

Supervision. When costs are constructed for each school, this cost is insignificant in the overall picture, at least in this group of mostly rural schools.

Who covers the costs and in what categories?

Table 10.—Percentage share of costs, by cost dimension

Category of costs	Government			Non-government	
	Federal	State Local	Special Programs	Family Commun	Staff
Salaries & Benefits	70%	25%		5%	
Infrastructure	4%	71%	2%	22%	
Materials	10%	31%	3%	40%	16%
Supplies	70%	30%			
Food	1%			99%	
Overhead	2%	52%			46%
Training	13%	51%			36%
Transportation				100%	
Supervision	81%	19%			
Clothes				100%	
Committees				98%	2%
Other		3%		54%	43%

From table 9, we see that parents cover more than half the total costs (53%). That participation is concentrated in several categories. From table 10 it is clear that food, clothing and transport are costs that families are expected to assume. The most important contribution is to supplementary feeding. However, parents and community also have an important role in providing materials and in committee work.

Costs and quality

There does seem to be a relationship between cost and quality. The preschool with the lowest quality rating was the preschool with the lowest per student cost. The school with the highest quality rating was the preschool with the highest per student cost. If a line is drawn connecting these two on a graph four other preschools are close to the line

suggesting an overall relationship in the small sample. The two schools that do not fall close to the line are both community schools supported from state funds that are relatively expensive but have very low quality.

Costs and equity

Unfortunately it is not possible to draw firm conclusions about the costs and equity because the sample is small and because we were not able to obtain data from the preschools in the Federal District. However, the fact that the urban school in Oaxaca has the highest cost of the schools studied in detail suggests that this might be the case for other urban schools. However:

The relationship between costs and quality shown in the preceding section suggests that there may be important inequities.

V Conclusions and Policy Implications

A. Conclusions

Even the few cases that have been presented, with their bias toward preschools in rural areas, show the value of calculating and comparing costs constructed at the level of individual schools. They permit several conclusions about the level of costs, who bears the costs, their relationship to quality and about the methods used to estimate costs.

About per-student costs

In the sample of schools studied, almost all of which were rural, the consolidated per student cost was estimated to be $14,598 pesos (US$1,377). The estimate includes costs borne by parents and school staff as well as by different levels and programs within government. It includes estimates of salaries and benefits, infrastructure, materials and supplies, food, overhead, transport, uniforms, training, supervision and participation in school committees and special events.

This figure is higher than that presented by the SEP in its annual work report but, if only costs borne by the federal government were included – as is the case in the SEP estimate – the level of costs for the preschools in this study would be considerably lower. This suggests the importance of looking beyond cost estimations that are based only on federal budget figures and do not, therefore, constitute an estimate of total costs.

The consolidated cost figure is higher than the per capita income estimates for Mexico (about US$12,800), even for the predominantly rural schools in the sample.

The cost estimates ranged from $9,011 to $18,109 (US$850 to US$1,708). The differences among schools are influenced by but not strongly related to the size of the school or to the number of students per teacher; other factors come into play such as the size of the parental contributions for food and participation in school activities.

The per-student costs seem to have risen significantly in the last 15 years. Estimates from two case studies of two similar preschools using a similar method done in 1995 were US$350 and US$436, considerably lower than the present estimates. One factor contributing to the rise in costs has been the improvement in teacher's salaries. In 1995, teachers earned the equivalent of approximately 4 minimum salaries whereas in 2008 they earned between 7 and 8 minimum salaries.

About the distribution of costs by category

At the school level, salaries and benefits account for only 38% of total costs. The difference between this estimate and others that suggest salaries and benefits make up 90% or more of costs is a product of the way in which costs were estimated; in this study total costs were sought. The results from this study are similar to the Chilean study cited in Chapter 2 in which a similar methodology was applied to estimating costs.

It should be noted that although salaries and benefits are not an enormous part of total costs they continue to be the largest component of costs.

Contributions by parents to feeding in the schools constituted 36% of the total costs. This suggests an integral view of early childhood development is being applied. The importance of this cost category varied widely from preschool to preschool, accounting for only 7% of total costs in two schools as compared to 60% in one school. The importance of feeding seems to increase with distance from urban centers; it was particularly prominent in the two state-administered community-based preschools.

Costs of infrastructure accounted for 8% of total costs, most of which comes from estimates of what it would cost to rent a similar facility. In the larger picture, the cost of the infrastructure is not a large expense.

The lack of expenditure at the school level for supervision is notable. Although there may be alternative ways to supervise that do not involve visits to the schools, the lack of direct accompaniment for the preschools in the sample appears to be an unfortunate fact. This opinion is based on other evaluations in the same preschools and others where a strong relationship was identified between supervisory visits and the quality of the education provided.

About who bears costs

The government, combining federal and state levels, covers less than half (45%) of total costs as estimated in this exercise, this despite the fact that all schools in the sample were public schools. In the three community schools, the government covered less than 40% of the costs with the extreme being one community-based preschool in which the governmental share was only 17%.

Parental contributions are mainly to feeding; 99% of that large cost category was covered by parents. It was not known whether this contribution is to supplementary feeding or whether this is seen by parents as a substitute for feeding at home; if it is the latter, total costs should be reduced by taking out this seemingly important contribution. Nor do we know whether the funds used for feeding come from a source such as Opportunidades or whether it comes from regular family income.

Parents seem to be counted on also for contributions to school clothing and some materials and supplies. They make an important in kind contribution through their participation in committee work.

Teachers may contribute as much as a month's salary, mainly to cover costs of materials, expenses related to their on-going training and time spent in "extra" committee work or "special events".

About costs and quality

Per-child cost seems to be related to quality in the group of preschools studied. The small and skewed sample does not allow a broad generalization. However, the schools with the highest and lowest quality scores were also the schools with the highest and lowest per-student costs and the remaining preschools fell roughly along a line determined by these two extremes, with only two exceptions, both community-based preschools in which relatively high cost (linked mainly to feeding) was associated with relatively low quality.

About costs and equity

Inequities are suggested by the relationship cited above between cost and quality. The preschools of lowest quality receive the least funds per student.

Other conclusions

About efficiency

One of the ancillary findings of this study is that There is considerable room for improving the delivery and use of resources. This ancillary finding of the study appeared even though it was not a specific subject of inquiry. Among the inefficiencies encountered were:

- Duplicate delivery of equipment so that schools had to store unneeded chairs and tables.
- Delivery of computers to places without electricity and without making sure that those receiving the computers know how to use them
- Making books unavailable to children for fear they will be destroyed.
- The provision of training without follow-up accompaniment so that the value of the training is lost.

About accounting and transparency at the local level

In the course of the study we found that most schools do not do a good job of accounting for what has been acquired during the school year. A major part of the resources come from the federal government which does not require strict accounting.

Participation in the Schools of Quality Program (PEC) has improved reporting and transparency, not only to the government but also to parents. It has also been a cause of some discomfort because the additional paper work requires additional time for which pay is not made. In addition, directors are not given courses or helped on the job with accounting, a skill they have not acquired previously as they have moved up through the system.

It is very difficult to sort out federal and state costs. States do not do a good job of accounting.

About the method for estimating costs

The general method for constructing costs at the preschool level that we have proposed and with which we have experimented is reasonable but difficult. The idea of working with "ingredients" is sound and tested. Constructing costs at the local level has several advantages that have been touted throughout this report, not the least of which is to be able to analyze the distribution of costs among categories and relate that distribution to who is bearing what costs at the school level.

To do a refined job of estimating costs, additional information is needed than that which was collected in this study. Indeed, the method probably requires something closer to an anthropological than a strictly economic approach. It requires going behind figures presented to find out details about what was included. It involves relatively prolonged conversations with staff and parents. There is a need to revisit and redo the questionnaire. Training should include more attention to seeking reasons for particular answers given.

Because of its qualitative characteristics, the method can be applied, at best, in a sample of well-chosen preschools and not at the system level. It can also be used as a way for individual schools to analyze their own costs.

B. Policy Implications

1. The idea that education is totally free to families whose children are in public schools is a myth. This does not mean that the Constitution needs to be changed but it does mean that the government needs to make an additional effort to absorb some of the educational costs presently borne by parents, particularly those with scarce resources. This has been done at other levels of the educational system through scholarship programs and conditional cash transfers provided through Oportunidades. It has not been done for the educational component at the preschool level.

2. Salaries are competitive and a way needs to be found to moderate increases in salaries. To do so would help moderate costs.

3. The preschool system could profit from additional investment in supervision which is virtually a forgotten category of costs at the school level.

4. It is importance to help create local accounting systems that will provide basis for planning and transparency. PEC has made a good beginning in this regard. It should be possible to study and draw lessons from that experience and to apply them more widely.

5. A slight reduction in costs could be obtained by reducing inefficiencies.

6. Reform is needed in national educational accounting systems to make them more transparent.

Recommendations for additional studies

There are important gaps in our knowledge about the costs of preschool education. These include:

- Understanding of how states allocate resources to preschools
- Understanding of the feeding costs in preschools, who bears them and why.
- A more extensive study of the relationship between costs and preschool quality.
- A closer examination of the structure of salaries and benefits.

It will be useful to continue to mine the information obtained in this costing experiment.

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Appendix 1

Instrument for Collecting Information about Costs of Preschooling at the Center Level

ESTUDIO DE LOS COSTOS DE LA EDUCACIÓN PREESCOLAR

Nombre del Encuestador: _____ ***Fecha de visita:*** _____

Folio: _____

Nombre del Centro de Trabajo: _____

Clave del Centro de Trabajo: | | | | | | | | | | |

Nombre del Director: _____

Horario del centro de trabajo: de _____ a _____

Nombre de la persona que contesta el cuestionario: _____

Puesto de la persona que contesta el cuestionario: _____

Identificación Geográfica:

Estado: _____

Municipio: _____

Localidad: _____

Tipo: ( ) Urbano

( ) Rural

Indique con una **X** el servicio y el sostenimiento del centro escolar:

Servicio	**Sostenimiento**		
	Federal	**Estatal**	**Privado**
General			
Indígena			
Comunitario			
CAIC			
CADI			

Ciclo escolar	**Ciclo Escolar 2007-2008 ***			
	Primero	**Segundo**	**Tercero**	**Total**
Matrícula				
Docentes				
Personal Total				

* Información reportada en el Formato 911 de Inicio de Cursos

Folio: _____

Costos de infraestructura

Local donde funciona la escuela:

Marcar con una X

Local		Actualmente
Arrendado		
¿Quién proporciona el local?	Privado	
	Del Municipio, utilizado sin pago	
	Del Estado, utilizado sin pago	
	De la comunidad, utilizado sin pago	
	Prestado por una empresa privada	
	Otra forma de utilización, sin pago	
	¿cuál?	

¿Cuánto paga por el arriendo? — Monto mensual: ____

Si hubiera tenido que pagar por el inmueble de iguales condiciones, ¿Cuánto sería un pago justo? ____

Descripción del Inmueble:

Áreas	Número total	Tamaño estimado en metros cuadrados	Material de Construcción	Observación
Salones de clase				
Baños				
Sala de usos múltiples				
Sala de Administración				
Biblioteca				
Comedor				
Cocina				
Sala de computadores				
Jardines o patios				
Otro				
Otro				
Total				

Valor del m^2 construido [1] $ ____

Valor del m^2 sin construir [1] $ ____

Años de la construcción ____

[1] **Esta información se puede obtener de la boleta predial**

Folio: _____

Costos en equipo para realizar las labores en el centro de trabajo

Equipo	Cantidad	¿En que año aproximadamente fue adquirido?	Vida útil en años	¿Quién los aportó a la escuela?	¿Es utilizado?	Observaciones
1. OFICINA						
Escritorios						
Fotocopiadora						
Archiveros						
Mesas						
Sillas						
Libreros						
Computador						
Impresoras						
Teléfono						
Fax						
Televisores						
Videograbadoras						
Proyectores						
Pantallas						
Reproductor de DVD						
Equipo de sonido						
Máquina de Escribir						
2. COCINA						
Horno						
Estufa						
Refrigerador						
Licuadora						
Mesas						
Cacerolas u Ollas						
Vajillas						
Cubiertos						
Ventiladores						

Folio: _____

Costos en equipo para realizar las labores en el centro de trabajo

Equipo	Cantidad	¿En que año aproximadamente fue adquirido?	Vida útil en años	¿Quién los aportó a la escuela?	¿Es utilizado?	Observaciones
3. AREAS DE RECREO						
Columpios						
Resvaladillas						
Sube y baja						
Llantas						
Chapoteadero						
Casa de muñecas						
4. BIBLIOTECA						
Escritorios						
Sillas						
Libros o acervos bibliográficos						
Archiveros						
Ficheros						
5. CÓMPUTO						
Escritorios						
Sillas						
Computadoras						
Impresoras						
Acceso a internet						

Folio: _____

Costos en equipo para realizar las labores en el centro de trabajo

Equipo	Cantidad	¿En que año aproximadamente fue adquirido?	Vida útil en años	¿Quién los aportó a la escuela?	¿Es utilizado?	Observaciones
6. SALON DE USOS MÚLTIPLES						
7. BODEGA						

Folio: _____

Costos en equipo para realizar las labores en el centro de trabajo

Equipo	Cantidad	¿En que año aproximadamente fue adquirido?	Vida útil en años	¿Quién los aportó a la escuela?	¿Es utilizado?	Observaciones
8. AULAS	**Grado** _____					
Escritorio para la maestra						
Mesas tamaño adulto						
Sillas para adultos						
Mesas para niños						
Sillas para niños						
Ventiladores						
Libreros						
Repisas (estante)						
Computadoras						
Televisión						
Videograbadoras						
Sistema de sonido						
Casas de muñecas						
Bloques						
Libros						
Rompecabezas						

Folio: _____

Gastos en los que se incurren en el Centro de Trabajo

Gastos	2007	2008	Observaciones
	Noviembre	Enero	
Elementos de aseo			
Servicios Públicos			
Transporte			
Intereses por créditos			
Comisiones y otro tipo de gasto financiero (Bancos)			
Impuestos			
Papelería			
Material de oficina sin papelería			
Alimentos			
Material didáctico sin papelería			
Gasolina para vehículos			
Medicamentos y botiquín			
Utencilios, cubiertos,enceres y vajilla			
Mantenimiento y reparación:			
local			
vehículos			
muebles			
equipo			
Eventos especiales de integración y recreación			
Capacitación del personal administrativo			
Promoción y publicidad			
Sevicios:			
Luz			
Agua			
Teléfono			
Impuesto predial			
Otros			

Folio: _____

Otros Ingresos

Durante el ciclo escolar ¿ha recibido la escuela ayuda de donadores en especie o dedicando tiempo a labores en _____?:

Contribución en:	Si o No	Donación en especie (pesos)	Tiempo donado (horas)	Instancia que proporcionó la ayuda	Comentario
Mantenimiento o construcción					
Actividades del comité escolar					
Visitas de campo					
Material para la escuela					
Tienda o coperativa de la escuela					
Kermés					
Hospedaje del maestro en su hogar					
Alimentación del maestro en su casa					
Otros					

Folio: _____

Otra información

Concepto	Número de Visitas
¿Ha recibido visita de_____ ?	
Supervisor	
Jefe de sector	
Algún funcionario de la Secretaría de Educación Pública	
Algún funcionario de la Secretaría de Salud	
Algun otro funcionario del gobierno	

	Número de Personas
¿Cuántos alumnos más podrían atender en este mismo local y con este mismo equipo?	
¿Cuántos dentro del horario actual?	
¿Cuántas y cuales plazas serían necesarias para el establecimiento de un nuevo turno?	
(Señale las categorías que serán necesarias)	

	Número de Reuniones
Reuniones para servicio a la comunidad en el centro escolar	

Folio: _____

Número: _____

Datos Generales del Personal que Labora en el Centro Educativo

Datos Generales	**Antigüedad (Total de años en servicio)**	
	Edad	
Maximo Nivel Alcanzado de Escolaridad y Especialidad	**Primaria**	
	Secundaria	
	Capacitación para el Trabajo	
	Bachillerato	
	Profesional Técnico	
	Licenciatura	
	Posgrado	
Contratación	**Federación**	
	Estado o municipio	
	Escuela	
	Honorarios ¿quíen contrató?	
	Voluntariado	
Carrera Magisterial	**No aplica**	
	A	
	B	
	C	
	D	
	E	
Jornada laboral	**Tiempo completo**	
	Medio tiempo	
	Horas (cuantas)	
	¿Cuantas horas a la semana tiene que dedicar a actividades diferentes de las que le corresponde en su nombramiento? (Por ejemplo: sindicato, gestión administrativa, etc.)	
Condición de la plaza	**En servicio**	
	Con licencia por gravidez	
	Con licencia por enfermedad	
	Comisionado a otra escuela o centro	
	Comisionado a esta escuela	
Este apartado tiene que ser llanado con su talón de cheques		
Salario	**Salario Base Quincenal**	
Prestaciones	**Carrera Magisterial (quincenal)**	
	Otras Prestaciones (quincenal)	
	Material Didáctico (quincenal)	
	Créditos (descuento quincenal)	
	Prima Vacacional (anual)	
	Aguinaldo (anual)	
Sueldo	**Total Quincenal**	

Gastos cubierto por el trabajador	**Asistencia a reuniones o dirigencias**	
	Material Didáctico	
	Otras Contribuciones	

Número _____ *Folio:* _____

Cursos de Capacitación del Personal que labora en el Centro de Trabajo

Período en el que recibió la capacitación		**Ciclo Escolar 2007-2008**						
¿Cuántos cursos de capacitación se recibieron?								
Detallar los cursos en la siguiente sección:		**Curso 1**		**Curso 1**		**Curso 1**		**Curso 1**
Nombre del curso que tomó el trabajador								
Duración del curso (en días)								
¿Cuál fue la fuente de financiamiento de la capacitación?	**Federal**							
	Estatal							
	Municipal							
	Escuela							
	Trabajador							
Para asistir al curso cuanto gastó en:		**Monto**	**¿Quíen paga?**	**Monto**	**¿Quíen paga?**	**Monto**	**¿Quíen paga?**	**Monto**	**¿Quíen paga?**
Inscripción									
Alimentación									
Material									
Transporte									
Habitación									

Folio: _____

Datos Generales del Personal que Labora en el Centro Educativo

Número de persona	Lista de cotejo			
	Nombre del personal que trabaja el Preescolar (independientemente de si tiene una remuneración)	**Puesto / Nombramiento en la escuela**	**Encuesta de datos personales**	**Encuesta de capacitación**
1T				
2T				
3T				
4T				
5T				
6T				
7T				
8T				
9T				
10T				
11T				
12T				
13T				
14T				
15T				
16T				
17T				
18T				
19T				
20T				

Folio: _____

Gasto de Hogares

1. Identificación del alumno (llenado por el encuestador):

Nombre: _____ **Grado:** _____

CURP: | | | | | | | | | | | | | | | | | |

2. Durante el año ¿ha realizado un gasto para ____?:

Contribución	Si o No	Gasto	Período	Comentario
Inscripción			Ciclo Escolar	
Mensualidades o cuotas			Mensual	¿cuál es la forma de calcular las cuotas?
Libros para la escuela			Ciclo Escolar	¿cuáles?
Útiles			Ciclo Escolar	¿cuáles?
Material para la escuela y tareas			Ciclo Escolar	¿cómo cual?
Uniforme			Ciclo Escolar	
Ropa especial			Ciclo Escolar	¿cuáles préndas?
Hospedaje			Ciclo Escolar	¿qué tipo?
Transporte			Semanal	¿qué tipo?
Dinero para alimentación para su hij@ ($)			Semanal	
Comida para su hij@ o para el salón			Semanal	
Educación especial o enseñanza adicional			Ciclo Escolar	
Cuidado del niño o estancia infantil (horas extra particular)			Ciclo Escolar	
Pago de imprevistos como visita de la escuela a museos, o al parque …			Ciclo Escolar	
Equipo escolar: máquinas de escribir, calculadora, computadora, etcétera en casa			Ciclo Escolar	¿cuáles?
Reparación y/o mantenimiento de equipo escolar			Ciclo Escolar	
Otros				

3. Durante el año ¿ha ayudado a la escuela donando en especie o dedicando tiempo a labores en este ciclo escolar en _____?:

Contribución	Si o No	Donación en especie (pesos)	Tiempo donado (horas)	Comentario
Mantenimiento o construcción				
Actividades del comité escolar				
Asistencia a reuniones				
Visitas de campo				
Material para la escuela				
Tienda o coperativa de la escuela				
Kermés				
Hospedaje del maestro en su hogar				
Alimentación del maestro en su casa				
Otros				

Folio: _____

Datos de la Asociación de Padres de Familia

Nombre del presidente de la asociación de padres de familia	
Mesa direciva:	**Horas invertidas en su función en la escuela en lo que va el ciclo escolar 2007-2008**
Presidente	
Secretario	
Tesorero	

Folio: _____

Datos de la Consejo de Participación Social

Nombre del Consejo de Participación Social	
Mesa direciva:	**Horas invertidas en su función en la escuela en lo que va el ciclo escolar 2007-2008**
Presidente	

Appendix 2
La Escala de Evaluación de Calidad en Centros Preescolares (ECCP, Versión 2.2)

Para este estudio se utilizó el instrumento denominado *Escala de Evaluación de la Calidad en Centros Preescolares* (ECCP 2.2). Esta escala tiene el propósito de ayudar a los profesionales de la educación, investigadores y diseñadores de políticas en el proceso de evaluación de la calidad educativa en centros preescolares. El marco conceptual y de reflexión que subyace en la ECCP 2.2 se basa en dos fuentes principales: los aspectos que la investigación ha detectado como *factores clave* que intervienen en la calidad educativa y en los *criterios de calidad* que ha descrito María Victoria Peralta (2000).

La ECCP 2.2 es concebida como una *herramienta para construir un lenguaje compartido* entre los diferentes actores del proceso educativo. Pensamos que nuestra búsqueda de una definición operacional de la calidad educativa en el nivel preescolar puede alimentar el proceso de diálogo y negociación. Este instrumento lejos de representar "la verdad" puede contribuir a reexaminar la estructura, los supuestos y resultados del sistema actual de educación preescolar. Además de ofrecer a los investigadores y evaluadores un proceso de medición, tenemos la esperanza de que se generen otro tipo de experiencias, tales como: focalizar la atención a detalles importantes en el quehacer educativo; crear una imagen de los Jardines de Niños como un sistema abierto y complejo: orientar el diseño de planes específicos para la mejora continua de la calidad educativa; posibilitar la implementación de metas concretas de calidad educativa; reflexionar y buscar alternativas a los problemas que suceden cotidianamente en los Jardines de Niños.

La Escala incluye una definición amplia del medio ambiente de aprendizaje, tanto para el funcionamiento del centro en general como para la organización y actividad dentro de las aulas. Pretende ofrecer una descripción y evaluación de los aspectos que influyen en las actividades diarias de los niños y las niñas y los profesionales de la educación que trabajan en un centro.

La ECCP 2.2 esta conformada por dos partes y cuatro dimensiones:

Escala de Evaluación de la Calidad en Centros Preescolares		
C A L I D A D	**Centro**	**Insumos** **Proceso Educativo** **Gestión Educativa** **Relación con el entorno**
	Aula	**Insumos** **Proceso educativo** **Gestión Educativa**

La evaluación y la Escala se divide en dos partes: la primera evalúa las características generales del centro y el trabajo realizado por los responsables de la gestión educativa. La segunda evalúa las características generales del aula y el trabajo realizado por las educadoras en el interior del aula. Las dimensiones son las siguientes:

I) **insumos.-** esta dimensión se refiere a los aspectos de recursos humanos y materiales suficientes para cumplir con los objetivos del programa educativo.

II) **Proceso Educativo**.- Esta dimensión tiene su centro en la noción de aprendizaje activo y de desarrollo integral de los niños y las niñas.

III) **Gestión Educativa**.- La noción de gestión educativa está entendida como un proceso de aseguramiento del bienestar de los niños y las niñas y como una acción para proyectar a los centros a una visión al mediano y largo plazo.

IV) **Relación con el entorno**.- Observa la comunicación y promoción de asuntos educativos de parte de la escuela con la familia y en la comunidad, y el nivel de la participación de la familia y la comunidad dentro del proceso educativo.

Cada dimensión está compuesta por varios ítems. Cada ítem contiene un conjunto de aseveraciones que pueden ser puntuadas en una escala de cinco valores:

1 (Inadecuado), 2 (Incipiente), 3 (Básico), 4 (Bueno), 5 (Excelente)

La ECCP 2.2 posee 45 ítems en total; 25 para analizar el trabajo del centro y 20 para el trabajo realizado dentro del aula. En el siguiente ejemplo se puede observar que cada nivel de calidad presenta criterios, descritos en lenguaje simple. El reto más importante fue crear los criterios lo suficientemente claros para pasar de un puntaje al siguiente. Nótese que cada ítem tiene un espacio para comentarios relacionados al tema del ítem o al puntaje que el evaluador otorga cada uno de ellos.

Ejemplo de un Ítem de la ECCP

d. Ambiente de aprendizaje				
d.2 Las actividades de la jornada propician el aprendizaje activo				
Inadecuado	Incipiente	Básico	Bueno	Excelente
1	2	3	4	5
⏩ Las actividades que predominan son instructivas (Se espera que todos hagan lo mismo, al mismo tiempo)	⏩ Las actividades son instructivas ⏩ Se permite que los niños exploren y manipulen limitadamente (La exploración está restringida a lo que se supone que se debe hacer)	⏩ Las actividades permiten al niño explorar, manipular, tocar, escuchar (El resultado final es decisión del educador. Está determinado un solo tipo de respuestas)	⏩ Las actividades permiten al niño interactuar con la realidad, tocando, explorando, examinando, experimentando(El educador propicia la exploración e innovación, se esperan resultados diversos)	⏩ Las actividades permiten al niño interactuar con la realidad a través de los sentidos (el educador propicia la exploración e innovación, se esperan resultados diversos) ⏩ Los niños desempeñan un papel activo (observando, preguntando, discutiendo, aplicando, construyendo, exponiendo)
Comentarios:				

En el siguiente cuadro, presentamos la lista de los 45 ítems.

Los Ítems de la Escala de Evaluación de Calidad Educativa en Centros Preescolares

CENTRO y RESPONSIBLE
1. El centro cuenta con suficientes espacios para dar sus servicios
2. El centro cuenta con servicio sanitario funcional y en buen estado
3. El centro cuenta con el equipo adecuado para la prevención de accidentes y desastres
4. Existen espacios exteriores para el juego seguro, con buen mantenimiento y que promueve la actividad corporal (Trepar, brincar, colgarse, columpiarse, jalar, empujar, correr)
5. El currículum tiene una visión integral del desarrollo
6. El currículum promueve prácticas de cuidado y salud
7. El centro utiliza un proceso de detección de necesidades (salud, nutrición, aprendizaje) del niño
8. El centro utiliza un proceso de detección de habilidades del niño
9. El centro utiliza un proceso de registro de necesidades, habilidades e intereses del niño
10. El centro promueve la higiene y el valor nutricional de los alimentos que se ofrecen o comercializan en su interior
11. El centro tiene un proceso de planeación de actividades académicas basadas en un programa, necesidades e intereses de los niños
12. El centro tiene un proceso colegiado de planeación de actividades académicas
13. El centro tiene un proceso de supervisión y evaluación continua sobre el desarrollo y habilidades de los niños
14. El centro tiene un proceso de registro de evaluación
15. El centro realiza un procedimiento de canalización oportuno
16. El centro cuenta con una formulación por escrito de la filosofía o misión del centro y se difunde entre la comunidad escolar
17. El centro cuenta con un diagnóstico general e integral del funcionamiento del centro
18. El centro realiza un plan anual de trabajo
19. El centro aplica algún proceso de mejora continua de la calidad
20. El centro tiene un proceso de acompañamiento para apoyar el proceso educativo
21. El centro utiliza un proceso de identificación de expectativas de la familia
22. El centro tiene un proceso de comunicación permanente con la familia
23. El centro tiene un proceso para evaluar el grado de satisfacción del servicio
24. El centro y la comunidad participan en actividades conjuntas
25. El centro promueve la relación con la comunidad para el mejoramiento de su servicio
AULA y EDUCADOR
1. l aula cuenta con espacio suficiente, con buen mantenimiento, luz y ventilación adecuada
2. El aula ofrece diferentes escenarios o áreas o rincones de trabajo
3. El aula cuenta con materiales suficientes, ordenados y al alcance de los niños
4. El aula cuenta con diversos materiales que representan distintas culturas y que promueven la identidad de la cultura local
5. La proporción educadores/niños en el aula es adecuado
6. Las educadoras tienen el entrenamiento adecuado para realizar sus funciones diarias
7. El educador utiliza un proceso de identificación de intereses del niño
8. La planeación de las actividades del aula se hacen de acuerdo al programa e intereses del niño
9. Establecimiento de una jornada consistente de trabajo
10. La jornada de trabajo hace un uso equilibrado de actividades: individuales, colectivas y de pequeños grupos
11. La jornada de trabajo equilibra actividades iniciadas por el adulto y los niños
12. Se observa que los adultos y los niños siempre están involucrados en alguna experiencia de aprendizaje y las transiciones entre actividades son fluidas
13. Las actividades de la jornada propician el aprendizaje activo
14. El educador utiliza estrategias de observar, preguntar, repetir y ampliar en su conversación con los niños
15. El educador emplea cotidianamente diversas formas de lenguaje y propicia que los niños también las use
16. El educador mantiene una perspectiva de todo el salón de clase, aún cuando trabaja con un niño individualmente o con grupos pequeños
17. El educador aplica un sistema efectivo para la solución de conflictos sociales
18. El educador establece relaciones afectivas y respetuosas con los niños
19. Se promueve que los niños tengan una interacción entre ellos positiva y colaborativa entre ellos
20. La educadora promueve hábitos de higiene durante la jornada completa

Appendix 3

Consolidated information about costs in Seven Preschool Centers

Resultados del Jardín de Niños Papalocalli ciclo escolar 2007-2008

	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios		$137,986		$118,400		$256,386	**21%**
Aguinaldo y prima		$48,000				$48,000	4%
Alimentación y hospedaje					$100	$100	0%
2. Infraestructura: Construcción				$29,945		$29,945	2%
3. Infrastructura: Equipamiento		$6,779	$2,291	$1,170		$10,240	1%
4. Materiales		$3,729		$23,360		$27,089	2%
5. Suministros		$1,081				$1,081	0%
6. Alimentación				$730,133		$730,133	**60%**
7. Gastos Indirectos		$6,060			$200	$6,260	1%
8. Transporte						$0	0%
9. Capacitación		$3,000			$1,040	$4,040	0%
10. Supervisión		$914				$914	0%
11. Uniformes				$22,940		$22,940	2%
12. Comité Escolar				$64,103		$64,103	5%
13. Otros				$19,605		$19,605	2%
Total	$0	$207,548	$2,291	$1,009,656	$1,340	$1,220,834	100%
Gasto por alumno	$0	$2,805	$31	$13,644	$18	$16,498	
Proporciones	0%	17%	0%	83%	0%	100%	
Proporciones	**17%**			83%		100%	

Resultados del centro educativo Donaji ciclo escolar 2007-2008

Componentes	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios		$300,000		$360		$300,360	**23%**
Aguinaldo y prima						$0	0%
Alimentación y hospedaje						$0	0%
2. Infraestructura: Construcción	$1,000		$300	$649		$1,949	0%
3. Infraestructura: Equipamiento		$62,704	$343			$63,047	5%
4. Materiales		$61,144		$30		$61,174	5%
5. Suministros		$19,800				$19,800	1%
6. Alimentación				$768,000		$768,000	**58%**
7. Gastos Indirectos		$300				$300	0%
8. Transporte						$0	0%
9. Capacitación						$0	0%
10. Supervisión						$0	0%
11. Uniformes				$82,667		$82,667	6%
12. Comité Escolar				$32,670		$32,670	2%
13. Otros							
Total	$1,000	$443,948	$643	$884,376	$0	$1,329,966	100%
Gasto por alumno	$13	$5,549	$8	$11,055	$0	$16,625	
Proporciones	0%	33%	0%	66%	0%	100%	
Proporciones	**34%**			66%		100%	

Resultados del Jardín de Niños Necoxcalco ciclo escolar 2007-2008

	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios	$400,035					$400,035	49%
Aguinaldo y prima	$35,000					$35,000	4%
Alimentación y hospedaje					$100	$100	0%
2. Infraestructura: Construcción		$89,880		$22,687		$112,567	14%
3. Infraestructura: Equipamiento	$3,050	$1,000	$571	$1,138		$5,760	1%
4. Materiales	$5,127			$821	$100	$6,049	1%
5. Suministros	$5,454					$5,454	1%
6. Alimentación				$117,600		$117,600	14%
7. Gastos Indirectos					$100	$100	0%
8. Transporte				$75,600		$75,600	9%
9. Capacitación	$4,500	$9,750			$1,120	$15,370	2%
10. Supervisión	$1,523					$1,523	0%
11. Uniformes				$17,010		$17,010	2%
12. Comité Escolar				$27,287		$27,287	3%
13. Otros				$1,310		$1,310	0%
Total	$454,689	$100,630	$571	$263,453	$1,420	$820,764	100%
Gasto por alumno	$7,217	$1,597	$9	$4,182	$23	$13,028	
Proporciones	55%	12%	0%	32%	0%	100%	
Proporciones	**68%**			32%		100%	

Resultados del Preescolar José Vasconcelos ciclo escolar 2007-2008

	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios	$36,000					$36,000	12%
Aguinaldo y prima						$0	0%
Alimentación y hospedaje				$86,950		$86,950	28%
2. Infraestructura: Construcción		$72,000		$1,567		$73,567	24%
3. Infraestructura: Equipamiento	$750			$5,855		$6,605	2%
4. Materiales	$2,488			$6,387		$8,875	3%
5. Suministros	$3,200					$3,200	1%
6. Alimentación				$56,000		$56,000	18%
7. Gastos Indirectos	$450					$450	0%
8. Transporte						$0	0%
9. Capacitación					$7,560	$7,560	2%
10. Supervisión	$914					$914	0%
11. Uniformes				$6,667		$6,667	2%
12. Comité Escolar							
13. Otros				$23,827		$23,827	8%
Total	$43,801	$72,000	$0	$187,252	$7,560	$310,614	100%
Gasto por alumno	$1,752	$2,880	$0	$7,490	$302	$12,425	
Proporciones	14%	23%	0%	60%	2%	100%	
Proporciones	**37%**			63%		100%	

Resultados del CEPI Lic. Benito Juárez ciclo escolar 2007-2008

	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios	$101,713					$101,713	28%
Aguinaldo y prima	$16,300					$16,300	5%
Alimentación y hospedaje						$0	0%
2. Infraestructura: Construcción		$14,400		$4,455		$18,855	5%
3. Infraestructura: Equipamiento	$9,679	$1,017		$2,333		$13,029	4%
4. Materiales	$1,420			$167	$6,000	$7,587	2%
5. Suministros	$5,362					$5,362	1%
6. Alimentación	$22,000			$89,333		$111,333	31%
7. Gastos Indirectos		$600				$600	0%
8. Transporte						$0	0%
9. Capacitación						$0	0%
10. Supervisión		$609				$609	0%
11. Uniformes				$17,067		$17,067	5%
12. Comité Escolar				$54,854		$54,854	15%
13. Otros				$11,699	$1,440	$13,139	4%
Total	$156,474	$16,626	$0	$179,908	$7,440	$360,448	100%
Gasto por alumno	$3,912	$416	$0	$4,498	$186	$9,011	
Proporciones	43%	5%	0%	50%	2%	100%	
Proporciones	**48%**			52%		100%	

Resultados del centro educativo Jesus Reyes Heroles ciclo escolar 2007-2008

Componentes	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, CONAFE, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios	$500,930					$500,930	37%
Aguinaldo y prima	$58,000					$58,000	4%
Alimentación y hospedaje						$0	0%
2. Infraestructura: Construcción			$4,000	$891		$4,891	0%
3. Infraestructura: Equipamiento	$2,973	$1,561		$873		$5,407	0%
4. Materiales	$7,805			$22,055	$6,900	$36,760	3%
5. Suministros	$28,170					$28,170	2%
6. Alimentación				$435,000		$435,000	32%
7. Gastos Indirectos		$450			$9,600	$10,050	1%
8. Transporte				$105,000		$105,000	8%
9. Capacitación	$9,000	$26,250			$3,383	$38,633	3%
10. Supervisión	$3,350					$3,350	0%
11. Uniformes				$50,250		$50,250	4%
12. Comité Escolar				$72,823		$72,823	5%
13. Otros				$595	$8,300	$8,895	1%
Total	$610,228	$28,261	$4,000	$687,487	$28,183	$1,358,159	100%
Gasto por alumno	$8,136	$377	$53	$9,166	$376	$18,109	
Proporciones	45%	2%	0%	51%	2%	100%	
Proporciones	**47%**			53%		100%	

Resultados del centro educativo Rosario Vera Peñaloza ciclo escolar 2007-2008

Componentes	Público			Privado		Total de gasto	Distribución porcentual
	Federal	Estatal y Municipal	Programas Especiales (PNL, PEC, etc.)	Padres de familia y comunidades	Personal del Centro con recurso propio		
1. Personal							
Salarios y otros beneficios	$163,752					$163,752	43%
Aguinaldo y prima	$17,600					$17,600	5%
Alimentación y hospedaje						$0	0%
2. Infrastructura: Construcción		$33,000		$35,464		$68,464	18%
3. Infraestructura: Equipamiento		$6,364		$1,469	$771	$8,604	2%
4. Materiales	$3,699			$10,428	$4,560	$18,687	5%
5. Suministros	$3,500					$3,500	1%
6. Alimentación	$1,200			$24,000		$25,200	7%
7. Gastos Indirectos		$1,800				$1,800	0%
8. Transporte						$0	0%
9. Capacitación		$7,200			$1,990	$9,190	2%
10. Supervisión	$76					$76	0%
11. Uniformes				$14,085		$14,085	4%
12. Comité Escolar							
13. Otros		$5,000		$19,675	$23,200	$47,875	13%
Total	$189,828	$53,364	$0	$105,120	$30,521	$378,834	100%
Gasto por alumno	$6,328	$1,779	$0	$3,504	$1,017	$12,628	
Proporciones	50%	14%	0%	28%	8%	100%	
Proporciones	**64%**			36%		100%	