

Early Care and Education  
in Massachusetts Public School  
Preschool Classrooms:  
Executive Summary

An executive summary of a report on the findings from  
**The Massachusetts Cost and Quality Study**  
Funded by the Massachusetts Department of Education

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## Preface

The message emanating from brain research and research on early care and education programs is clear: quality early experiences have a positive impact on the development of a young child, and contribute to greater school readiness. Providing early educational, emotionally supportive and nurturing experiences are vital in order for children to develop successfully.

There are over 165,000 children in early education and care programs in Massachusetts. The Commonwealth's substantial investment of over \$500 million in early childhood education, coupled with the high numbers of children in early care and education programs, makes understanding the quality of early care and education imperative, both to children's welfare and for planning effective state investments.

In 2000, the Department of Education, Early Learning Services, contracted with Wellesley College Center for Research on Women and Abt Associates to conduct a study of the cost and quality of early care and education in Massachusetts. The first report from this study, addressing early care and education for preschool-aged children in full-day, year-round centers, was released in 2001. We are pleased to now release the second report from this study, on the quality of early care and education in school-based, publicly-administered preschool classrooms. Future reports will address early care and education for infants and toddlers in full-day, year-round centers, as well as early care and education in family child care homes.

## Overview

Recent research on brain development, coupled with rising concerns about school readiness, has fueled an interest in the ways in which early care and education (ECE) can support young children's cognitive and language development. The research on ECE clearly indicates that preschool classrooms can play an important role. Children who attend high quality ECE programs, particularly those programs that offer greater language stimulation, show more advanced cognitive and language development (Burchinal, Roberts, Riggins et al, 2000; NICHD ECCRN 2000).

The early years are also crucial years for the development of social skills – the ability to make friends, to get along well with others, to cooperate in group activities, to understand others' perspectives – skills that are necessary to the development of self-esteem and social relationships, and to later school success. Research has found that higher quality ECE is associated with young children's social and emotional development (c.f., Lamb 1998). The quality and stability of children's relationships with their child care providers appears to be particularly important to children's social and emotional development (c.f., Howes & Hamilton 1992, 1993; Howes, Matheson & Hamilton 1994).

The cumulative evidence of the research on early care and education and children's development is clear; quality is consistently associated with children's development. As the National Research Council notes (2000, pg. 313), "...high-quality care is associated with outcomes that all parents want to see in their children, ranging from cooperation with adults to the ability to initiate and sustain positive exchanges with peers, to early competence in math and reading."

Massachusetts has a comprehensive system of early care and education that provides preschool programs for over 165,000 children. This ECE system includes non-profit and for-profit child care centers and nursery schools offering preschool programs, as well as preschool classrooms administered by public school systems. An estimated 27,600 children in Massachusetts attend preschool in public schools, about 18% of all children attending preschool programs (MA DOE 2001). These public school preschool classrooms are administered either by the schools themselves, and therefore under the purview of the Massachusetts Department of Education, or by private organizations (such as child care agencies), and therefore required to be licensed by the Massachusetts Office of Child Care Services. This report focuses only on those preschool classrooms that are administered by the public schools themselves.

## Research Questions

This report addresses five research questions:

- ❖ What are the characteristics of publicly-administered, school-based preschool classrooms in Massachusetts?
- ❖ What is the quality of early care and education in these classrooms?
- ❖ Does the quality of early care and education vary by the family income of the children served?
- ❖ What classroom characteristics are linked to the quality of early care and education in school-based preschool classrooms?
- ❖ What are the costs of public preschool education in the public schools?

This report presents the findings from the **second phase** of the Massachusetts Cost and Quality Study, which examined the quality of early care and education in **school-based, publicly-administered preschool classrooms**. The report is based on data from 95 such classrooms, randomly selected from a list of all schools housing preschool classrooms, as reported to the Department of Education by school districts from around the state. Preschool programs that were administered by private organizations and licensed by the Office of Child Care Services, although located in school buildings, were not included in the sample frame. Each classroom was observed by trained observers; program coordinators were interviewed by trained interviewers. The Appendix provides more information about the study methods.

This study was designed to provide an accurate, up-to-date picture of the quality of early care and education services for preschoolers attending these classrooms. This study was **not** designed to evaluate the effectiveness of specific regulations, subsidies

or other policies. Nor was it designed as an evaluation of the special education component of the classrooms. Answers to these and other questions would require a different study design than that used to provide this snapshot of early care and education for preschoolers in Massachusetts public schools.

## Summary of Results

The overall findings of this second phase of the Massachusetts Cost and Quality Study can be summarized in a few points.

❖ ***School-based, publicly-administered preschool classrooms fill a particular niche in the early care and education market.***

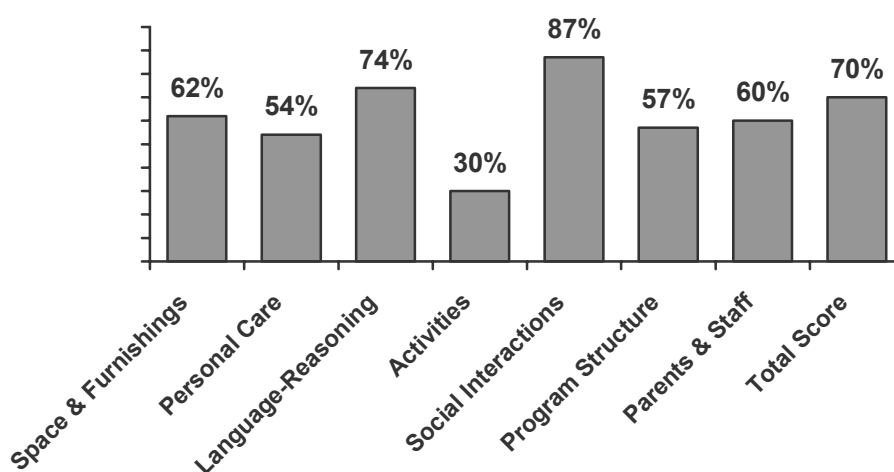
- ◆ **Inclusive classrooms.** These preschool classrooms were sometimes funded out of the regular education budget, or with Community Partnership funds, Title I funds or other grant funding. However, most of the preschool classrooms in the randomly selected schools were supported by Special Education funds. Special education funds support a range of programs, including inclusive classrooms, that is, classrooms that serve both regular education students and special education students. Inclusive preschool classrooms are expected to serve no more than 15 children at a time, and to include both children without identified special needs and up to 7 children with special needs. In our sample of schools housing publicly-administered preschool classrooms, we found that 90% of the preschool sessions were in inclusive classrooms.
- ◆ **Part-day, part-week sessions.**<sup>1</sup> Most of the observed preschool sessions operated part-day, and the majority operated part-week (fewer than five days per week). On average, sessions operated for 14.32 hours per week. Only 12% of all the sessions in the selected schools were full-day (at least five hours a day).
- ◆ **Staffing.** Each classroom had one primary teacher, with one or more instructional aides. In addition, inclusive classrooms (most of the sample) also had one or more specialists working with the classroom children for a combined average of 6.68 hours per week. The most common specialists were speech therapists (in 83% of the classrooms) and physical therapists (in 79% of the classrooms). Some classrooms also had children who had individual aides.

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<sup>1</sup> Many preschool classrooms operated more than one session, serving different children in each session. For example, one classroom could operate a Monday/Wednesday/Friday morning session, a separate Monday/ Wednesday/Friday afternoon session, a Tuesday/Thursday morning session and a separate Tuesday/Thursday afternoon session.

- ❖ **Most of Massachusetts’ publicly-administered preschool classrooms provide early care and education that meets or exceeds national standards for good quality.**
- ◆ The Early Childhood Environment Rating Scale, used in this study, is a nationally-used observational measure that provides benchmarks for different levels of quality. These benchmarks are labeled *Inadequate*, *Minimally Adequate*, *Good* and *Excellent*.

**Figure 1: Percent of Classrooms Meeting the Good Benchmark on ECERS-R Scales**



- ◆ **Three-quarters of the classrooms met or exceeded the Good benchmark on language and reasoning stimulation, and 87% met or exceeded the Good benchmark on social interactions.** This high level of stimulation and social interactions reflects, in part, the standards for teacher education in Massachusetts – every public school preschool teacher must have a 4-year degree, and 67% of the teachers in this sample had a master’s degree.
- ❖ **The level of quality for public school preschool programs serving lower income children was comparable to that of other public school programs in Massachusetts.**
- ◆ We compared programs in which 50% or more of the preschool children participated in the Child and Adult Care Food Program with programs with fewer or no children participating.<sup>2</sup> We found no significant differences in the quality of early care and education received by children in high-participation programs compared to children in other programs in Massachusetts.

<sup>2</sup> Children in families below 185% of the poverty line are eligible for the Food Program; as such, participation serves as a proxy measure of children’s family income.

- ❖ ***While the majority of the programs provide quality early care and education, there is room for improvement in opportunities for outdoor play and in meeting staff needs.***
  - ◆ More than half of the classrooms did not meet the Good benchmark on the availability of periods of free play both indoors and outdoors, weather-permitting, as well as both gross motor and less active play daily.
  - ◆ More than half of the classrooms did not meet the Good benchmark on provisions for the personal needs of staff (such as breaks and space for personal belongings), and opportunities for professional growth. However, the majority of classrooms met or exceeded the Good benchmarks for provisions for supervision and evaluation of staff, on the provisions for the professional needs of staff (space for storage, meetings, program administration), and on staff interaction and cooperation.
- ❖ ***Additional teacher training in early childhood education, beyond their formal education, such as the training provided by Community Partnerships Councils, raises the level of language-reasoning stimulation provided to children in a given classroom.***
  - ◆ While all preschool teachers are required to have at least a 4-year degree, we found that those teachers who had received additional training in early childhood education were more likely to provide the levels of stimulation associated with greater school readiness.
- ❖ ***Teachers in classrooms with fewer children, as well as better ratios of children to instructional staff, provided greater warmth and sensitivity and greater teacher engagement with the children.***
  - ◆ Teacher education and training are not enough to increase the levels of engagement, warmth and sensitivity. When teachers are responsible for fewer children, they are more likely to be able to spend time with an individual child and to be warm and sensitive to children's needs.
- ❖ ***Classrooms that were NAEYC-accredited scored higher on both stimulation and on warmth and sensitivity.***
  - ◆ NAEYC accreditation<sup>3</sup> is an important indicator of the quality of early care and education offered in publicly-administered, school-based preschool classrooms. Knowing that a program is NAEYC-accredited provides policymakers and consumers with additional information beyond that available from other indicators, such as the number of children enrolled, and teacher qualifications.

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<sup>3</sup> The National Association for the Education of Young Children (NAEYC) has established a voluntary accreditation standard for early care and education. For example, NAEYC recommends that 4- to 5-year-olds should be in groups of no more than 16 to 20 children, and that staff have specialized training in child development and early education.

❖ ***The majority of these preschool classrooms were inclusive classrooms, serving both children with special needs and children without special needs. The quality of the preschool programs did not vary with the types of special education services offered, or the specific diagnoses of the children with special needs.***

◆ One of the strengths of Massachusetts publicly-administered preschools is the fact that they use an inclusive model, serving both children with special needs and children without special needs in the same classroom. We found no variations in the quality of the early care and education offered to children associated with characteristics of the special education services.

❖ ***Per pupil expenditures in these inclusive preschool classrooms are estimated at \$11,187 per year, or \$21.68 per child hour, for preschool children with special needs and \$3,236 per year, or \$6.27 per child hour, for children in the regular education program.***

◆ These costs are not directly comparable to other reported costs for community-based preschool programs, because of differences in computational methods, program characteristics (part-day vs. full-day), labor force characteristics, and the prevalence of inclusive classrooms.

### **How can Massachusetts ensure that all public school preschool classrooms provide the stimulation and strong teacher-child relationships important to children’s development and school readiness?**

There are many options to be considered, and this study was not designed to evaluate specific policies. However, the findings suggest the importance of teacher training in early childhood education, NAEYC-accreditation, and smaller group sizes and ratios. Each of these factors is important, if Massachusetts is to continue to provide high quality early care and education in the public schools, and to expand high quality early care and education to all children attending Massachusetts’ public school preschools.

Massachusetts public preschools fill an important niche in the provision of early care and education – providing part-day, high quality early care and education to all children who attend public preschools, in an inclusive setting.

Public school preschool classrooms provided higher quality early care and education when: 1) teachers received training in early childhood education, beyond their formal education, 2) there were fewer children enrolled, combined with better ratios of children to instructional staff, and 3) the classroom was NAEYC-accredited.



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# Appendix: Study Design and Methods

This executive summary is based on a full report, *Early Care and Education in Massachusetts Public School Preschool Classrooms*, which presents the findings from the **second phase** of the Massachusetts Cost and Quality Study.

**Study Design.** We drew a random sample of 95 school-based, publicly-administered preschool classrooms, from a list of all schools housing preschool classrooms, as reported to the Department of Education by school districts from around the state. Preschool programs that were administered by private organizations and licensed by the Office of Child Care Services, although located in school buildings, were not included in the sample frame. The majority of the selected schools (92%) both agreed to participate and were able to schedule observation visits before the end of the school year.

Most school-based, publicly administered preschool classrooms are inclusive classrooms, designed to serve both children with special needs (the children with IEPs<sup>4</sup>) and children who have not been identified as having special needs (referred to in this report as “peers”). We restricted this study to those classrooms serving at least eight children, and in which no more than 50% of currently enrolled children had IEPs. When a school building had more than one preschool classroom (as is the case in Early Learning Centers and in some other schools), we gave priority to those classrooms serving 4-year-olds, rather than 3-year-olds, and randomly selected one eligible classroom.

Classrooms were selected from around the state. Given our sampling frame of a list of school buildings, the distribution by region reflects the regional distribution of school buildings across the state. Figure 1 shows the number of classrooms in this sample in each of the six Office of Child Care Services regions<sup>5</sup>: Region 1 (Western Massachusetts), Region 2 (Central Massachusetts), Region 3 (Northeastern Massachusetts) Region 4 (MetroWest), Region 5 (Southeastern Massachusetts) and Region 6 (the Boston area).

Each school’s likelihood of being selected into the sample was proportional to their share of the public school preschool market. That is, their likelihood reflected the number of children enrolled in their preschool program in October of the previous school year. In our descriptive analyses, the data from each school were weighted to reflect their market share. In addition, all data have been weighted to adjust for sampling probability and non-response to produce descriptive statistics representative of the entire state.

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<sup>4</sup> An IEP, Individualized Education Plan, is developed for all children determined to have special needs that require special education services.

<sup>5</sup> OCCS regions are used to allow comparisons to the other types of care included in the Massachusetts Cost and Quality Study.

To measure the quality of early care and education, specially-trained data collectors observed classrooms for three to four hours, working with classroom teachers to select a time that was convenient for the teachers and that was typical of the usual environment for that classroom (i.e., not on a day when a field trip was planned, nor when half the class or the regular teacher was sick). At another time, data collectors interviewed teachers to gather information on their education and training. School administrators were interviewed separately, by another research team member, about classroom scheduling and staffing, staff education and training, the population served, and general classroom characteristics.

**Measuring Quality.** The main measure of quality used in this study was the Early Childhood Environment Rating Scale - Revised Edition (ECERS-R; Harms, Clifford, & Cryer 1998). The ECERS-R provides benchmarks for key quality indicators, including Language-Reasoning, Activities, and Interactions. The ECERS-R is a recent revision of the ECERS, which was the first in a series of rating scales developed by Drs. Harms, Clifford and Cryer for use both by practitioners and by researchers. The ECERS has been widely used for a number of years, and has become one of the standards in the field, offering useful benchmarks for practitioners, researchers and policymakers. The ECERS has good predictive validity, with studies showing that ECERS scores are related to children's development (c.f., Peisner-Feinberg & Burchinal 1997; Whitebook, Howes, & Phillips 1990). The ECERS was used in the original Cost, Quality and Outcomes Study (Helburn 1995), on which this Massachusetts study is modeled. By using the ECERS, the picture we develop of early care and education in Massachusetts is directly comparable to that in other states.

The ECERS-R is a 43-item scale designed to be used in center-based care for children aged two to six years. The ECERS-R is organized into seven scales: Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interaction, Program Structure, and Parents and Staff. Each scale has additional subscales, with multiple items that must be passed to receive a given score. Each subscale is scored on a seven-point scale, with benchmarks established for 1 = "Inadequate", 3 = "Minimal", 5 = "Good", and 7 = "Excellent". Programs that pass some of the items that are part of the benchmark for a "3", but not all of them, are scored a "2" on that subscale. Similarly, programs that fall between "Minimal" and "Good" are scored a "4", and programs that fall between "Good" and "Excellent" are scored a "6".

The ECERS-R ratings were based on observations by trained observers. As a measure of the inter-rater reliability of the observations, we calculated the proportion of the items on which a pair of observers, observing the same classroom, agreed exactly on the ratings. On average (across all possible pairs of observers), a pair of observers agreed exactly on 65% of the ECERS-R items; on average, a pair of observers agreed within one point on the seven-point scale on 84% of the ECERS-R items. More detailed information on the ECERS-R, and the other observational measures used, is provided in the full report of this study.