Project Number: ES1-ES11

Evaluating the Physical Environments of Early Childhood Education Facilities in Worcester

An Interactive Qualifying Project Report
submitted to the Faculty
of the
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements for the
Degree of Bachelor of Science
by

Peter Cacciatore

Stephen Franceschelli

Kyle Hess

Kurtis McCannell

Date: December 18, 2008

Professor Eunmi Shim, Advisor

Professor Ingrid Shockey, Co-Advisor

Abstract

This IQP is a quality assessment of the various pre-kindergarten child care facilities in Worcester. Working with Edward Street Child Services, we chose and edited a tool that evaluates the quality of learning environments. Based on our initial findings, we developed a data analysis program and kept track of problem areas for each of twelve facilities. We sent each participating center a written report containing its overall rank within the survey as well as suggestions for short-term improvement.

Acknowledgements

We would like to thank our advisors, Professor Shim and Professor Shockey. We could not have produced such a finished project without their comments and suggestions over the past few months. We would like to thank Dianne Bruce and Edward Street Child Services, our sponsor, for providing us the opportunity to do this project, helping us along the way, and always encouraging us. We would like to thank Mav Pardee for all her help and expertise in the field of early childhood education facilities. Finally, we would like to thank the directors of all the child care centers that we visited over the course of this project for welcoming us to critically evaluate the places that they take pride in. We could not have completed any project at all without their willingness to participate.

Authorship Page

This report was the result of a group effort by our entire team, and represents our combined efforts and writing. Although one person was the primary author of each section, these sections were reviewed thoroughly by the whole group. Some sections, such as the introduction, methodology, and findings, were written as a group, with one person typing and the rest dictating. S. Franceschelli was the primary designer and writer of the data entry and analysis program, while P. Cacciatore, K. McCannell, and K. Hess were the primary writers of the individual facility feedback reports.

Table of Contents

List of Figures

List of Tables

Executive Summary

Many states across the country, including Massachusetts, are proposing Universal Pre-Kindergarten (UPK) legislation. This would allow any child the opportunity to attend early education at no cost. Advocates of UPK are facing many obstacles, mainly the accumulation of funding. State funding is not easily obtained; it has become increasingly difficult with the current economic state of the country. The state funding that has been procured thus far is limited to the improvement of program and teacher credentials. Little to no funding is reserved for child care facilities. Our project's main goal was to assess the condition of facilities in Worcester in order to improve their overall quality by providing feedback and potentially procuring state funding. In addition, we hoped to serve as a pilot to a Massachusetts-wide study being undertaken by the Children's Investment Fund.

Child care is an underestimated aspect of the American education system. However, it provides benefits to both the children who attend and the community in which it is present. Children who attend child care are more likely to do well in later schooling. In poverty-stricken areas, including Worcester, the community can benefit from children breaking the cycle of poverty through beneficial child care at a young age.

Working with Dianne Bruce of Edward Street Child Services and through our survey of the relevant literature, we identified one of Worcester's main child care issues as being the prevalence of poor facilities. Poor facilities have a negative impact on child development by creating stressful environments. Together, we chose an assessment tool, the Early Childhood Physical Environment Checklist (ECPEC), which we later modified with Mav Pardee of the Children's Investment Fund. This tool was originally designed for center directors to assess their own facilities but has been adapted to fit our needs. The checklist is split into four sections: Building Exterior and Center Entry, Program Support Space, Children's Spaces, and Outdoor Play Areas. The first section covers the security, safety, hospitability, and cleanliness of the building, the entrance, and the reception area. Program Support Space includes offices, teacher work space and meeting rooms, utility and custodial closets, kitchens, and storage, among other things, that are not spaces for the children but contribute to the quality of their education. Children's Spaces items mostly involve the classrooms and how their environments support children's learning and exploration. Outdoor Play Areas is the section that deals with the quality

of the playgrounds, dealing with the variety of play zones, available space, cleanliness, and maintenance.

Methods

We went to twelve child care centers in Worcester and assessed them using our modified tool. This involved asking their directors about several items that we could not observe ourselves, then evaluating the rest of the facility independently. To assess each item in the tool, the group arrived at a general consensus as to a rating. This ensured a consistent and accurate rating of each school. While evaluating the facilities, we noted specific aspects of the tool that hindered our evaluation process and recorded them as potential changes. After surveying three facilities, we further modified the checklist to streamline the survey process. Once we visited every facility and collected all of our data, we entered it into a custom-built data entry program in order to obtain a statistical analysis of each facility. We counted each item in the averages a certain number of times, weighing them by their importance with the help of Mav Pardee. This allowed us to see how each facility fared in each of the checklist's four sections, and how the facilities compared to each other and to the standard that we defined as quality.

Results and Analysis

Upon analyzing the data obtained by our surveys, we surmised that the quality of early childhood education centers in Worcester is inadequate. This was based on a combination of their inability to meet our definition of quality and the general state of the facilities. Our perception was that the facilities' inadequacies stemmed mainly from a lack of space. Almost every school we visited cited a need for more space. The lack of sufficient space precipitated many other problems within the facility, including crowded classrooms, scarce storage space for classroom materials and bulk supplies, and a lack of offices and teacher work spaces. We found a direct correlation between the facilities' ratings in Program Support Space and the overall ratings, illustrating just how important support space and space in general is to early childhood education.

In addition to the lack of space, we also documented minor changes that can be made to the facilities that will greatly improve their health and safety. These low-cost improvements could be made without the need for external funding. Unfortunately, in order to make great

improvements to the facilities, major funding would be necessary, due to the need to build more space.

Conclusions and Recommendations

We made recommendations about the use of the survey tool based on our analysis. This included using the tool as a group to minimize inconsistencies and also to clarify the checkboxes to include the possibility of not being applicable. In order to assist the schools in Worcester, we offered individual feedback to facilities. Based on our assessment, we gave them their approximate standing in the Worcester community and suggested specific, inexpensive changes that can be made to improve the health and safety aspects of their facilities. We also performed a cost analysis based on an average of all the facilities in Worcester. This was done by taking into account the number of students served and the average square footage of American child care facilities. Using this information we created a hypothetical school representative of the average Worcester facility. We then performed a cost analysis of the prices of fixing some of the major problems that we noted in our survey, including mold removal, asbestos removal, updating the heating, ventilation, and air conditioning systems, and the construction of additional space. Finally, we devised a system of prioritization for potential funding based on the health and safety item averages for each facility.

Chapter 1: Introduction

Child care is an important aspect of the American education system that should not be underestimated. Studies have shown that children who attend child care programs are better prepared to cope with and successfully complete their consequent steps in education. Children have been shown to be more receptive to learning at a young age (Owen, 2004). Issues lie in the accessibility, quality, and affordability of early education for low-income families. In response to this problem, legislation has been proposed nationwide that would help provide the opportunity for all children to begin their education prior to kindergarten (H.R. 4060, 2007). Massachusetts is joining an ever-growing collection of states that have recognized the importance of early education and has thus initiated Universal Pre-Kindergarten (UPK) legislation with the intent of making it accessible to all children in the Commonwealth. Currently, only a portion of the legislation has passed, and the focus of the fund distribution is for improving teacher quality. However, teacher qualification is only a fraction of the aspects affecting child care. High-quality facilities are an integral part of early education and therefore must be given adequate consideration.

Edward Street Child Services, founded in 1883, was established to provide early education to the Worcester population. Although they no longer provide daycare services, Edward Street Child Services is still active in the community by continuing their efforts to promote the education of children in Worcester and improve the quality of that education. The organization is currently working with the Children's Investment Fund in Boston to assess the readiness of facilities and determine necessary changes in order to regulate the preschool system in Massachusetts. Edward Street Child Services has been concentrating the majority of its resources on upgrading the child care facilities in the Worcester area. The focus of this IQP is on assessing the current state of the facilities in Worcester and estimating the costs of bringing them up to the quality level sought by Edward Street Child Services.

In undertaking this type of a survey, we realized that a broader understanding of the issues relating to child care facilities was necessary. Child care is more valuable to society than most people recognize, and it provides benefits to both children and their families. However, these benefits are minimized in the absence of a quality learning environment. To properly address the flaws in the Worcester child care facilities that our survey brings to light, we needed to understand topics including the benefits of preschool, the effects of potential health and safety

hazards on children, and the work that other organizations have done in the past relating to the focus of our project.

Chapter 2: Background

In the following pages we would like to give the reader a general understanding of the schools of thought that exist in the field of early childhood education. A close reading of relevant literature reveals several trends. First, child care is an extremely important part of the education system as a whole. Second, health and safety is always the top priority in any form of child care. Finally, the physical environment of facility-based centers directly correlates to the quality of the educational experience. Unfortunately, very little literature exists relating the value of quality child care facilities to educational success.

When looking into the matter of quality in a child care facility, an understanding of the relevant vocabulary is necessary, along with an in-depth analysis of what constitutes a quality learning environment. Child care is a cumulative term referring to the care and education a child receives from people who are not that child's parents or guardians. The various types of child care can be divided into three categories: care in the child's home by relatives or nonrelatives; care in a home outside the child's home by relatives or nonrelatives; and center-based care (Childcare – Why Is Childcare Important?, 2008). Home-based child care is often strictly focused on supervision, while center-based care incorporates early-learning techniques into a supervised environment that facilitates cognitive growth.

2.1 The Importance of Child Care

First and foremost, the purpose of child care is to give children a place where they are both safe and provided for. Unless a family has a designated stay-at-home parent, child care in some form is essential to safely and effectively raising children. Traditionally, child care was considered a wife's or woman's duty, but changes in their socioeconomic standing have forced families to seek care for their children elsewhere. As of 1997, approximately two-thirds of women with children work outside their homes. This leaves a large portion of families, and especially single parents, without the ability to simultaneously earn an income and care for their children during the day (Cabrera, Hutchins, & Peters, 2006). In poorer communities, it is even more imperative that parents find cost-efficient, reliable methods for the care of their children during the workday because families at or below the poverty line do not have the flexibility to miss hours of work. In the event that a problem arises, poverty-stricken parents, as a priority, leave their children unmonitored rather than miss work.

Recent studies in the United States show that one hundred percent of children between the ages of zero and thirteen are in some form of child care (Child Care and Development Fund, 2008). A majority of younger children receive care in the homes of family members and education centers, while the older children receive a majority of care in their own homes and their family members' homes. Overall, fifty-eight percent of children in this age bracket in the United States attend child care in a facility-based program. In Worcester, just under eighteen percent of children under the age of five are in facility-based programs (Edward Street Child Services, 2008). In poorer communities, the number of quality child care facilities is extremely small, "leading many parents to substitute more informal, unregulated, and often lower quality arrangements" for their children (Proscio, Sussman, & Gillman, 2004, p. 7). This is unfortunate as the greatest benefits that child care can provide come predominantly from facility-based education.

Children attending child care centers "show significantly better behavior, mental development, and language skills than those in other care settings" (Levin, 2004, para. 1). According to a recent study involving a group of children evaluated at age fifteen months, and again at twenty-four months, those who attended a facility-based program had a superior vocabulary and produced more overall language than children raised in home-based care (Owen, 2004). Facility-based care, in principle, encourages an interaction between young children and a wider array of their peers than would other forms of child care. For example, they acquire social skills, adaptation fundaments, and even begin to learn the functionality of teacher-led classrooms.

2.2 The Importance of Child Care Facilities

Although not all child care facilities technically qualify as schools, they introduce children to the structured system of learning, growth, and development that they will face in traditional public or private schooling later in life. "Preschool effects on standardized measures of intelligence and academic achievement were statistically significant, positive, and large," according to research directed at childhood intelligence interventions, which in the case study were defined as any form of child care, including preschool, that precedes kindergarten (Center for Mental Health in Schools at UCLA, 2004). Children entering kindergarten perform better and are more comfortable in the school environment if they have previously attended facility-based

child care program. Therefore, child care facilities, in addition to providing a safe and supervised location for children with working parents, are beneficial in that they serve as a precursor to formal education and improve the school-readiness of children that have gone through their various programs.

Center-based care that is conducted in inadequate facilities severely limits the learning process in students. Children need to feel supported and comfortable before they open themselves up to caregivers who are not their parents, and thus the facility must have the capacity to take advantage of their willingness to learn. The minimum space allocation for daycare centers and preschools, as mandated by most state legislatures, is inadequate. Stress levels in children, measured by the level of the hormone cortisol in saliva, confirm that more than the legal minimum is needed for a comfortable learning environment (Legendre, 2003). Because most daycare centers are constructed to the minimum requirements to save money, stress levels are high and become an obstacle to quality learning. When child care centers do not have adjoining storage rooms and bathrooms, safety becomes an issue as caregivers must leave the room to perform their daily tasks. Some facilities do not even have designated storage areas and thus safety is still a concern because items must be stored in the direct vicinity of children (Proscio et al., 2004).

2.3 Health and Safety in Child Care

There is a multitude of different standards and regulations that exist for governing the safety and health levels of a preschool or child care facility, but most of these policies share several common threads with one another. Although they might not address all of the issues in the same way, almost every set of standards identifies the same key areas as being important to the facility. This section focuses mainly on the set of standards used by the State of Massachusetts, available at the National Resource Center for Health and Safety in Child Care and Early Education online (at www.nrckids.org/STATES/MA/Massachusetts.htm).

2.3.1 Adequate Sinks and Wash Facilities

Having adequate wash facilities is crucial in any child care center to limit the spread of disease and to create a sanitary learning environment for children. There should be at least one sink in the classroom area in addition to at least one in the bathroom area. Children should wash

their hands before eating, after being outside, and in any other situation where germs might be transmitted. There should either be a child-height sink available or some type of safe stepping stool for children who cannot reach the sink.

2.3.2 Sanitary Diaper-Changing Station

In any school facility that is designed to handle children wearing diapers, every room that has children of this age should have its own diaper-changing area near the hand-washing facilities. The changing area should be kept clean and sanitized after each use. If possible the changing area should be placed away from the main classroom area so as to minimize any possible contamination.

2.3.3 Reduction of Allergens

Care should be taken to reduce common allergens, both inside the classroom and in the outdoor play area. All specific allergies of students should be noted and any substance that might elicit an allergic reaction should be kept separate from that child, and preferably kept out of the classroom entirely. Common allergies should be considered in all situations, especially in food preparation and the acquisition of learning materials and art supplies.

2.3.4 Control of Toxins

Careful steps should be taken to prevent potentially harmful or fatal toxins from entering the classroom environment. This is especially a concern in old or out-of-date facilities where the building may no longer meet the current code of health. Hazardous building materials, such as lead paint or asbestos, as well as mold spores and other natural toxins, should be removed if possible. If not, special care should be taken to prevent exposure of the children to any of these substances. Other toxic chemicals that may be present at a school facility include janitorial cleaning materials, detergents, aerosols, pesticides or herbicides, makeup, or lawn care chemicals. In addition to these harmful chemicals, all medicines, prescription or otherwise, must be kept in a separate storage area that is not accessible to children.

2.3.5 Disease Control

Infectious diseases are easily spread in a classroom environment, especially in smaller facilities that have more children per square foot. Attention should be paid to hand washing and to sanitation procedures to minimize the spread of germs. Bathroom facilities should be kept clean and sanitary, as should changing areas. Parasites, such as head lice, are also a concern, and measures should be taken to ensure their early detection and prevent spreading.

2.3.6 Safety of Furnishings and Equipment

In general, children have a lesser sense of safety awareness, and precautions should be taken in all aspects of the classroom materials to prevent accidental injury. A major concern is electric shock hazards. Outlet plug covers should always be used to reduce this risk, and electronic equipment should be checked periodically to ensure that it is in good working order and that the cord for it is fully insulated. A good list that is representative of the general standards of many sources can be found in the collaborative project between The American Academy of Pediatrics, The American Public Health Association, and The National Resource Center for Health and Safety in Child Care called Stepping Stones to Using Caring for Our Children (2003):

> STANDARD 5.075
> SAFETY OF EQUIPMENT, MATERIALS AND FURNISHINGS
> Equipment, materials, furnishings, and play areas shall be sturdy, safe, and in good repair and shall meet the recommendations of the U.S. Consumer Product Safety Commission (CPSC) for control of the following safety hazards:
> a) Openings that could entrap a child's head or limbs;
> b) Elevated surfaces that are inadequately guarded;
> c) Lack of specified surfacing and fall zones under and around climbable equipment;
> d) Mismatched size and design of equipment for the intended users;
> e) Insufficient spacing between equipment;
> f) Tripping hazards;
> g) Components that can pinch, sheer, or crush body tissues;
> h) Equipment that is known to be of a hazardous type (such as large animal swings);
> i) Sharp points or corners;
> j) Splinters;
> k) Protruding nails, bolts, or other components that could entangle clothing or snag skin;

l) Loose, rusty parts;
m) Hazardous small parts that may become detached during normal use or reasonably foreseeable abuse of the equipment and that present a choking, aspiration, or ingestion hazard to a child;
n) Flaking paint;
o) Paint that contains lead or other hazardous materials. (American Academy of Pediatrics, American Public Health Association, & National Resource Center for Health and Safety in Child Care, 2003, p. 94-95)

2.3.7 Safety of Outdoor Play Area

According to the National Resource Center for Health and Safety in Child Care, in child care facilities "the majority of injuries occur on outdoor playgrounds" (Fiene, 2002, Outdoor Playground Indicator, Research Review/Gap Analysis, para. 1). Special attention should be paid to keeping the outdoor facilities secure and safe, as this is where the majority of physical harm has the potential to occur. Many types of playground equipment, including swings, and some types of jungle gyms and slides have been deemed hazardous and should not be used. Other possible dangers can include traffic; bodies of water; excavations; unsafe structures; abandoned wells and pits; and animals such as dogs, bees, and other aggressive wildlife. There may also be hazards from air pollution, littering, loud noises, or radon gas.

2.3.8 Fire Safety

Fire safety is a strong concern, especially in buildings that may be old and made of dry timber. The building should always meet local fire code, including having multiple clearly marked exits, a fire escape, a detection system for smoke, carbon monoxide, and heat, as well as a working sprinkler system. No materials that have a potential to become a fire hazard should be allowed in the classroom, especially, but not limited to, matches and lighters. Fire extinguishers should be readily available and well marked or indicated, if not visible.

2.3.9 Availability of First Aid Materials

There should be a first aid kit in each classroom, allowing the adult in charge to deal with minor injuries such as cuts and scrapes. There should also be a first aid kit readily available on the playground or outdoor area, during transit to and from the facility, and in any situation where the children are under the supervision of the child care provider. Stepping Stones to Using Caring for Our Children (American Academy of Pediatrics, 2003) provided a good general

outline that met the majority of the standards associated with the National Association for the Education of Young Children that will be explained in Section 2.4:

> STANDARD 5.093
> FIRST AID KITS
> The facility shall maintain at least one readily available first aid kit wherever children are in care, including one for field trips and outings away from the facility and one to remain at the facility if all the children do not attend the field trip. In addition, a first aid kit shall be in each vehicle that is used to transport children to and from a child care center. Each kit shall be a closed container for storing first aid supplies, accessible to child care staff members at all times but out of reach of children. First aid kits shall be restocked after use, and an inventory shall be conducted at least monthly. The first aid kit shall contain at least the following items:
> a) Disposable nonporous gloves;
> b) Scissors;
> c) Tweezers;
> d) A non-glass thermometer to measure a child's temperature;
> e) Bandage tape;
> f) Sterile gauze pads;
> g) Flexible roller gauze;
> h) Triangular bandages;
> i) Safety pins;
> j) Eye dressing;
> k) Pen/pencil and note pad;
> l) Syrup of ipecac (use only if recommended by the Poison Control Center);
> m) Cold pack;
> n) Current American Academy of Pediatrics (AAP) standard first aid chart or equivalent first aid guide;
> o) Coins for use in a pay phone;
> p) Water;
> q) Small plastic or metal splints;
> r) Liquid soap;
> s) Adhesive strip bandages, plastic bags for cloths, gauze, and other materials used in handling blood;
> t) Any emergency medication needed for child with special needs;
> u) List of emergency phone numbers, parents' home and work phone numbers, and the Poison Control Center phone number. (American Academy of Pediatrics, 2003, p. 97-98)

2.4 Child Care Facility Accreditation

One of the challenges that early childhood education centers face is the competition from public preschools. Due to their stability, some people see public schools as more reliable and a better place for their children to go. In order to compete, the centers sometimes seek accreditation through well-established associations or standards. This not only sets them apart from public schools, but also from other centers that are not accredited. Two of the most well-established and widely recognized methods for accreditation are the National Association for the Education of Young Children and the Early Childhood Environment Rating Scale.

2.4.1 National Association for the Education of Young Children

The National Association for the Education of Young Children, or NAEYC, describes themselves as "dedicated to improving the well-being of all young children" (NAEYC, 2006a, para. 1). The NAEYC started around 1920 and was focused on ensuring the quality of early childhood learning centers, a goal they are still striving towards today. It seeks to ensure that all children learn in a healthy, safe, and productive environment and is also the largest organization in the world working on behalf of children (NAEYC, 2006a).

In its effort to improve the quality of early education, NAEYC has developed several recognized standards of accreditation. Although its accreditation standards are fairly new to many states, certain states, such as Massachusetts and California, have an abundance of NAEYC accredited facilities. Among its multitude of assessment tools, the association has developed the *Early Childhood Program Standards* which focuses specifically on early education. For said centers, this is the set of requirements they must meet to receive NAEYC's accreditation.

The *Early Childhood Program Standards* include ten sections, ranging from Relationships to Leadership and Management. All of these ten categories are evaluated during the assessment of a center. Among these ten is a section entitled Physical Environment, targeted specifically at the quality of the establishment and its amenities. The goal of the Physical Environment section is to ensure "a safe and healthful environment that provides appropriate and well-maintained indoor and outdoor physical environments" (NAEYC, 2006b, para. 1). The organization has done evaluations and research, has designed standards that it deems appropriate for young children, and tries to adhere to those standards in this section. One point of emphasis is ensuring that the "environment includes facilities, equipment, and materials to facilitate child and

staff learning and development" (NAEYC, 2006b, para. 1). The section also strives to ensure that the establishment is "creating a welcoming and accessible setting for children, families, and staff" (NAEYC, 2006b, para. 2). Choosing a school for their children can often be a daunting task for parents. The goal of NAEYC is to use its accreditation to help parents find a suitable learning environment for their children.

2.4.2 Early Childhood Environment Rating Scale

Written by T. Harms, R. Clifford, and D. Cryer, the Early Childhood Environment Rating Scale, or ECERS, is "designed to assess process quality in an early childhood … care group" (Harms, Clifford, & Cryer, 1998, para. 2). Their goal is to maintain a productive and safe environment in order to ensure success in early childhood education. The ECERS is perhaps a more comprehensive assessment in comparison to the NAEYC's *Early Childhood Program Standards*. The ECERS clearly states that it values each of its three components equally: protection of health and safety, building positive relationships and opportunities for stimulation, and learning from experience (Harms et al., 1998). There is a strong importance associated with the fact that "it takes all three to create quality care" (Harms et al., 1998, para. 2).

The scale consists of forty-three items grouped into seven "subscales": Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interactions, Program Structure, and Parents and Staff. These seven scales are described as "suitable for use in evaluating inclusive and culturally diverse programs" (Harms et al., 1998, para. 1), essentially stating that the evaluation is comprehensive enough to assess a diverse set of facilities.

ECERS focuses on assessing the "process" quality of an early childhood facility. The standards define process quality as consisting of, among other things, "interactions children have with the many materials and activities in the environment, as well as those features, such as space, schedule and materials that support these interactions" (Harms et al., 1998, para. 2). Essentially, while assessing each facility there is a measure of how successfully the child can interact with their environment and how beneficial it is to their learning. During this process, there is a focus on observation, because "observation has been found to be more predictive of child outcomes" (Harms et al., 1998, para. 2). Based on their findings the writers feel as though this interaction is more indicative of how well the child is doing, compared to other things such as "staff to child ratio [and] group size" (Harms et al., 1998, para. 2).

One aspect that is noticeable about ECERS is the importance of raters successfully using their evaluation tool. The authors of ECERS want to ensure that the standards are used properly so as to guarantee an accurate measurement of the facility's quality. When designing this tool the authors made sure to work "in close collaboration with realistic field-based sites" (Harms et al., 1998, para. 6). This makes a significant difference in the effectiveness of their tool. Working in the field while creating it allowed them to see where assessors could potentially become confused and make sure that there was ample clarification. This helped ensure "reliability and validity" as well as suitability for research and program evaluation (Harms et al., 1998, para. 6). In addition to ECERS, the authors also designed a training program that includes an "interactive videotape" to ensure the complete evaluator's comprehension of how to use the tool.

ECERS focuses on giving a more comprehensive evaluation of the facilities. It not only focuses on the facilities but also on routines and "support offered to parents and staff" (Harms et al., 1998, para. 5). Not only does ECERS cover a wide variety of evaluation aspects, but it is also adaptable and expandable. Many states like Massachusetts, Mississippi, and California, among others, have "initiated quality evaluation and improvement programs" using ECERS systems (Harms et al., 1998, para. 10). These states have been able to tailor the evaluation tool based on their own needs. This allows the state to decide what is most important and change the evaluation based on these standards. While ECERS is generally a well-rounded tool for assessing quality, it does not place emphasis on the physical environment.

2.5 The Constitution of a Quality Learning Environment

Even an accredited child care center might not have facilities that are at a level that would be considered a quality learning environment for children. Standards for the physical environment are underrepresented in popular evaluation tools like NAEYC's *Early Childhood Program Standards* and ECERS in their evaluations, comprising such a small fraction of the complete standards that facilities cannot be properly evaluated (NAEYC, 2006; Harms et al., 1998). The development of more critical and extensive standards on the state of the physical environment is necessary to ensure that children are able to receive quality pre-kindergarten education.

One recurring issue with child care facilities is that they do not provide enough space for children to explore, interact, and play. The standard that has been generally accepted by

developers and accrediting organizations in the past has been arbitrarily determined to be thirty-five square feet per child, but studies suggest that the minimum is too small. The previously mentioned study of cortisol levels in children at different day cares showed that their stress was increased above the normal level if they were provided less than five square meters (about fifty-four square feet) per child in play areas (Legendre, 2003). Another study provided evidence that more open space, in which children can make visual connections, encourages positive peer-to-peer interaction (Legendre, 1995), and observations have been made that it reduces conflict (Proscio et al., 2004). However, there should also be smaller spaces available for children to retreat to when they become upset or overwhelmed or wish to reduce their social interactions (Trancik & Evans, 1995). In order to reduce the negative effect of noise, wide open spaces should have some dividers, ceilings should not be abnormally high, and soft surfaces, such as carpet, should be used (Maxwell & Evans, 1999).

Another important aspect of child care facility design is that the children are able to explore and learn to perform tasks themselves (Proscio et al., 2004). For example, if there is not an appropriately sized toilet and a sink at their level (shorter or with a stepping stool), they will need help and/or become frustrated with their regular bathroom needs. The building should be a comfortable place for children in every way from having furniture their size to having windows that are lower to the ground so that they can see outside. The environment needs to stimulate their senses so that they can explore and develop cognitively, but not so much that it is distracting or confusing (Evans & McCoy, 1998).

The adults who use the space must also be accommodated. Teachers need to be able to access phones, supplies, and bathrooms without going far from the children, in addition to having work areas and furniture for their size. The ideal would be for the staff to have their own space in which to meet and plan. Parents should feel comfortable when they visit, which can be reinforced by a centralized, welcoming reception area (Proscio et al., 2004).

A quality child care facility consists of a lot more than just classrooms and sanitary bathrooms. Other spaces that might not be immediately considered but are also important for an efficient and pleasant environment include custodial closets, storage space, conference or staff rooms, kitchens, laundry rooms, and various kinds of play areas inside and outside. All areas to which children and their parents have access are important to consider. The aesthetics of a

facility can either promote or discourage learning and comfort, depending on its quality. Center-based child care takes place in all areas of the facility, not just in the classrooms.

2.6 Learning Environments in Worcester

In Worcester, Massachusetts, center-based child care provides pre-kindergarten education for approximately 2,000 students, and another 1,500 receive education from public preschools and the National Head Start Association's program (ESCS: Providing, 2007). The Head Start program provides education to low-income children and their families. The Worcester community is commonly regarded as one of the poorer communities in all of Massachusetts and thus education should be a priority. The percentage of children under five years of age living in a household below the poverty line is 26.5%. Statewide, only 12.4% of children in this age bracket live below the poverty line (Fast Facts: Worcester Socio-Economic and Educational Indicators, 2008). Considering that the average annual cost in Worcester of infant care is $12,735.00 and that the average annual cost of pre-kindergarten care is $9,100.00 (Fast Facts: Worcester Socio-Economic and Educational Indicators, 2008), it is virtually impossible for families below the poverty line to send their children to child care facilities without some form of aid.

The inadequacies in Worcester child care continue into the community's grade schools. Third-grade Massachusetts Comprehensive Assessment System (MCAS) reading proficiency percentage is 30% in Worcester, but 56% statewide. Similarly, third-grade MCAS mathematics proficiency is 36% in Worcester, but 60% statewide (Fast Facts: Worcester Socio-Economic and Educational Indicators, 2008).

Nearly fifty centers serve Worcester's young children, but they cannot accommodate the total population, and thus children are not guaranteed spots. There are two main programs that low-income families can use to enter their children into preschool: the Worcester Public Schools preschool program and the Community Partnership Program. The former provides half-day preschool for children who reside in Worcester based on a lottery system, while the latter helps Worcester families pay for preschool using a prioritized selection method. The majority of child care centers in Worcester are accredited by NAEYC, but their facilities cannot be considered quality learning environments. The programs are based wherever space can be found at low-cost locations that were usually designed for other uses, such as in church basements, residential

complexes, abandoned buildings, and rented space. The poor quality of these impoverished facilities continues to prevent Worcester youth from achieving their full educational potential. Because state funding only awards centers that meet mandated standards, a lack of quality education in the area has lead to few available funds for child care centers to improve their facilities. A vicious cycle forms through low-quality child care that precipitates poverty in adulthood. Children who attend low-quality child care do not perform well in school and are thus less successful later in life and have little to offer the community. Because the community is not being improved by educated and successful citizens, the child care system stagnates.

One example of how quality child care can break this cycle of poverty was proven in a study performed in Michigan. In the early 1960's, a sample of 123 children from low-income families in Ypsilanti, Michigan was taken to be evaluated. Once the sample was selected, children were then chosen at random to be part of either the control group, or to attend Perry Preschool. The preschool was designed with a high-quality program and extensively trained teachers. For the children who attended Perry, weekly home visits and daily classroom observations were scheduled for them. The study then tracked the participants until they turned forty years of age (Grunewald & Rolnick, 2008).

Figure 1 shows a strong contrast between the control group and the group who attended the preschool. Attendants of the Perry Preschool were more advanced at age 14, had a higher percentage of on-time graduation, and also had a higher percentage of students that did not require special education.

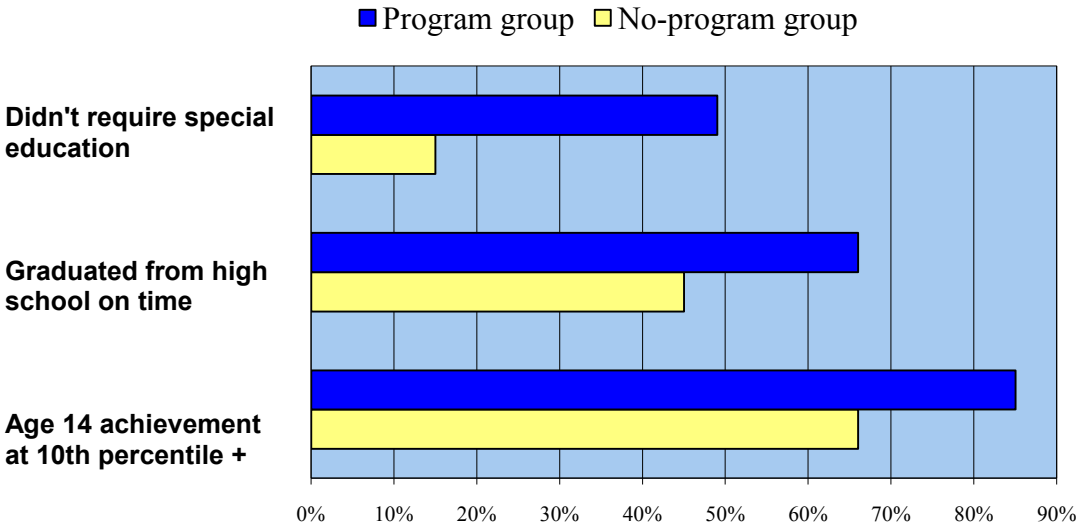


Figure 1. Educational achievement results of Perry Study, pertaining to educational benchmarks that the participants reached. (Grunewald & Rolnick, 2008)

Figure 2 shows a remarkable difference between the two groups. There is a noticeable difference between rates of success of the participant, in terms of likelihood to own their own home, to have a savings account, and to be living above the poverty line. Attendees of the Perry Preschool were more financially secure and generally more successful later in life than the control group.

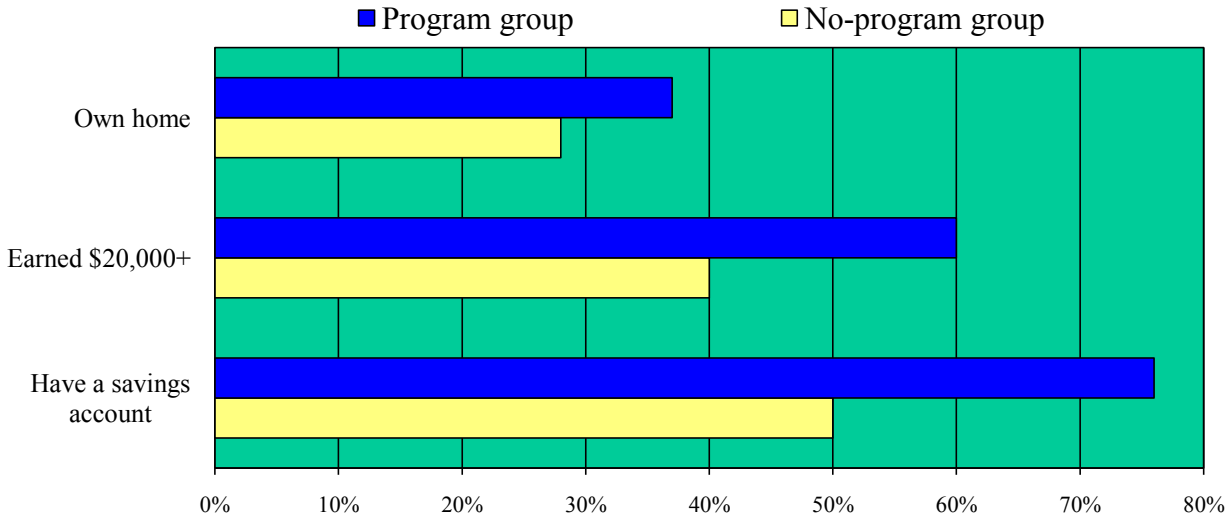


Figure 2. Financial standing of Perry Study participants at age 40 according to various benchmarks of social success. (Grunewald & Rolnick, 2008)

Figure 3 estimates that the benefit-cost ratio determined by the study was $16 to $1. That is, for every $1 invested in the participants, there was a combined public and participant return of $16. This yields an annual participant rate of return of 18% and a public rate of return of 16%.

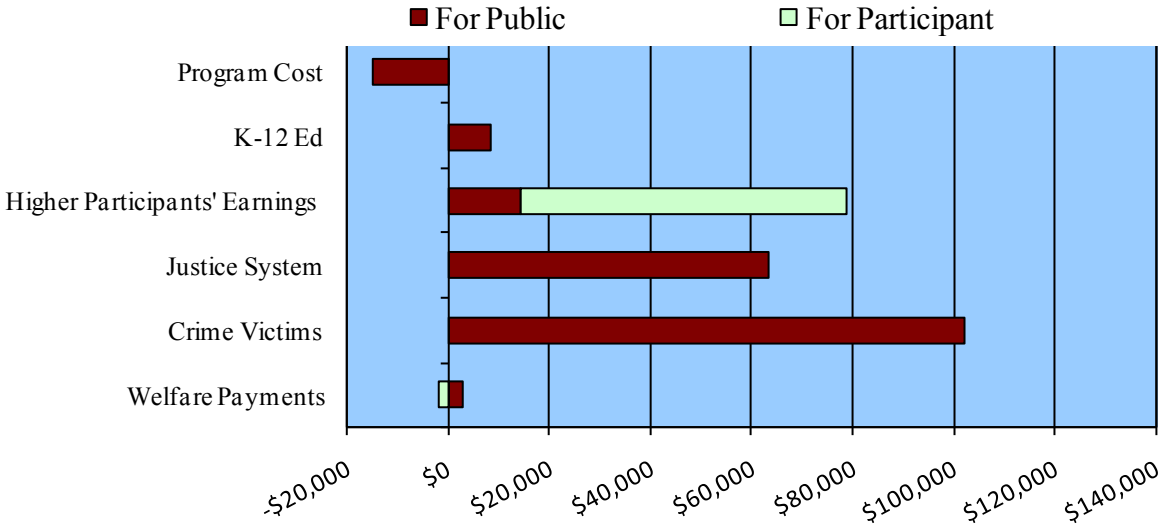


Figure 3. Perry Preschool costs and benefits over 62 years. (Grunewald & Rolnick, 2008)

There was a similar study undertaken at Abecedarian Preschool. Abecedarian Preschool is a high-quality, year-round program located near Chapel Hill, North Carolina. In this study, children of low-income families were randomly selected to perform in the study. Within this sample, children were selected to either be part of a control group who attended a relatively low-quality public preschool, or to attend Abecedarian Preschool.

The study showed a stark difference between those who attended and those who did not. Those who attended a high quality early education facility were more than twice as likely to attend a four year college, and also approximately 25% more likely to not repeat a grade.

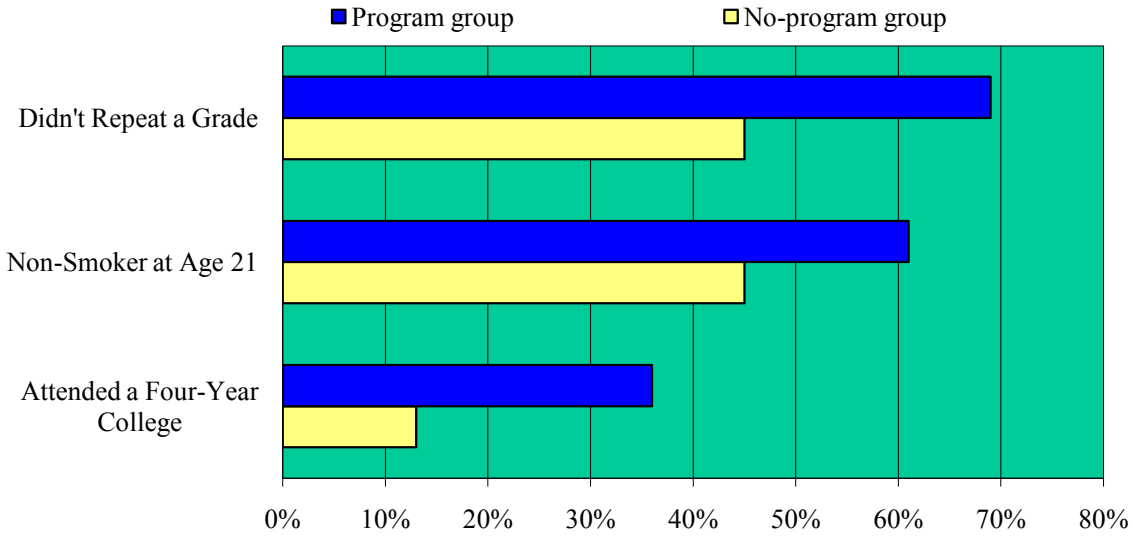


Figure 4. Abecedarian Preschool study results at age 21, according to measures of physical and mental wellness. (Grunewald & Rolnick, 2008)

These studies show the great benefits of high-quality preschool to individual students as well as to society as a whole. It is evident that communities such as Worcester without many quality child care centers can produce members of society that are not as ready as they could be in other settings.

Universal Pre-Kindergarten, commonly referred to as UPK, is a proposal by the Massachusetts Department of Early Education and Care (EEC) for the development of a system that would provide early childhood education. It is designed to assess the quality of preschool programs, provide grants to help them meet national standards, support teachers in becoming qualified through scholarships and programs, provide financial assistance for eligible families, and raise awareness of the issue (Kershaw, 2008). A UPK pilot program was initiated in 2007,

focusing on low-income families with the intention of working towards a universal system (Kershaw, 2008). Because only part of UPK has been passed, it is currently focusing its resources on qualifying teachers, and thus money to renovate the poor physical environments that many early childhood education facilities have must be found through other sources of funding.

Edward Street Child Services is an organization in Worcester that was one of the first child care centers to provide facility-based child care for children of ages too young to attend kindergarten. The center served as a model for the other child care services that have sprung up over the years in Worcester. After 120 years, Edward Street Child Services closed its day care center so that it could focus on projects to improve the quality of early childhood education in Worcester. Recently, the organization has been involved in such projects as the building of playgrounds and the renovation of a bathroom in the Webster Square Day Care Center. Their current mission is to work with child care agencies in Worcester to improve the quality of education with a focus on the physical environment through projects like the aforementioned, loans and grants for new centers and improvements on existing ones, and training and assistance with the technical aspects of the processes involved (Bruce, 2006).

The projects that Edward Street Child Services sponsor are funded by donations from local companies such as Rotmans and Polar Beverages. Individual centers can apply for grants, as they are made available through the Massachusetts Department of Early Education and Care. All child care centers that are affiliated with the Department are directly contacted when a new grant becomes available.

The Children's Investment Fund, based in Boston, Massachusetts, is another organization in the area that offers loans, supplies grants, and provides assistance with the expansion of quality child care facilities. The Children's Investment Fund, working with Edward Street Child Services, is working to complete a Facilities Assessment Project to examine the quality of existing facilities across the Commonwealth.

2.7 Background Summary

Facilities assessment is a complex endeavor that requires a wide range of knowledge. Although observation is best done objectively, some understanding of quality learning

environments in general, as well as specific facility arrangements, is necessary to produce accurate and practical results. Worcester's economic standing creates a unique situation that must be treated accordingly. Using the research presented as a basis, we formulated the methodologies for our project that are outlined in the next chapter.

Chapter 3: Methodology

As the purpose of this IQP is to assist our sponsor, Edward Street Child Services, and its Executive Director, Dianne Bruce, with the administering and testing of our child care facilities assessment goal, our research will form the basis for formulating the methods for our project. After reviewing a variety of survey tools, we collaborated with our sponsor and chose a tool that would be effective in assessing the quality of the facilities surveyed. Community Investment Collaborative for Kids (CICK), an organization founded by the Local Initiatives Support Corporation (LISC), created an assessment tool called the Early Childhood Physical Environment Checklist, which we have deemed to be ideal for our needs.

3.1 Survey Tool

The purpose of the Early Childhood Physical Environment Checklist, or ECPEC, was originally to provide child care facility owners the ability to self-assess and to help them reach their goals for quality space. The checklist aims to encompass all aspects of child care facilities including working environment for staff and family-friendly space for parents. The tool assumes that the program space meets state building codes and health department regulations, although it still addresses health and safety issues. The ECPEC includes provisions for setting "priorities for renovation or reconfiguration of [the] space" (Early Childhood Physical Environment Checklist, 2006).

The ECPEC is split into four sections, the Building Exterior and Center Entry, Program Support Space, Children's Spaces, and Outdoor Play Areas. Each of these sections contains a list of items, marked as to whether they involve Health & Safety; Program Quality; or Maintenance, Repair, & Aesthetics. Each of these items includes a list of specific features to be checked or unchecked by the assessor, based on whether or not they appear in the facility. The items also contain a Likert Scale that is used to evaluate the overall quality of the item. The rating scale has values from zero to four and includes the ability to mark the item as being not applicable. Following the rating scale is an additional section for pertinent comments. With the help of Mav Pardee, Program Manager of the Children's Investment Fund, we have modified the ECPEC for our use by reducing its seventy-five items to the fifty-six most relevant and important. We removed items that were too specific for our group to accurately assess, as well as items that did not directly deal with the health, safety, and overall education of children.

The first section in the ECPEC pertains to the main entrance of the facility and the building exterior. The entrance "sets the tone for [the] program" by serving as the initial impression to parents, children, and visitors (ECPEC, 2006). One of the challenges for the facilities "is to find a balance between hospitality and security" (ECPEC, 2006). Encompassed in this initial section are several items pertaining to the importance of not only how welcoming the center is, but also how safe and easily accessible it is to outsiders.

In the second section, ECPEC suggests that "a child care center is not just for children; it is also a work environment for the adults managing the center and caring for its children". This section includes the infrequently considered program support space factors that contribute to a quality learning environment. As in any other business, it is imperative for the staff to have an adequate work environment, as "providing a professional work environment that shows respect for the staff and an understanding of their needs is crucial to ensuring their commitment and professionalism" (ECPEC, 2006).

The third section balances distinct child space with teacher communication. To feel comfortable, children need a classroom with its own "individual identity" that provides "acoustical separation from other classrooms" (ECPEC, 2006). This section indicates items that would not necessarily be mandated in an education center but would, however, make it a more effective and aesthetically pleasing learning environment.

The fourth and final section stresses the importance of outdoor play areas. Because "the outdoor space is considered an extension of the classroom," this section evaluates its quality and safety (ECPEC, 2006). The outdoor play area serves as a contrast to the structured nature of indoor care, as well as an outlet for children to exert their energy in a productive and safe manner. In this setting, children learn how to interact with their peers independently of educational restrictions. The playground also serves as an introduction to the natural world.

3.2 Privacy Protection

In addition to the checklist, we wrote an information letter that outlined the main points of our project, including its anonymity and what we would be surveying at each school. We also added a second page to be signed by the director that gave us consent to take pictures of the facility. This page included a provision that we would not photograph children. The letter was

submitted to and approved by Professor Kent Rissmiller from the WPI Institutional Review Board (IRB). The letter can be seen in Appendix B.

3.3 Child Care Facilities Sample

We planned to survey a sample of early education centers in Worcester by evaluating their physical learning environments using our version of the ECPEC. After consulting with Dianne Bruce and Mav Pardee, a stratified non-random sample of convenience was deemed most appropriate. Our sample was explicitly chosen by Ms. Bruce according to several different factors. We could only obtain permission to evaluate certain facilities. The population of preschools was stratified by estimated family incomes, perceived quality, and location. Of the forty-six private early childhood education centers in Worcester (as shown in Table 1), our goal was to survey a sample of twenty. In addition, we hoped to survey three public schools, located at the Technical High School, Grafton Street School, and Jacob Hiatt Magnet School. Through Dianne Bruce, we submitted Criminal Offender Record Information (CORI) forms to the city of Worcester in order to gain admittance to these public schools. Three of the four forms were not approved in time, and as such, we chose not to conduct our survey at the public facilities, because it would compromise our methodology. Eliminating the public schools was not a large detriment to our project because they generally do not stay open as late as private child care facilities, which often are open until five in the afternoon. Public schools also run on a different calendar schedule and are closed on various holidays and during vacations, and thus do not serve parents' needs as well. Public schools also already receive state funding.

Table 1
Private Early Childhood Education Centers in Worcester

Agency	Address	Capacity	Infant	Toddler	Pre-K
Access Futures Child Care Center	799 West Boylston Street	39	yes	yes	yes
Apple-A-Day Care Center	16 Oxford Street	39	yes	yes	yes
Appleseed Early Learning Center	15 Hill Street	34	yes	yes	yes
Boys and Girls Club	65 Tainter Street	19	no	no	yes
Bright Start Academy	135 Kenberma Road	20	no	no	yes
Chestnut Nursery School	6 Institute Road	48	no	no	yes
Elm Park Center	284 Highland Street	49	yes	yes	yes
Elm Park Center	134 Burncoat Street	45	yes	yes	yes
First Friends Early Care & Education	111 Park Avenue	65	yes	yes	yes
First Steps at Ritmos Academy	334 Chandler Street	10	no	no	yes

Gentle Circle Learning Center	38 Granite Street	59	yes	yes	yes
Guild of St. Agnes	133 Granite Street	136	yes	yes	yes
Guild of St. Agnes	353 Grove Street	80	no	no	yes
Happy Day Child Care Center	349 Massasoit Road	39	no	no	yes
Jewish Community Center Preschool	633 Salisbury Street	123	no	yes	yes
Kids Kount Nursery School	519 Mill Street	24	no	no	yes
Magic Years Preschool	340 Burncoat Street	37	no	no	yes
Massasoit Community Preschool	421 Massasoit Road	20	no	no	yes
Pine Hill Montessori	661 Salisbury Street	18	no	no	yes
Quinsigamond Children's School	670 West Boylston Street	40	no	no	yes
Rainbow Child Development Center	10 Edward Street	64	no	no	yes
Salem Covenent Community	215 East Mountain Street	39	no	no	yes
School Age Mothers Infant Center	125 Providence Street	23	yes	yes	no
School Age Mothers Infant Center	20 Cedar Street	9	yes	yes	no
St. Mary's Childcare	535 Salisbury Street	23	no	no	yes
St. Spyridon Nursey School	102 Russell Street	32	no	no	yes
Sweet Blossoms Preschool	199 West Mountain Street	12	no	no	yes
Temple Emanuel Nursery School	280 May Street	39	no	no	yes
The Children's Garden at the VNA	120 Thomas Street	45	yes	yes	yes
The Explorer's Clubhouse	50 Croydon Road	20	no	no	yes
Tiny Treasures Learning Center	6 Warden Street	37	yes	yes	yes
TLC Childcare	73 Lancaster Street	12	no	no	yes
UMMHC Child Care	116 Country Club Blvd.	40	yes	yes	yes
UMMHC Child Care	38 Oak Avenue	40	yes	yes	yes
University Commons Child Care	378 Plantation Street	47	no	yes	yes
WCCCS Teen Parent	170 Apricot Street	20	yes	yes	no
WCCCS Teen Parent	179 Burncoat Street	16	yes	yes	no
Webster Square Day Care Center	1048 Main Street	61	no	no	yes
Worc. Comprehensive Child Care	875 Main Street	55	yes	yes	yes
Worc. Comprehensive Child Care	160 Tacoma Street	48	yes	yes	yes
YMCA Child Care	100 Shore Drive	50	yes	yes	yes
YMCA Child Care	75 Shore Drive	26	no	no	yes
YMCA Child Care	125 Holden Street	12	no	no	yes
YMCA Child Care	100 Front Street	85	yes	yes	yes
YWCA Child Care	1 Salem Square	154	yes	yes	yes

Note. Table 1 shows a list of all the private early education centers in Worcester along with their addresses and full capacities. It indicates whether each one serves infants or toddlers or pre-kindergarten children. Our original planned sample facilities are highlighted.

The sample that we actually surveyed was reduced to twelve early child care centers, due to limited time. Eleven of those schools were from the original list of twenty. One was not, but

we decided to survey the facility for its convenience. The director wanted us to visit and gave us the opportunity to, so we took advantage of the interest in our project and the ability to add another center to our sample.

When we were given the potential sample of twenty centers by Ms. Bruce, we did not know any specific information or data about any of them, beyond what we were provided in Table 1. We later asked the director of each center how many of their children received vouchers to pay for their education, as an estimate of how many low-income families they served. Table 2 shows that our sample included a wide range of centers in the levels of income of the families that they served, organized by their ranks, which will be explained in detail in Section 3.6. The sample was purposely arranged to expose our group to a wide array of kinds of facilities. These included church basements, converted apartment buildings, community centers, and stand-alone centers.

Table 2
Percentages of Low-Income Families Served in Our Sample

Center Rank	Percent Low-Income
1	0%
2	85%
3	100%
4	4%
5	1%
6	4%
7	10%
8	50%
9	100%
10	15%
11	43%
12	90%

3.4 Construction of Facilities Data Entry and Statistical Analysis Tool

Upon realizing the large amount of data that would be collected through this survey, we decided to design a program to store and analyze the data. The goal of the program was to have the means to easily input and store the data, and also to have the capacity to perform statistical analysis of the data. When designing the program we kept in mind its ease of use for our sponsor, who would use and update the data in the future.

The program has two on-screen windows. The initial window is designed to allow data entry. Once a new school has been created, the bottom portion of the window becomes visible

and allows the user to enter the pertaining information. Once the user has entered data, he or she is able to save it to the database permanently. The second window can be accessed by pressing the button labeled "Comprehensive." This screen displays the statistical analysis of the data. This is shown in an on-screen table, which displays the schools and their corresponding overall average, and individual section ratings. Here, the user can see the ranking of each item from the tool sorted by its average rating. The comprehensive analysis window also allows the user to browse the previously entered data. This was designed so that the user can see individual information and understand the details behind the average ratings. The user can either directly navigate to the data using a "tree" or use drop-down boxes. Finally, the user can print out the data. This involves selecting a school and choosing to output the data. Once this is pressed, a Microsoft Word document is opened and the school's data is shown in a table.

Due to the sensitive nature of the data, the program has the capability of hiding the names of the schools, which allows data to be shown to people who should not be able to see the corresponding school names. When this situation is encountered, the user can select to hide the names of the schools and then safely display the data to others. The program's initial window is also split into two modes: View and Edit. Edit mode allows the data to be modified, while the default mode View prevents the data from being accidentally altered.

The first step in designing the Facilities Data Entry and Statistical Analysis Tool was to create the two original windows and include in them everything that we wanted in the program. As the project progressed, the program requirements changed, and the windows were adjusted to accommodate the new needs. After the program design was completed, it was written using C# in Microsoft Visual Studio and then thoroughly tested. The program testing was an iterative process that involved alternating between testing and coding. We ran the program and tested every possible aspect, noting things that needed to be changed. These changes included adding multiline text boxes, implementing a process for pressing enter to save data, regulating decimal places, and formatting text. We then coded the changes and started the process again until the program was complete. We have also included a set of instructions for other users of the program, to ensure that it is used correctly.

3.5 Survey Process

In order to gain some perspective on relative facility quality, we traveled to Concord Children's Center in Concord, MA, to see a facility that has been recognized as being one of the highest-quality child care programs in the state. It is different from many Worcester facilities in that it was specifically constructed for the purpose of housing a child care center. This provided us with a benchmark for comparison when surveying the facilities in Worcester.

Next the four members of our team took the modified ECPEC to each of three schools for evaluation. We analyzed the facilities according to each category and came to a consensus on each discretionary rating. The group brought four copies of the tool to each evaluation. One copy was used to record the information, another copy was for the center director, and the other two were for group members to follow during the survey. We brought two copies of our information and signature letter to each school. We had one signed by the director for our records and gave the other to the director. All four of us checked for each feature and then discussed as a group and marked accordingly. Aspects deemed imperative were marked as priorities for further analysis.

3.6 Analysis Methods

After surveying the first three schools, we determined that several changes were necessary to make our tool more efficient and effective. These changes included a new rating scale, a consolidation of certain items, and the addition of new sections to the end of the checklist. The rating scale was expanded from a zero-to-four system to a zero-to-ten system, while the five main textual descriptions were maintained, allowing for a smooth transition between scales. The heating and cooling system features were consolidated into one item, as they were previously divided among several items. Two sections were added to the end of the checklist for unobservable items and points of interest. The first section arranges all items that need to be inquired about into a consecutive order to increase efficiency, while the second section lists points of interest that are necessary for us to conduct the survey. Points of interest include mechanical and electrical closets, custodial closets and facilities, classrooms, adult and child lavatories, meeting rooms, staff rooms, office space, and kitchen or food-prep area. Having the list readily available during tours of facilities also increased the efficiency of the survey process. This final version of the checklist can be seen in Appendix A.

Once all of the data was calculated, a ranking system was used to sort the facilities. The ranking depends upon the facilities' average ratings for each category and the weights for each item. The weight of each item is based on its importance with a multiplicative factor of one, two, or three. A weight system of zero to three was designed by Mav Pardee. A focus was placed on Health & Safety items, while Program Quality was second, and Maintenance, Repair, & Aesthetics items were considered least important unless they jeopardized children's health and safety. We later adjusted the scale to one to three in order to facilitate our calculations of the ranking. The ranking was determined by adding each individual rating multiplied by its weight, then taking the average of this value. This allowed us to give direct feedback to the facilities as to their estimated Worcester ranking in quality physical environment based on our analysis.

Each center that participated in our study was sent feedback about the overall quality of its program. This entailed overall ranking and categorical rankings, without alluding to the rankings of other facilities. The center also received a set of suggestions for immediate improvement based on items that we identified as a priority. Suggestions were given for all items except those that could only be remedied by construction of new space.

In summary, our methodology entailed three steps. First, we conducted the survey with our modified ECPEC. Second, we developed a computer program to analyze the data. Third, we provided individualized feedback to each facility as to the results.

Chapter 4: Results and Analysis

In conducting our surveys, we recorded information on various aspects of the project. Because our project was multidimensional, our results are split into various sections. One of these aspects was an analysis of the survey tool as our modified ECPEC had never been tested before. Regarding our survey, we categorized our findings into four sections.

4.1 Analysis of the Survey Tool

Because the ECPEC was not originally created to be used as an analysis tool, its efficiency and effectiveness must be weighed when considering the credence of the results it has produced. The several modifications outlined in Chapter 3 were made to translate the tool from a self-assessment to a facilities assessment to be used by objective surveyors. Neither version of the tool, the original ECPEC and modified version used in this project, has ever been tested or analyzed before.

Overall, our modified version of the assessment tool is a good measure of the quality of a child care center's facility. It allows for assessment from an outside perspective, which is important in a project such as this. Child care center directors and employees, through continuous working in their respective facilities, become accustomed to the situations in which they work. They sometimes become partial to quality-related items, such as lack of program support space for employees, which could skew a self-assessment. While our survey aimed to help centers improve their overall quality, we found that many directors and employees that we questioned exaggerated the quality of their facility relating to various items because of pride in their work, among other factors. Our use of the ECPEC negated the prejudices that often exist in self-assessments by providing an unbiased opinion from a different perspective than that of the centers' workforce.

In addition, the tool is very extensive and as comprehensive as possible. It contains fifty-six items, each with varying numbers of features, as well as room for comments. Although the overall ratings given to each item did not correspond mathematically to the check system of features, the ability to write individual comments and keep track of the absence or presence of the features greatly increased our capacity to write individual suggestions for each child care center. The great extent of items that is covered in the checklist ensures that every aspect of the child care facility is taken into account when being rated.

However, there were several issues with specific items contained within the checklist. First and foremost, there were items that we simply could not observe on our own. These included items dealing with the functionality of the heating and air conditioning systems as well as features like the pooling of water on walkways and in playgrounds. To record data for these items, we discussed them with workers present in the facilities. Thus, it is possible that some items' rankings are skewed because of biased information.

Other items contained conditional features that clouded the meaning of a feature that receives no checks. When a feature does not receive a check, the absence of an important feature of quality is indicated. If a conditional feature does not receive a check, it could mean the condition was not met, or it could mean that the condition was met but there was an absence of an important feature. For example, this occurs in Item 2.2: "If it is in a multi-purpose space, storage is available for tables, chairs." If this feature is unchecked, it may not be a multi-purpose space, or it may be a multi-purpose space without storage available. This is a large ambiguity to those who view our results. Some other features were comprised of multiple parts, like "Sand and water play" from Item 4.7. Sometimes, only part of a feature was present or true, and in order to indicate that, we had to either check it or not and write about the difference in the comments. Our solution to these issues is in Section 5.1.

4.2 Limitations on the Scope of the Project

The nature of our survey, in addition to the issues with the checklist, created several limitations on our project. The CORI forms that we submitted to the state did not come back in time for us to survey any public schools. Thus, our survey deals with only private child care centers and does not give an accurate description of the overall quality of all facilities in Worcester. Also, our original sample size of twenty private child care centers was not feasible given the seven-week time constraint. We were able to survey twelve facilities. Problems arose when we did not hear back from several facilities even after sending emails and leaving voice messages. Other centers had small windows of opportunity for us to visit and conduct the survey, and we simply could not include them in our survey. Despite these limitations, we have taken all possible precautions, including working with a child care facilities expert, Mav Pardee, to make our assessments as accurate and representative of the conditions as possible.

At the outset of this project, one of our goals was to complete a cost-benefit analysis of general problems shared between many of the centers' facilities. This would highlight major renovations, such as removal of asbestos or the installation of new flooring, in order for centers in Worcester to gauge the estimated price range. After conducting the surveys, we found that no facilities had similar enough problems to warrant a general cost-benefit analysis. The major renovations that each facility needed were mostly dependent and unique to each respective facility, if not involving the construction of a completely new facility, and thus we decided to write individualized suggestions as an alternative to the cost-benefit analysis. This created a limitation on the scope of our project, which we had originally intended to be very broad, but has now formed into a much more focused approach.

4.3 Initial Impressions

To the untrained eye, many of the facilities in our study appear to be well-maintained and safe for children. They are generally aesthetically pleasing and comfortable environments. However, there were three specific facilities that stood out as we conducted our survey. Two stood out for being very poor quality, while the other stood out as being very high quality.

The two poor-quality facilities were uncomfortable environments. They were dreary and cramped, and they created a very stressful environment. It was clear that they would score poorly on the checklist, as many of their problems were apparent even from casual observation. Both the teachers and children in these facilities were clearly at a disadvantage relative to staff and children in the other facilities that we surveyed. There were no reception areas and thus the front doors opened directly into classrooms. The classrooms themselves were much too small for the number of children present in them. Both facilities were converted living quarters that were very inefficient at providing proper child care. A classroom in one facility was a converted kitchen, with appliances and fixtures still present. The child play areas were also far too small. One facility had almost no play structures, while the other contained too many structures, many of which were not safe. Figures 5 and 6 correspond to the aforementioned poor facilities.

Figure 5. **Poor child play area with little to no proper equipment.**

Figure 6. **Poor classroom located in a converted kitchen.**

The high-quality facility was very impressive, even from the reception area. We were all surprised how well a walk-through progression through the facility correlated to the progression of items in the checklist. It was bright, colorful, and very enjoyable to observe. There was a main center room with classrooms off of each side. The classrooms were color-coded, giving each room a uniqueness with which the children could identify. The main room's sheer space was impressive. It was large enough to be an effective gross indoor motor space. It also included a kitchen with a child-sized bar, which we had never seen before. In addition, this facility's playground was incredibly well-kept and the play structures were like new. Figures 7 through 9 correspond to the abovementioned high-quality facility.

Figure 7. Quality facility featuring a kitchen and child-sized bar.

Figure 8. **Quality child play area that is very clean and has well-maintained structures.**

Figure 9. **Quality classroom with well-defined areas that support programming.**

4.4 Low-Cost Opportunities to Improve Safety

While surveying the private child care facilities in Worcester, it came to our attention that many facilities had minor issues with the potential to become serious health concerns. For the most part, little effort is required to remedy these potentially hazardous arrangements. However, awareness of these dangers is necessary before anything can be changed. The quality of a facility can be directly correlated to its safety, because a child that is in any kind of danger or under any unnecessary stress has a hindered ability to learn. Also, a child is not in a good position to learn if in poor health, and in serious cases one may not be able to attend school at all. In our survey, thirty-four of the fifty-six items of our checklist are labeled with the category of health and safety. Whenever we saw a serious health or safety issue, we made a point on our checklist to either mark it a priority, or at least comment on the nature of the hazard.

These small changes that schools can make with little to no cost are the main component of the feedback that we gave the schools at the conclusion of our project. For example, at Facility 445 we observed a real metal-headed hammer hanging at child height, clearly intended for use by the children. It was positioned such that if a child tried to lift it out of its holster and dropped the hammer it would be directly above his or her head. Another example that we observed, in Facility 967, was an exit to the playground from the second floor that consisted of a wooden stairwell ending in a concrete footer. The concrete footer was a big hazard, because it protruded from the ground nearly eight inches and had sharp corners. While we were discussing the hazard, we actually observed a child fall off the step. If a child were to fall into the footer, it could cause serious injury, especially to the head. Another example was found in Facility 630 where there had been issues in the past with parents trying to force entry into the school, sometimes by violent means. However, when we arrived at the school, the door was unlocked, and the director explained that their entire security system consisted of a peephole in the center entry door. In the past the school has had to lock down when the director was made aware that a parent was coming to try to forcibly remove his or her child from the school, sometimes by use of a firearm or other violent means. A child will not have an effective educational experience if he or she is under the stress of a school lockdown, or if they are afraid of the possibility of such an incident occurring. At Facility 159 there was a serious hygiene issue present where the diaper-changing area was directly in the classroom and accessible to the children. An unsupervised child could not only easily gain access to both the cleaning and sanitizing agents used in the area, but also to

get into the dirty diaper storage. Feces could be a possible source for the spread of disease, while the ingestion of some cleaning agents can be hazardous.

We have determined, through the use of our checklist, that although these small health and safety fixes are important and can improve the quality of the physical environment in these centers, they alone cannot raise the quality of the learning environment significantly. Although they may be priority items, they still generally only affect one or maybe two items on our checklist of fifty-six, so even after making these fixes the majority of centers will still not reach the goal of an optimum learning environment. More extensive and costly changes will likely be necessary to achieve the full potential of most of the centers in our survey.

4.5 Limitation on Great Quality

While many facilities have the opportunity to improve their overall health and safety with relatively easy and low-cost changes, a great improvement to quality cannot be made without substantial funding. Many of the items that measure aspects of quality depend on the amount of physical space that is available at each facility. Without additional space, many facilities simply do not have the capacity to improve. The amount of available space, in many ways, is the primary determining factor of the overall quality of a child care facility (as evidenced in Table 3 and Figure 10). However, increasing the amount of physical space is only possible through construction, whether constructing an addition to an existing building or constructing a new building altogether. The construction of a new, high-quality facility, such as the one we visited in Concord, can cost upwards of $1,000,000. In a community with the economic standing of Worcester, it is often not possible to raise sufficient funds for major renovation projects.

4.5.1 Physical Space and Quality

The first space that employees, parents, and children see upon entering any child care facility is the reception area. This area serves as a transition into the facility and provides a space for parental interaction, as well as a possible space for conferences. Although no direct learning occurs in this space, it is among the most important features of a quality facility. Many facilities in Worcester have a lack of space, and often the first room that is cut from facilities is the reception area. In several facilities that we surveyed, the front door opened directly into

classrooms or offices and thus disrupted the efficiency of the facility because there was no area for transition.

As mentioned in Chapter 2, the space allocated for teachers is extremely important, although underestimated, to a quality facility. Teachers' needs must be considered because the program support space correlates to the quality of the teaching in each center. Those facilities that had issues with available space often lacked necessary office space, including appropriate numbers of computers, internet access, and telephones, which is integral to supporting teachers. Staff members tend to remain longer at child care centers that are both comfortable and supporting work environments. The relationship between children and their caregivers is extremely important to the learning process, and thus learning is hindered when new staff members replace others that have quit.

The most critical space in any child care facility is the classroom. A voluminous classroom offers the opportunity for flexibility as children's needs change and promotes exploration. Classrooms with ample space are less cluttered and consequently produce lower stress levels in children. They also have the ability to support separate zones, such as messy play with sand or water, and quiet reading corners, which greatly enhance children's interest in learning by allowing for a range of mediums. Classrooms with the necessary amount of space are also generally safer because dangerous items can be more easily kept out of the reach of children.

Finally, outdoor play areas and other areas of activity, including indoor gross motor spaces, are an essential part of a child care facility. Play areas, despite their name, are an extension of the classroom in that they too are sites of learning. Playgrounds that do not meet minimum space requirements generally do not have the appropriate playground components to satisfy the needs of children. There must be enough space for children to engage in gross motor activities safely in order for there to be a proper distinction between the indoor classroom and the play area.

Table 3 shows the number of child care facilities in the survey that met the minimum square footage requirement in classrooms based on the overall rank of facilities. The rating given to each respective facility on Item 3.4, Sufficient Classroom Space, is recorded in the right-hand column. The four facilities with the lowest overall rankings did not meet the classroom space minimums. Seven of the top eight highest-ranked facilities met the mandated

space requirement. The one exception, third-ranked Facility 939, had three classrooms that met the minimum requirements but one classroom that barely did not. Through data arranged in Table 3, it can be seen that available square footage in classrooms is directly tied into the overall quality of a facility.

Table 3
Comparison of Classroom Space Requirement to School Ranks

Overall School Ranking	Met Minimum 35 sq ft space requirement	Rating in Item 3.4 (Sufficient Classroom Space)
1	Yes	9
2	Yes	7
3	No*	5
4	Yes	7
5	Yes	8
6	Yes	7
7	Yes	9
8	Yes	7
9	No	2
10	No	3
11	No	1
12	No	2
*Only 1 of 4 classrooms does not meet requirements		

While Table 3 shows the correlation between the amount of classroom space and overall facility quality, classroom space is not the only important area that directly ties into the quality of a child care facility. Program support space, the second section in our checklist, is the other significant determinant of adequate physical space. As Figure 10 shows, the highest-ranked schools had the highest ratings in Program Support Space. There is a clear downward trend that links the ratings on Section 2 of the checklist to the overall average rating that the schools received.

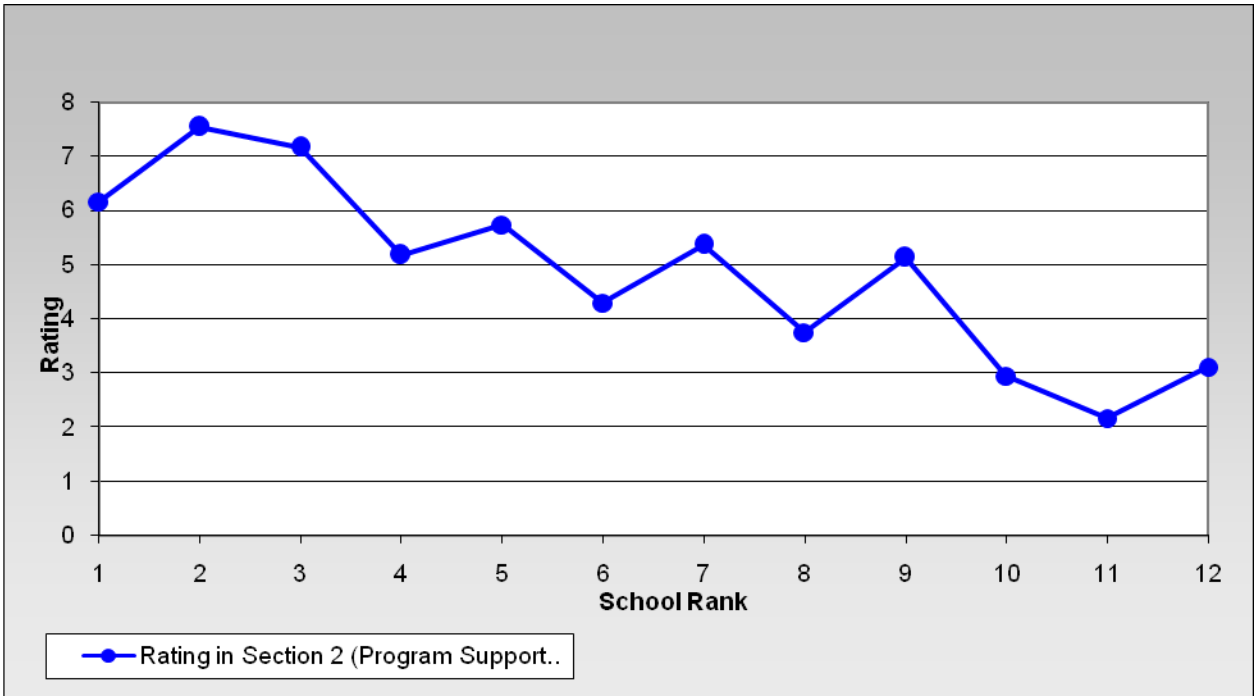


Figure 10. Ranking of facilities on overall quality rating versus rating on program support space.

Through the survey, we found that the amount of physical space is incredibly important to the overall score that the child care facilities in Worcester receive. This space includes not only classrooms, but support space for both teachers and staff. These two indicators are key to identifying the quality of child care facilities.

4.6 Overall Quality of Private Child Care in Worcester

On a broader level, we found that, through the findings presented in the previous sections, the overall quality of child care facilities in Worcester is inadequate. Many facilities have health hazards that have the potential to cause great harm to the community's children. Many facilities do not have the capacity to support both the children and the teachers and staff. Using the 0-10 rating scale that we expanded, we chose a specific benchmark for determining quality in a child care facility. We decided upon 7.5 as the minimum overall rating that signifies quality.

It is first important to understand mathematically how we used the rating scale for setting an indicator of quality. The 0-10 scale is subdivided into five textual descriptions, and the numerical boundaries for each description do not overlap with each other. Because the averages calculated in the program are accurate to three decimal places, we needed the rating scale to

correspond properly to the textual descriptions. The "Does Not Exist" description includes everything from 0.000 to 0.999; "Inadequate" includes everything from 1.000 to 2.999; "Fair" includes everything from 3.000 to 5.999; "Good" includes everything from 6.000 to 8.999; and "Excellent" includes everything from 9.000 to 10.000.

The selection of 7.500 was based on several factors. This value falls numerically in the center of the "Good" rating. We felt that a rating signifying quality should fall within this range, and 7.500 is mathematically the best choice within this range. As in the grading scale used in the American education system, a 75% is average and adequate. We decided that anything close to a 6.000 was too lenient because this mark signifies barely passing. However, we felt that anything 8.000 or above was too close to "Excellent" and thus would not be a good indicator of minimum quality.

As Figure 6 shows, the overall average for all twelve child care facilities included in our survey was 6.077. This falls well below the minimum indicator of quality that we set, and thus illustrates that, overall, Worcester's private child care facilities do not meet our definition of quality. The overall average does fall into the "Good" range, albeit barely. Of the twelve facilities in our survey, only one ranked above 7.500. This is the lone facility that met the minimum benchmark of quality. However, because it is the only facility that passed, it can be considered an outlier. Discounting Facility 445, the overall average rating of the facilities that do not meet the minimum quality standard is 5.296. Without the quality facility raising the average, the overall average of facilities falls into the "Fair" range.

It is also interesting to compare the categorical averages to the 7.500 standard, as shown in Figure 11. Of the four categorical averages, not one meets the standard. The section that comes closest, the Building Exterior and Center Entry, is the section that has the least impact on the overall average because it has the fewest items and the lowest weight. The lowest rated section, Program Support Space, is expected with the lack of space problem outlined in section 4.4.

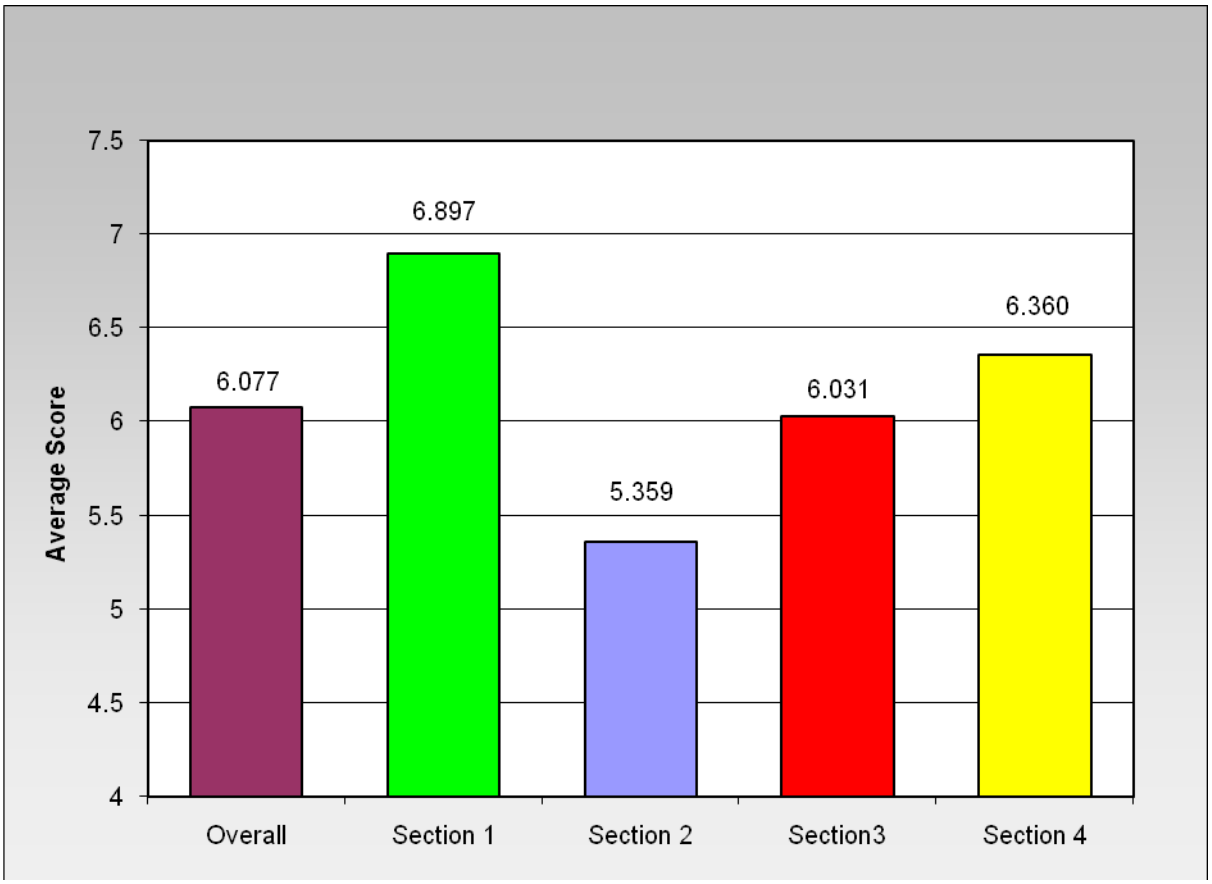


Figure 11. Average section scores for all schools.

We also ran overall averages for each individual item in the checklist to uncover both the largest problems and the areas that need the least work in Worcester's private child care facilities. Table 4 presents the top five and bottom five items in terms of overall average rating. The highest rated item, Kitchen is Safe and Appropriately Equipped for Type of Food Service Planned, may initially be surprising, considering the poor state of many of the facilities. However, this item rates the kitchen according to how it meets the respective program's needs. In many facilities, the kitchens did not prepare cooked meals, but rather prepared only snacks. Because the kitchens were fully stocked, including ovens, stovetops, refrigerators, and often dishwashers, the kitchens more than adequately met the program needs. This may not necessarily have been the case if the facilities prepared cooked meals for their children. The lowest ranked item, Well-Designed Gross Indoor Motor Space, ranked incredibly low because most centers simply did not have this space and consequently received zeroes for ratings. The few facilities that did have indoor motor spaces made use of rooms originally designed for other

uses, such as gymnasiums, and thus we did not consider them well-designed. The handicapped accessibility item may be slightly misleading, with an average rating of 3.667. It is difficult to rate the level of handicapped accessibility because it can be viewed in several ways. Some define handicapped accessibility as allowing a handicapped person to navigate unassisted in a particular building. For the purpose of our project, we rated the amount of physical space to which handicapped people had access. Very few facilities were completely handicapped-accessible. The majority were not handicapped-accessible, but by default could accommodate a handicapped person in a small percentage of their spaces.

Table 4

Highest and Lowest Averages for Individual Items

Rank	Section	Average Score
1	2.12 Kitchen is Safe and Appropriately Equipped for Type of Food Service Planned	7.375
2	4.13 Play Area Is Clean	7.250
3	3.8 Arrangement and Layout of Classroom Space Supports Programming	7.083
4	3.19 Electrical Service is Ample	7.000
5	1.1 Building Exterior is Clean and Well-Maintained	7.000

Rank	Section	Average Score
52	4.11 Play Area is Handicapped-Accessible	3.667
53	2.2 Meeting Space is Sufficient	3.583
54	3.20 Appropriate Acoustical Features Reduce Noise Level of Center	3.500
55	2.7 Appropriate Space is Designated for a Sick Child to Rest While Waiting for a Parent	2.500
56	3.21 There is a Well-Designed Gross Indoor Motor Space	1.583

While we have determined that the overall state of private child care facilities in Worcester is inadequate, we decided that the most efficient way to give practicable feedback was to treat each facility individually. We kept the overall item ratings, as well as the average categorical ratings, in mind when writing feedback.

Chapter 5: Conclusions and Recommendations

As stated in Chapter 2, our project had two main goals. The first goal of our project was to assess the quality of child care facilities in Worcester. Through our survey, we were able to observe and record both problem areas and areas of excellence in twelve of Worcester's forty-six facility-based child care centers. With this information, we felt that our project could directly aid the centers involved in our study. Child care is very important to any community and particularly one with the economic standing of Worcester.

Our project's second main goal was to assist Edward Street Child Services and the Children's Investment Fund with a statewide facilities readiness study by conducting a smaller-scale version as a pilot in the city of Worcester. By choosing and analyzing the effectiveness of the modified ECPEC, we were able to provide the Children's Investment Fund with a set of suggestions and recommendations to facilitate the process of their larger survey.

5.1 Recommendations for Surveying and a Tool

The general quality of the physical environment of a child care center cannot be quantified in a straightforward way, because the observations made in such a qualitative survey, while valuable, are not concrete. In order to determine a level of overall quality, it must be divided into specific items to evaluate, as in the ECPEC. A wide range of possible scores for those items is necessary for them to be accurate, and they should be made by unbiased parties, though those people should be fully informed and knowledgeable on the subject of quality physical environments in early learning. It is important to be consistent throughout the assessments, so that the data of one facility will be comparable to that of another. This can be helped by written descriptions that correspond to the numerical scores, as they can be used to match the numbers with observations. Our modified checklist included a rating system with this design, which can be seen in Appendix A. Another way to help ensure consistency, though less efficient, is to have a group of evaluators who discuss the quality of each item, because different people might have different views or might notice different aspects of particular items. If the statewide study is split into several teams, as is quite possible, we recommend a unified meeting of all teams in which the checklist and survey process is described in detail. Each survey team should have the same understanding of the interpretations contained within the survey tool to ensure comparability in the results.

As far as implementing a survey tool, we recommend the final modified version of the ECPEC used in our own survey. The first modification successfully eliminated unnecessary items that did not directly correlate to quality, and also added an efficient and appropriate weighting system. The second modification eliminated redundant items and created a section that smoothed the process of discussion with center directors. Mentioned in our analysis of the tool in Chapter 4 were two item-related issues with the checklist that we did not modify. The ambiguity of conditional features was not an issue until we had completed the survey process and were analyzing the results. We recommend changing the check system to allow the ability to mark features as being not applicable. An alternative would be to rewrite these features, though it is unlikely that they could be eliminated without much impact on the effectiveness of the checklist. Multi-part features could be split into as many as needed, though this would only slightly positively affect the checklist's ease of use.

5.2 Recommendations for Individual Facilities

In order to provide the greatest benefit possible to the facilities involved in our study, we wrote each facility an individual letter that highlighted both their successes and failures in attaining a level of high quality. Attached to this letter was a printout containing the facility's ratings in each item in our checklist, as well as a table that included the overall and categorical averages for all facilities in the study. In this table, all facility names were still anonymous, with the exception of the facility to which we were explicitly providing. Each letter also began with an introduction that summarized our project and thanked the center for participating in our survey.

The written feedback is organized by the four categories in our checklist. Using the data that we recorded for each facility, we identified areas of need on which to focus the individual feedback. The purpose of the letters is to make low-cost suggestions to each facility that would remedy its health and safety issues. We provided each facility a specific solution to each item that we found to be inadequate, such as a closed-circuit television system to monitor visitors as well as a keypad lock for entrance doors. For each suggestion, we provided a price range and a website where the center's staff could directly access the product that we mentioned. In addition, we emphasized the areas in which the facility scored well.

Generally, we were successful in providing low-cost solutions that would greatly improve health and safety in the facilities. The cumulative price for all suggestions for each facility fell under $1,000. While this is still a substantial amount of money, in context it would not take much to create a large impact on Worcester's low-quality child care facilities.

5.3 General Cost Analysis for Facilities

After visiting a number of child care facilities in Worcester, it became clear to our group that in order to greatly improve the quality of child care offered by these centers, major renovation would be needed. These facilities suffered severely from a lack of space, as well as being housed in old and sometimes structurally unsound buildings that could produce a myriad of problems. We performed a general cost analysis of how to solve some of the problems common to these facilities to estimate the amount of funding necessary to greatly improve quality.

In considering the costs of these renovations, some generalizations had to be made due to the unique nature of every child care facility. Although there were common problems, there was seldom a common solution, and thus the centers' statistics had to be averaged to try to create, theoretically, a general child care facility. With this general facility, we could estimate the total amount of funding needed for specific problems for all the facilities in Worcester. On average, a child care center will need between 70 and 90 square feet of indoor space per child, including classroom space as well as program support space (A Child Care, Inc., 2002, p. 5; Member Agencies of the Minnesota Child Care, p. 23). For the purpose of this estimate we assumed an average of 80 square feet per child, which fell easily within this range.

Of the twelve facilities surveyed in this assessment, the average number of children served was 52.66 per facility. When one outlier was removed (one center served 123 children) the average became 46.27. In Worcester, the average number of children served per center was calculated to be 48.37, as shown in Table 5. For this estimation, we decided that an appropriate assumption would be 50 children per school. This would give some of the larger centers slightly more leeway while still being representative of the overall capacity of schools in Worcester. This means that, overall, we assumed that the square footage of a typical child care center in Worcester was 80 square feet per child and contained 50 children, which equals 4,000 square feet.

Table 5
Number of Children in Each Facility

School	Students licenced
Tiny Treasures Learning Center	37
Webster Square Day Care Center	61
Boys and Girls Club	19
Gentle Circle Learning Center	59
First Friends Early Care and Education	65
Quinsigamond Children's School	40
UMMHC Lincoln Child Care Center	40
Rainbow Child Development Center	64
Appleseed Early Learning Center	34
Jewish Community Center Preschool	123
UMMHC Memorial Child Care Center	40
Chestnut Nursery School	48
Average	52.66
Average of All Worcester Facilities	48.37

5.3.1 Mold Removal

Mold removal can be an expensive process for a child care center, especially in cases where the problem is recurring due to extenuating circumstances. Those facilities located in church basements, for example, are especially prone to mold problems, due to the cooler, damper atmosphere that typically exists in a basement. For the typical 4,000 square feet Worcester center, it would cost approximately $400 to conduct a mold inspection (Home and Mold Inspections Plus, 2008), and, if found, the following mold removal can vary greatly in price. Depending on the level of contamination, a typical mold removal can cost anywhere from $1,000

to $6,000. Although this is less expensive than other typical large scale renovations, mold removal can be a recurring cost that can be required as much as twice a year.

5.3.2 Asbestos Removal

Another type of major renovation that is needed in many centers in Worcester is the removal of asbestos insulation. Asbestos is a mineral that was popular in the past for its uses as an insulator and a sound-proofer due to its unique physical properties. Asbestos is naturally fibrous, which gives it a high tensile strength. Health problems occur when microscopic asbestos fibers break off and become airborne. It is possible for these fibers to lodge in the lungs when present in the air, which can lead to serious health problems, most commonly lung cancer and mesothelioma, a form of cancer that affects the lining of certain organs. In many facilities, the asbestos has been removed from the area where children are present, but due to the airborne nature of the actual cancerous material it is necessary to completely remove all asbestos. The cost of removing asbestos can be very high due to the potential hazards associated with it, and the approximate cost tends to be around $3 or $4 per square foot in a large facility (Cost Helper, 2006). It is not always necessary to remove the asbestos if it is properly shielded from damage and exposure and therefore unlikely to become airborne. The removal of it is still recommended, however, especially in some of the aging child care facilities that exist in Worcester, as older buildings are more likely to have friable, or flaking, asbestos that has the potential to become airborne. In our average Worcester facility, the removal of asbestos lining from pipes would probably cost around $3,000 (Remodel Guide, 2007). The really expensive prospect, however, is the removal of spray-on asbestos insulation, which costs on average about $10 per square foot in 1987 (Perspectives: Asbestos Removal, 1987). If we assume that our typical facility has asbestos insulation in the attic and basement but has already removed it from the classroom area, there could be as much as 800 square feet of removal, which could run from $8,000 to as much as $15,000 depending on the hazard level of the removal. If the insulation is already friable and dangerous, the removal could cost as much as $35 per square foot, which would come out to be about $28,000, although this is the most expensive case (Perspectives: Asbestos Removal, 1987).

5.3.3 Heating, Ventilation, and Air Conditioning Replacement

Another major expense that many of these schools face is the efficiency of their heating, ventilation, and air conditioning (HVAC) systems. Because of the old age of many of the child care centers in Worcester, their systems tend to be old and outdated, resulting in a large amount of waste and inefficiency. The HVAC system in a facility tends to be around 35% of the energy usage (N.C. Department of Environment, 2003), which can translate into a big loss in gas or electricity bills if the system is wasteful. Although the replacement of the entire system can be massively expensive, to update and seal the system is far less expensive and can still result in efficiency increases of up to 20% or 30% depending on the age of the system (Housing Zone, 2003). The price of such an upgrade can vary greatly depending on the type and size of the system, but a facility similar in size to the generic Worcester facility, using oil heat, would probably cost upwards of $30,000 to install an entire new system, and a minimum of $6,000 to upgrade it for improved efficiency (Housing Zone, 2003).

5.3.4 Construction of New Space

By far the most expensive proposition, but arguably the most beneficial to the overall quality of a facility, is the prospect of constructing an addition to the center, either in the form of an additional story, a new wing, or an additional classroom. Although this is substantially more expensive than some of the other issues addressed in this section, adding more space is the only way that many centers in Worcester can improve. They are cramped and overcrowded, and have almost no room for offices and other program support space. For our purposes, we considered the cost of adding a single, 20-child capacity classroom to our average center. We assumed 40 square feet per child to exceed the bare minimum and maintain a level of quality without being overly expensive, and also to allow for some extra space to be made unusable by furniture, closets, and other classroom fixtures. The addition would be approximately 800 square feet of floor space (with dimensions 32 feet by 25 feet). In order to build this room, with the addition of electrical wiring, plumbing for an activity sink, but not including any furniture or fixtures or anything else, we estimated that it would cost approximately $100,000 to $120,000 depending on the time of year, location, and type of construction. Construction labor is more expensive in the winter months because of harsh weather conditions. It has been estimated that a contractor for this type of work will generally charge around $40 per man hour (All Experts, 2008). Assuming

that the job takes three carpenters approximately three to four months to complete, working eight hours a day and five days a week, the cost of labor is roughly $60,000, which allows for about the same amount of money for expenses and materials, which is the standard on a job of this type. Although the construction of additional space can be prohibitively expensive, it is something that every school should strive for, because, as our checklist indicated, the amount of space in a facility has a direct effect on the overall quality of that facility for a variety of reasons.

5.4 Procurement of Funding

Because the pool of potential state funding is relatively small, it is not realistic to expect the allocation of funding required to renovate facilities as explained in section 5.3. However, state funding can make a difference in improving the health and safety aspects of Worcester's facilities through the individual feedback outlined in section 5.2.

It is necessary to prioritize the allocation of funding to ensure the highest overall quality possible. The facilities rated lowest in health and safety items can benefit more from a set amount of money than the higher-rated facilities because they have more room to improve. Of the fifty-six items in our modified checklist, thirty-four were designated as health and safety–related. When prioritizing funding, these items should carry more weight, because they are more important to a facility's overall quality. An average of all health and safety items should be taken for each facility involved in a study, for both the Children's Investment Fund's statewide study and more specifically the survey we conducted in Worcester (see Table 6). The procurement of funding should depend on the ranking of health and safety averages as opposed to overall averages. It is imperative that child care facilities offer a clean, safe environment for early education.

Table 6
Health and Safety Prioritization

Health and Safety Rank	Overall Rank	Child Care Center	Health and Safety Average
1	1	445	6.015
2	3	939	5.604
3	5	535	5.590
4	6	813	5.526
5	2	420	5.495
6	9	630	5.466
7	10	563	5.458
8	7	762	5.335
9	4	321	5.323
10	8	207	5.256
11	12	159	4.980
12	11	967	3.706

5.5 Overview of Conclusions and Recommendations

The modified ECPEC used in our survey is an adequate survey tool, and we recommend its use in the Children's Investment Fund's statewide survey. With this tool, we determined that Worcester's child care facilities need to improve their quality. Because the primary factor in the poor facilities is lack of space, a great deal of funding is necessary to greatly improve facilities through construction and renovation projects. However, improvements to some of the health and safety aspects of child care facilities can be made on a relatively low budget.

It is a slow and arduous process to improve child care, but the benefit that future generations will receive is immense and we hope that our work in this field will yield fruitful results. It has been our pleasure to work with Edward Street Child Services and to meet the amazing children in Worcester's child care centers. We hope that, through this project, the Worcester child care system can acquire state funding and improve the quality of its facilities for the sake of posterity.

References

A Child Care, Inc. (2002). Child Care Facilities: Part of a Series of Resource Papers on Developing Child Care and Early Education Services. Retrieved December 9, 2008 from http://www.childcareinc.org/pubs/CCFacilities.pdf

All Experts. (2008). Building Homes or Extensions - $/sqft cost of room addition in Dunedin, FL. Retrieved December 9, 2008 from http://en.allexperts.com/q/Building-Homes-Extensions-2333/sqft-cost-room-addition-1.htm

American Academy of Pediatrics, American Public Health Association, & National Resource Center for Health and Safety in Child Care. (2003). Stepping Stones to Using Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care (2nd ed.) Elk Grove Village, IL: American Academy of Pediatrics. Retrieved September 23, 2008 from http://nrckids.org/STEPPING/SteppingStones.pdf

American Academy of Pediatrics, American Public Health Association, & National Resource Center for Health and Safety in Child Care. (2002). Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care (2nd ed.) Elk Grove Village, IL: American Academy of Pediatrics. Retrieved September 23, 2008 from http://nrckids.org/CFOC/PDFVersion/National%20Health%20and%20Safety%20Performance%20Standards.pdf

Bruce, D. (2006). Quality Early Childhood Education Requires Quality Facilities. Retrieved September 28, 2008, from http://www.edwardstreet.org/files/Quality_Childcare_Requires_Quality_Facilities.pdf

Cabrera, N. J., Hutchins, R. M., & Peters, E. (2006). *From Welfare to Childcare: What Happens to Young Children When Mothers Exchange Welfare for Work*. Psychology Press. Available from http://books.google.com/books?hl=en&lr=&id=OkGokRwv_pgC&oi=fnd&pg=PA149&dq=Giannarelli+and+Barsimantov+2000)&ots=5JCGbiYMwx&sig=F9ISzq1B7UdKG96aaJhnRFf607w#PPP1,M1

Center for Mental Health in Schools at UCLA. (2004, March). Resource Synthesis to Help Integrate Mental Health in Schools into the Recommendations of the President's New Freedom Commission on Mental Health. Retrieved September 27, 2008, from http://smhp.psych.ucla.edu/pdfdocs/newfreedomcommission/resourcesynthesis.pdf

Child Care and Development Fund: Average Monthly Percentage of Children in Child Care by Age Category and Type of Care (FFY 2006). (2008, July 31). U.S. Department of Health and Human Services – Child Care Bureau. Retrieved September 27, 2008, from http://www.acf.hhs.gov/programs/ccb/data/ccdf_data/06acf800/table13.htm

Childcare – Why Is Childcare Important? Available Childcare, Effects of Childcare, Availability, Cost, and Quality of Childcare. (2008). *Net Industries*. Retrieved September 27, 2008, from http://family.jrank.org/pages/226/Childcare.html

Cost Helper. (2006). Cost of Asbestos Removal. Retrieved December 9, 2008 from http://www.costhelper.com/cost/home-garden/asbestos-removal.html

Early Childhood Physical Environment Checklist. (2006, February). Local Initiatives Support Corporation/Community Investment Collaborative for Kids.

Edward Street Child Services: Providing advocacy, resources and support to early childhood educators and the children they serve. (2007). Retrieved September 27, 2008, from http://www.edwardstreet.org/files/withlogo.pdf

Evans, G. W., & McCoy, J. M. (1998). When Buildings Don't Work: The Role of Architecture in Human Health. *Journal of Environmental Psychology, 18*(1). Retrieved September 17, 2008, from http://linkinghub.elsevier.com/retrieve/pii/S0272494498900895

Fiene, R. (2002). 13 Indicators of Quality Child Care: Research Update. Retrieved September 23, 2008 from http://aspe.hhs.gov/hsp/ccquality-ind02/

H.R. 4060: Universal Prekindergarten Act—110th Congress. (2007). Retrieved November 19, 2008, from website of GovTrack (database of federal legislation): http://www.govtrack.us/congress/bill.xpd?bill=h110-4060

Grunewald, R., & Rolnick, A. (2008). Early Childhood Development: Economic Development with a High Public Return. Retrieved November 19, 2008, from http://www.minneapolisfed.org/publications_papers/studies/earlychild/rolnick_grunewald_ECD_web.ppt

Harms, T., Clifford, R. M., & Cryer, D. (1998). Early Childhood Environment Rating Scale, Revised Edition. Retrieved Monday, September 22, 2008, from http://www.fpg.unc.edu/~ecers/intro_frame.html

Home and Mold Inspections Plus. (2008). Home inspection and mold inspections for all of Indian River and Brevard Counties. Retrieved December 9, 2008 from http://www.aproinspectionsplus.com/services.html

Housing Zone. (2008). Cost Estimator: HVAC Systems. Reed Business Information. Retrieved December 9, 2008 from http://www.housingzone.com/index.asp?layout=estimator&estimator=hvac

Hunt, J. T. (2008). HVAC Efficiency: Boilers. Retrieved December 9, 2008 from http://www.facilitiesnet.com/ms/article.asp?id=8263

Kershaw, A. (2008). *Universal Pre-Kindergarten (UPK) Expansion and Phase-in Concept Paper:* Updated May 2008. Retrieved September 11, 2008, from http://www.eec.state.ma.us/docs/UPK_Concept_Paper_mostrecentMay2008.pdf

Legendre, A. (1995). The Effects of Environmentally Modulated Visual Accessibility to Caregivers on Early Peer Interactions. Retrieved September 26, 2008, from http://jbd.sagepub.com/cgi/reprint/18/2/297

Legendre, A. (2003). Environmental Features Influencing Toddlers' Bioemotional Reactions in Day Care Centers. Retrieved September 26, 2008, from http://eab.sagepub.com/cgi/reprint/35/4/523

Levin, A. (2004, February 7). Day Care Centers Show Benefits Over Other Care Settings. Retrieved September 27, 2008, from http://www.cfah.org/hbns/news/benefits02-07-04.cfm

Massachusetts State Regulatory Authority. (1997). Enforcement Standards and Definitions for Licensure or Approval. Retrieved September 22, 2008 from http://nrckids.org/STATES/MA/ma_oldTOC.htm

Massachusetts State Regulatory Authority. (1997). Standards for the Licensure of Group Day Care and School Age Child Care Programs. Retrieved September 22, 2008 from http://nrckids.org/STATES/MA/ma_7TOC.htm

Maxwell, L. E., & Evans, G. W. (1999). Design of Child Care Centers and Effects of Noise on Young Children. Retrieved September 26, 2008, from http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/2d/7b/e2.pdf

Member Agencies of the Minnesota Child Care Resource and Referral Network. Starting a Center Based Child Care Program in Minnesota. Retrieved December 9, 2008 from http://www.mnchildcare.org/pdfs/starting_program.pdf

National Association for the Education of Young Children. (2006). About NAEYC. Retrieved Monday, September 22, 2008, from http://www.naeyc.org/about/

National Association for the Education of Young Children. (2006). Standard 9: NAEYC Accreditation Criteria for Physical Environment Standard. Retrieved Monday, September 22, 2008, from http://www.naeyc.org/academy/standards/standard9/

N.C. Department of Environment and Natural Resources, Division of Pollution Prevention and Environmental Assistance. (2003). Energy Efficiency in Industrial HVAC Systems. Retrieved December 9, 2008 from http://www.p2pays.org/ref/26/25985.pdf

Owen, M. T. (2004, April 13). Child Care and the Development of Young Children (0-2). Retrieved September 27, 2008, from website of Encyclopedia of Early Childhood Development: http://www.child-encyclopedia.com/Pages/PDF/OwenANGxp.pdf

Proscio, T., Sussman, C., & Gillman, A. (2004, May). Child Care Facilities: Quality By Design. *Local Initiatives Support Corporation*. Retrieved September 23, 2008, from http://www.lisc.org/content/publications/detail/815

Remodel Guide. (2007). Asbestos Removal. Retrieved December 9, 2008 from http://www.remodelguide.com/reports/guides/asbestos.html

Sussman, C., & Gillman, A. (2007, August 6). Building Early Childhood Facilities: What States Can Do to Create Supply and Promote Quality. Preschool Policy Report, NIEER. Retrieved September 23, 2008 from http://www.lisc.org/content/publications/detail/5982

Perspectives: Asbestos removal; as demand grows, an industry blossoms. (1987). *The New York Times.* Retrieved December 9, 2008 from http://query.nytimes.com/gst/fullpage.html?res=9B0DE5D61F38F931A15750C0A961948260

Trancik, A. M., & Evans, G. W. (1995, September). Spaces Fit for Children: Competency in the Design of Daycare Center Environments. *Children's Environments 12*(3). Retrieved September 26, 2008, from http://www.colorado.edu/journals/cye/12_3/12_3article3.pdf

Appendix A: Modified Version of the ECPEC

The following is the Early Childhood Physical Environment Checklist with the final set of revisions made by our project team. It is the version used in all the surveys cited in this report, after the first three. The item numbering for the original ECPEC was retained, although various items were removed.

Child Care Facility Evaluated:_____ Date:_____ Number:_____

Evaluated by Peter Cacciatore, Stephen Franceschelli, Kyle Hess, and Kurtis McCannell

Early Childhood Physical Environment Checklist
(Modified for the Worcester Child Care Facilities Assessment)

1. The Building Exterior & Center Entry

BUILDING EXTERIOR

1.1 * M

BUILDING EXTERIOR IS CLEAN AND WELL-MAINTAINED

- Area free of trash and debris
- Walls, windows, trim intact
- Exterior stairs, sidewalk in good condition
- Trees, shrubs, lawn well-maintained
- No graffiti on walls

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

1.3 *** M, H

BUILDING IS STRUCTURALLY SOUND AND ENVIRONMENTALLY SAFE

- No plumbing leaks
- Roof is in good condition with no leaks
- Building is lead-free
- Building is radon-free
- Building is asbestos-free
- Building is free of mold

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

1.5 H

OUTDOOR LIGHTING IS ADEQUATE AND WELCOMING

- Security lighting on building and playground
- Exterior lighting makes center more welcoming after dark

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

1.6 P

BUILDING IS HANDICAPPED ACCESSIBLE

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

1.7** H

ENTRANCE TO CENTER IS SAFE AND SECURE

- Clearly marked
- Has exterior lighting
- Security system controls access to center and screens visitors via intercom, personal contact, or technology
- Pathways free of snow and ice

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

RECEPTION AND CIRCULATION

1.8 P, H

RECEPTION AREA IS WELL-DEFINED AND SECURE

- Signage directs visitors to reception area
- Clearly defined space for reception
- Controlled access to children's space
- Clear view of visitors entering center
- Serves as transition into center

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2. Program Support Space

2.1 *** P

SEPARATE OFFICE SPACE IS SUFFICIENT

- Office space provides opportunities for confidential conversations between staff and with families
- Sufficient number of administrative offices to meet center's staffing needs
- Space for files, materials, office equipment

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

2.2 P, M

MEETING SPACE IS SUFFICIENT

- Sufficient amount of space for staff and parent meetings
- If it is in a multi-purpose space, storage is available for tables, chairs
- Comfortable and functional adult-sized furnishings in good repair
- Good acoustics

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.3 ** P, M

ADULT LAVATORIES MEET PROGRAM NEEDS

- Sufficient number for staff and visitors
- Conveniently located
- In good repair

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.4 ** P, M

APPROPRIATE WORK SPACE IS DEDICATED FOR TEACHERS AND STAFF OUTSIDE THE CLASSROOM

- Resource area with work surface and curriculum materials, tools, and supplies
- Access to computer and phone
- Functional, attractive, and in good repair

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.5 * P, H

SECURE AND ACCESSIBLE STORAGE SPACE FOR STAFF IS AVAILABLE IN OFFICES, CLASSROOMS, CLOSETS, OR OTHER STORAGE AREAS

- Locked storage for personal possessions
- Storage for files, paperwork, children's records
- Closed storage for classroom materials
- Sufficient storage for bulk supplies, seasonal items, etc.
- Appropriate storage for first aid supplies

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.7 ** P, H

APPROPRIATE SPACE IS DESIGNATED FOR A SICK CHILD TO REST WHILE WAITING FOR A PARENT

- Near lavatory
- Room for cot to rest
- Easily supervised
- Dedicated space specifically for sick children

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.9 ** P, H

TELEPHONE SYSTEM IS ADEQUATE

- Sufficient number of phone lines to handle needs of program
- Working telephone or intercom in each classroom
- Telephone system provides intercom between classrooms and office

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.10 *** H

HEATING AND AIR CONDITIONING IS EFFECTIVE, SAFE, AND RESPONSIVE

- Heating consistent and comfortable
- Cooling consistent and comfortable
- Cooling units do not block windows
- Systems can be manually controlled
- Temperature controlled within individual classrooms
- Radiant heating in flooring, especially in infant/toddler rooms

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.12 ** M, H

KITCHEN IS SAFE AND APPROPRIATELY EQUIPPED FOR TYPE OF FOOD SERVICE PLANNED

- Conveniently located
- Clean and efficiently laid out
- Closed storage for dishes, utensils, bulk foods, including locked storage for any potentially hazardous items
- Appropriate equipment for type of food service, in good working condition
- Adequate provisions for handling waste and recyclables
- System for record keeping, posting notices

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

2.15 *** H

MECHANICAL/ELECTRICAL CLOSET IS SAFE AND FUNCTIONAL

- Locking door
- Control panels for electrical and telecommunication equipment easily accessible for servicing
- Acoustic insulation if near classrooms or offices
- Adequate lighting
- Located near service entrance and accessible through non-classroom space

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

2.16 H

CUSTODIAL FACILITIES ARE SAFE AND FUNCTIONAL

- Locking door
- Provisions for waste handling and disposal
- Slop sink on floor or janitorial sink
- Space for brooms, mops, vacuum cleaner
- Secure storage for cleaning supplies
- Adequate lighting

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3. Children's Spaces

CLASSROOM

3.1 *** P

ALL GROUPS OF CHILDREN (as defined by NAEYC guidelines) ARE IN DISTINCT CLASSROOM SPACES ACOUSTICALLY SEPARATED BY WALLS

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.2 *** P, H

CHILDREN'S LAVATORY IS LOCATED DIRECTLY ADJACENT TO CLASSROOM

- Opens directly onto classroom
- Location and design provide good sightlines into lavatory from the classroom

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.3 ** P, H

CHILDREN'S LAVATORY IS WELL-DESIGNED FOR CHILD CARE USE

- Fixtures, soap, paper dispensers correct size and height
- Ventilated with mechanical exhaust fan
- Drain in floor

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.4 *** P

CLASSROOM OFFERS AMPLE SPACE

- Activity area exceeds licensing minimum
- Allows for flexible use as children's needs change
- Space does not feel crowded

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.5 P, H

CLASSROOM ENTRY IS WELL-DESIGNED

- Provides for a distinct and separate area that allows families and visitors to enter without disrupting classroom activities
- Each child has his or her own cubby large enough for all personal belongings
- Parent notice board and sign-in
- Transition area/seating for removing outdoor clothes, etc.

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.6 ** P

ARRANGEMENT OF CLASSROOM SPACE IS FUNCTIONAL

- Clear pathways through the space
- Mix of floor surfaces: non-skid resilient flooring and carpet
- Not crowded or cluttered
- Sufficient space for cots when children are napping
- Room arranged for wheelchair access if needed

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.7 *** H

CLASSROOM SPACE IS SAFE

- Pillars and posts wrapped with soft covering
- Space easily supervised
- Heating units and pipes securely covered
- All outlets are child-safe or covered
- Cords secured out of children's sight and reach
- Hazardous substances and sharp objects stored out of children's sight and reach
- Doors have view panels for safe entry or exit from rooms
- Protective barrier/shatterproof glass on windows at child-height
- Operable windows have secure screens
- Operable windows above the first floor have child-safe barriers
- Shelf and cubby units anchored to wall or floor

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____

_____

_____

3.8 ** P

ARRANGEMENT AND LAYOUT OF CLASSROOM SPACE SUPPORTS PROGRAMMING

- Separate zones for quiet, active, and messy play
- Interest areas well-defined using furnishings, room dividers, and architectural features
- Compatible activities adjacent to each other
- Materials displayed and accessible to children
- Interest areas placed near resources to support the activity (art near water, computer near electric outlet, blocks on rug)
- Room organized to promote independence and exploration

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____

_____

_____

3.9 ** P

SPACE SUPPORTS TEACHERS

- Adult-height sink in classroom (other than diaper sink)
- Adult-height work surface
- Telephone and/or intercom system

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____

_____

_____

3.10 P, M

AESTHETICS AND MOOD CREATE A COMFORTABLE AND SOOTHING ENVIRONMENT

- Harmonious color scheme
- Furnishings and rugs create a unified look
- Muted color palette
- Many soft elements in the space
- Emphasis on natural materials and nature

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.11 ** P, M

CHILDREN'S FURNISHINGS ARE SUFFICIENT, APPROPRIATE, AND CLEAN

- Sturdy, well-made, in good repair
- Cubbies, tables, chairs, and shelves have a unified appearance
- Appropriate size and scale for age group
- Each child has chair, cubby, storage for individual work, and a cot or crib
- Soft furnishings available

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.12 *** M

CLASSROOM IS IN GOOD REPAIR

- Ceiling, floor, floor coverings, and walls free of splinters, peeling paint, water stains, or excessive wear
- Windows, heating units, other fixed features intact and in good condition

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.13 *** P

CLASSROOM HAS ACTIVITY SINK FOR CHILDREN

- Sink and counter at child-height
- Soap and paper towels flush-mounted at child-height

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.14 ** P

SUFFICIENT NUMBER OF EXTERIOR WINDOWS PROVIDE GOOD AMOUNT OF NATURAL DAYLIGHT AND VISIBILITY TO OUTDOORS

- Access to child-height windows to the outdoors
- Lofts or raised platforms up to higher windows
- Window coverings adjust to control level of natural light

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.15 P, H

INTERIOR WINDOWS ALLOW FOR VISIBILITY AND SECURITY BETWEEN CLASSROOMS WHILE STILL PROVIDING ACOUSTICAL SEPARATION

- Windows to other classrooms and/or corridors
- Windows or observations spaces allow parents, staff, and visitors to see into classrooms
- Safety glass used where glass is child-height

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.16 ** P, H

CLASSROOM OFFERS AMPLE STORAGE SPACE

- Sufficient space for children's materials and supplies used on a regular basis
- Closed storage space available in classroom for children's supplies and teacher materials
- Individual storage for children's belongings
- Easily accessed storage for cots/mats
- Secure storage of medicines/hazardous materials

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

3.18 ** P, H

LIGHTING IS VARIED AND ADJUSTABLE

- Balance of natural and artificial lighting in each classroom
- Fluorescent lighting not the only source of artificial light
- Different lighting used for different activity areas
- Light level can be adjusted by turning some fixtures on and off
- Classroom lighting has dimmer switches

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.19 *** H

ELECTRIC SERVICE IS AMPLE

- Sufficient number of outlets to avoid use of extension cords
- Circuit breakers are not thrown because of overloads to system

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.20 ** P

APPROPRIATE ACOUSTICAL FEATURES REDUCE NOISE LEVEL OF CENTER

- Absence of ambient noises such as buzzing lights, electronic hums, ventilation system motors, etc.
- Limited transmission of sound from adjoining rooms or outside street noise
- Efforts made to soften and absorb excessive noise – use of acoustic tiles and panels, fabric, cushions, rugs, upholstered furniture
- Absence of high ceilings that would contribute to poor acoustics

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

OTHER CHILDREN'S SPACES

3.21 ** P, H

THERE IS A WELL-DESIGNED INDOOR GROSS MOTOR SPACE

- Designated space for active indoor play available
- Suitable climbing, jumping, crawling, and balance equipment
- Safety mats or protective flooring
- Suitable wheeled toys for different age groups
- Convenient storage for gross motor equipment

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

INFANT AND TODDLER ROOMS

3.22 ** P, H

FLOOR SURFACE IS VARIED

FOR INFANTS:

- Well-padded carpet, low carpeted risers in crawling spaces
- Easily cleaned resilient flooring in eating areas and at changing table

FOR TODDLERS:

- Mix of carpet/area rugs and washable flooring
- Floor level changes with carpeted risers or steps

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

3.23 *** P, H

DIAPER CHANGING AREA IS ACCESSIBLE AND HYGIENIC

- Location of diaper area allows teacher to continue to supervise classroom
- Sink location is separate from food prep area
- Diaper sink separate from other sinks and adjacent to diaper area
- Changing table has safety rail and non-porous surface
- Storage of soiled diapers convenient, hygienic, and air-tight
- Diapering and sanitizing supplies stored securely
- For toddlers, changing table has steps
- Area is ventilated with mechanical exhaust fan
- Diaper and wipe storage accessible with one hand while teacher still has one hand on child
- Sink features wrist-controlled faucets

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.24 *** P

SPACE FOR INFANT AND TODDLER ACTIVITIES IS SUFFICIENT AND APPROPRIATE

- Sufficient usable floor space for crawling, climbing, and other activities (after subtracting floor space used for cribs, feeding, and diapering activities)
- Well-defined napping area such as an alcove or separate crib area (if this meets licensing regulations for supervision and visibility)
- Available space for children to get out of the group, rest, or watch the activities

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

3.25 *** P, H

INFANT AND TODDLER FURNISHINGS ARE APPROPRIATE

- Comfortable adult seating, suitable for holding or rocking children
- Soft surfaces: futons, water mattress, other textures if allowed by licensing
- Secure railings and surfaces for children to pull themselves to standing position
- Pictures and non-breakable mirrors at crawler's eye level
- Low open shelves for toys
- Bins to isolate toys that have been in a child's mouth
- Equipment to sanitize infant toys
- Sturdy furnishings designed for use with these age groups
- Cribs and evacuation crib(s) as required by licensing
- Individual feeding chairs
- No use of walkers
- Limited use of "containment" equipment such as Exersaucers, swings, etc.
- Elevated enclosed play platform

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4. Outdoor Play Areas

4.1 *** P, H

PLAY AREA IS WELL-LOCATED

- Classrooms open to outdoor play space
- If no direct access from classrooms, distance to play area is short and does not require crossing traffic
- Convenient access to bathroom, sink, drinking water

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.2 ** P

PLAY AREA PROVIDES SUFFICIENT SPACE

- Minimum 75 square feet per child of usable outdoor play space for 50% of the total population
- Separate play spaces for infants, toddlers, and preschool children

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.3 ** P, H

PLAY AREA HAS SEPARATE ZONES

- Areas for quiet activities and active play
- Areas for large group play and individual or small group play
- Distinct area for fixed play structures
- If center is located in housing complex or office building, active zone is away from building
- Good teacher sightlines

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.4 P, H

CLEAR PATHWAYS DIRECT CHILDREN THROUGH THE PLAY AREA AND AROUND ACTIVITY AREAS/EQUIPMENT

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.5 ** P

PLAY STRUCTURES AND EQUIPMENT PROVIDE DEVELOPMENTALLY APPROPRIATE CHALLENGE AND OPPORTUNITIES FOR PLAY

- Appropriate size and scale for age group
- Provide a variety of options for climbing, jumping, balancing, and sliding

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.7 ** P

A RANGE OF OTHER OUTDOOR PLAY OPPORTUNITIES ARE PROVIDED

- Sand and water play
- Garden area with access to sun and water
- Dramatic play area with props and enclosure (canopy, play house, tent)
- Large flat surface for running, circle, and ball games
- Art area with outdoor easels or chalk surfaces, tables, or other flat surfaces
- Block and building activities

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.8 P, H

IF THE PROGRAM SERVES INFANTS AND TODDLERS, AGE APPROPRIATE AREAS/ACTIVITIES ARE PROVIDED

- Safe and interesting places to crawl, pull up, and climb
- Self-contained and protected from other children

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.9 ** P

NATURAL FEATURES ARE INCLUDED WHENEVER POSSIBLE

- Gardening opportunities for children
- Tree, shrubs, child-safe plants
- Rocks or boulders
- Small hills or slopes
- Bird feeders or houses

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.11 *** P

PLAY AREA IS HANDICAPPED ACCESSIBLE

- Slope of paths and ramps meets accessibility guidelines
- Activity areas are barrier-free

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.12 ** P, H

GROUND SURFACES ARE VARIED, INCLUDING DIFFERENT TYPES OF GRASS, DIRT OR SAND, HARD SURFACE FOR RIDING TOYS, SUITABLE SAFTEY SURFACING UNDER ANY EQUIPMENT, ETC.

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

0	1	2	3	4	N/A	H	P	M
Does not exist in the center, but should	**Inadequate:** requires improvement or repair	**Fair:** should be improved	**Good:** good quality or in good condition	**Excellent:** first-rate or top quality	**Not applicable:** doesn't apply to the program	**Health & Safety**	**Program Quality**	**Maintenance, Repair, & Aesthetics**

4.13 ** H

PLAY AREA IS CLEAN

- Litter free
- No animal waste
- Garbage and recyclables kept in closed receptacle outside play area
- Sandboxes covered when not in use
- Wading pools and water tables emptied and cleaned after use
- Free of insect nests and signs of rodents

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.14 *** H, M

PLAY AREA IS SAFE

- Play structures in good repair and inspected regularly
- Easy to supervise – clear sightlines, no large obstructions
- Checked daily for hazards
- Has emergency telephone and first aid kit
- Play area has good drainage, does not collect water

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.17 ** H

PLAY AREA IS SECURE

- Fenced with appropriate height for the area (minimum four feet), with self-closing gates and a childproof mechanism
- Play area is for exclusive use of the center's children, teachers, and parents
- Center Entrance does not pass through play area

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.18 ** M, H

PLAYGROUND STRUCTURES ARE IN GOOD REPAIR

- No loose, broken, or missing parts
- Free of splinters and rust
- No open S-hooks on equipment
- No protruding bolts
- Free of cracks and holes
- Concrete footers on equipment are covered

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

4.19 *** H

PLAY STRUCTURES ARE SAFE

- No gaps in equipment where clothing could be caught (generally a gap between 3½ – 9 inches)
- No head entrapments or pinch hazards
- Climbing structure platforms have a maximum height of 24 inches for infants and toddlers and 48 inches for children under 5 years
- Climbing structure platforms have guardrails
- Climbing structures have more than one way on and off
- Steps, ramps and ladders end at a platform that holds more than one child
- Swings are separate from climbing structures and are at least 18-24 inches apart
- Only bucket style swings with straps are used for infants and toddlers
- Preschool slides are a maximum height of 6 feet
- Infant/toddler slides have a gradual slope
- Slides have non-metal surface

RATING: 0 1 2 3 4 5 6 7 8 9 10 N/A PR!

COMMENTS:

_____
_____
_____

Unobservable Items

1.3 *** M, H

BUILDING IS STRUCTURALLY SOUND AND ENVIRONMENTALLY SAFE

- No plumbing leaks
- Roof is in good condition with no leaks
- Building is lead-free
- Building is radon-free
- Building is asbestos-free
- Building is free of mold

COMMENTS:_____
_____
_____

1.5 H

OUTDOOR LIGHTING IS ADEQUATE AND WELCOMING

- Security lighting on building and playground
- Exterior lighting makes center more welcoming after dark

COMMENTS:_____
_____
_____

1.6 P

BUILDING IS HANDICAPPED ACCESSIBLE

COMMENTS:_____
_____
_____

1.7** H

ENTRANCE TO CENTER IS SAFE AND SECURE

- Pathways free of snow and ice

COMMENTS:_____
_____
_____

2.5 * P, H

SECURE AND ACCESSIBLE STORAGE SPACE FOR STAFF IS AVAILABLE IN OFFICES, CLASSROOMS, CLOSETS, OR OTHER STORAGE AREAS

- Locked storage for personal possessions
- Storage for files, paperwork, children's records
- Closed storage for classroom materials
- Sufficient storage for bulk supplies, seasonal items, etc.
- Appropriate storage for first aid supplies

COMMENTS:_____
_____
_____

2.7 ** P, H

APPROPRIATE SPACE IS DESIGNATED FOR A SICK CHILD TO REST WHILE WAITING FOR A PARENT

- Near lavatory
- Room for cot to rest
- Easily supervised
- Dedicated space specifically for sick children

COMMENTS:_____
_____
_____

2.9 ** P, H

TELEPHONE SYSTEM IS ADEQUATE

- Sufficient number of phone lines to handle needs of program
- Working telephone or intercom in each classroom
- Telephone system provides intercom between classrooms and office

COMMENTS:_____
_____
_____

2.10 *** H

HEATING AND AIR CONDITIONING IS EFFECTIVE, SAFE, AND RESPONSIVE

- Heating consistent and comfortable
- Cooling consistent and comfortable
- Cooling units do not block windows
- Systems can be manually controlled
- Temperature controlled within individual classrooms
- Radiant heating in flooring, especially in infant/toddler rooms

COMMENTS:_____
_____
_____

3.19 *** H

ELECTRIC SERVICE IS AMPLE

- Sufficient number of outlets to avoid use of extension cords
- Circuit breakers are not thrown because of overloads to system

COMMENTS:_____
_____
_____

4.14 *** H, M

PLAY AREA IS SAFE

- Play structures in good repair and inspected regularly
- Easy to supervise – clear sightlines, no large obstructions
- Checked daily for hazards
- Has emergency telephone and first aid kit
- Play area has good drainage, does not collect water

COMMENTS:_____
_____
_____

Points of Interest

This section aims to reduce the total survey time by ensuring that the points of interest are pre-located.

- Mechanical and electrical closets
- Custodial closets and facilities
- Classrooms
- Adult and child lavatories
- Meeting room
- Staff room
- Office space
- Kitchen or food prep area

Appendix B: Information and Permission Letter

WORCESTER CHILD CARE FACILITIES ASSESSMENT

An Evaluation of the Early Childhood Education Facilities in Worcester for the Quality of Their Physical Environments

Worcester Polytechnic Institute's Interactive Qualifying Project (IQP) serves the purpose of integrating students into the working world, while also benefitting the community. Final projects may be published.

This IQP is a quality assessment of the various pre-kindergarten child care facilities in Worcester. Working with Edward Street Child Services, we have chosen and edited a tool that evaluates the quality of learning environments. Based on our findings, we will develop a data analysis program and establish common problem areas in the facilities. Cost estimates will be determined for general upkeep and repair problems that can be used by facilities across the Commonwealth.

Your participation in this project will be completely anonymous. Every facility we survey will be labeled with a number that in no way compromises the integrity of the establishments. The members of our project group, along with Edward Street Child Services, are the only ones who will know the corresponding names to each number in the data analysis tool.

We are in no way associated with the state of Massachusetts. Our goal is not to point out flaws, disprove accreditation, or damage the reputation of child care facilities in any other manner. Rather, we seek to improve the overall quality of facilities in Worcester by presenting our findings to the state legislature in hopes of directing funding towards facilities maintenance and improvement.

If you have any questions or concerns, please feel free to contact us.

Thank you,

Peter Cacciatore
Stephen Franceschelli
Kyle Hess
Kurtis McCannell

PreschoolIQP@wpi.edu
508-868-0791 or 860-630-0072

Photography Permission Form

This document certifies that _____ (child care facility) gives the surveyors permission to photograph our facility. I understand that the photographs will be strictly of the physical environment and will not contain any children. I understand that these photographs will be used as examples but will be anonymous. I also understand that these photographs may be published, but will only be used in the Worcester Child Care Facilities Assessment Project.

Facility Representative _____ Date _____

Peter Cacciatore _____

Stephen Franceschelli _____

Kyle Hess _____

Kurtis McCannell _____

Appendix C: Average Ratings for Facilities

		Average Item Ratings				
Child Care Center	**Rank**	**Overall**	**Section 1**	**Section 2**	**Section 3**	**Section 4**
445	1	8.175	9.778	6.167	8.400	8.469
939	2	6.770	8.875	7.545	7.432	4.346
535	3	6.583	7.222	7.167	6.477	6.097
813	4	6.564	6.111	5.182	7.204	6.562
420	5	6.496	6.667	5.737	6.564	6.781
630	6	6.347	7.333	4.292	6.642	7.125
563	7	6.176	5.444	5.375	5.886	7.419
762	8	4.833	7.778	3.750	4.309	5.719
321	9	4.171	4.111	5.136	3.432	4.567
207	10	3.689	5.111	2.947	3.213	4.452
159	11	3.658	4.444	2.167	3.818	4.281
967	12	2.965	3.222	3.111	2.436	3.719
Overall Average:		6.077	6.897	5.359	6.031	6.360

Appendix D: Individual Facility Feedback

Dear _____

We would like to thank you for your participation in this project. Thanks to you and the other centers that welcomed us, we were able to get a comprehensive view of the state of child care facilities in the Worcester community. As promised, we have written individual feedback for your facility that will highlight the problem areas that we observed, as well as low-cost suggestions for immediate improvement. The feedback is divided by the four sections in the checklist that we used. Attached is the complete list of 56 items, including the rating that we gave your facility in each item. Also attached is a table showing data for all facilities involved in our survey for you to compare, although the other facilities remain anonymous.

All information contained within this report is anonymous and only our project group and Edward Street Child Services will know the identity of each facility. Thanks once again, and we hope that the information provided will be useful to you in improving and maintaining your facility in the future.

Kyle Hess

Kurtis McCannell

Stephen Franceschelli

Peter Cacciatore

preschooliqp@wpi.edu

Center A

Section 1: Building Exterior & Center Entry

Overall we felt that your facility had a good center entry. We did, however, notice that there was mold on the outside windows and would suggest having it removed. This would make the center more environmentally friendly, safer, and more appealing to visitors and prospective parents. We would also recommend having a seating area that makes the entrance feel more like a reception area to visitors. We feel like this would make the center entry more of a transition into the center and make it more welcoming.

Section 2: Program Support Space

As far as space in your facility went, we thought that there were some areas that needed improvement. The teacher work space would benefit from the addition of more desks. We also noticed that there was no locked storage for the teacher's personal belongings. A simple footlocker can be purchased for $30 or less (www.globalindustrial.com). This would give the teachers a secure place to keep their valuable possessions. We also felt that it would be beneficial to have an intercom system between the classrooms for the teachers to communicate with each other. A system like this costs approximately $100 (www.newegg.com).

Section 3: Children's Space

We felt that your facility did well as far as children's support space was concerned. In general, the quality of the space was adequate. There was ample space in classrooms and the arrangement of classroom structures supported programming.

Section 4: Outdoor Play Area

Your outdoor play area was good overall but lacking in some areas. We thought it would be beneficial for you to have a garden area for the children to play in. A small set of seeds to plant flowers can be found for very little. This would give the children another play opportunity and expose them to some natural elements. We also felt that building or block activities would provide another good play opportunity for children. A block set can be found for $40 (www.discountschoolsupply.com). Another thing that would be beneficial to the children is a bird feeder. This would give them a new area of nature to interact with and learn

about. A bird feeder can be purchased for $27 (www.bestnest.com). Finally, we noticed some protruding bolts on some of the play structures. These should be covered and would increase the safety of the play area and reduce the risk of the children being injured.

Center B

Section 1: Building Exterior & Center Entry

Besides the larger problems that you mentioned when we visited such as mold and needing new gutters, we found few problems with your center in this area. You mentioned that your pathways are not always free of snow and ice, which is an issue that obviously needs to be addressed. Pathway salt to melt ice is very cheap, and is available from almost any convenience store, supermarket, or home improvement store. Another minor problem that we experienced was that it was not easy to find the center on campus without directions, and maybe a sign or two directing people towards the center would be helpful for new parents and visitors.

Section 2: Program Support Space

Another thing that we would highly recommend is an upgrade to your telephone. Several different types of sets are available with an intercom feature, which would allow classrooms to communicate with each other and the office directly. This would be relatively cheap, with a set like this with 4 or 5 receivers ranging from $90 to $130 dollars (some websites where they would be available are ebay.com, officemax.com).

Section 3: Children's Space

One change that could be made relatively easily is reinstalling all of the bathroom fixtures such as soap and paper towels to ensure that they are child height. Changing the height of the sink is more difficult, but a solid set of steps up to it or platform can be used to make it appear child height. Another thing that we would recommend is rearranging the classrooms in order to provide a distinct entrance area in each classroom, so that visitors or parents can enter the room without disturbing the class. One more thing that we can recommend is that you provide an adult-height work surface for teachers within the classroom.

Section 4: Outdoor Play Area

Despite the one big problem that we know that you are already trying to address, the flooding in your playground area, we felt that your play area was very good. There is a great range of play opportunities for children, as well as a varied selection of surfaces. There is also ample room that allows separate zones, which is important. We assume that you are already

exploring options to fix the water accumulation problem, and so we feel that we cannot help much in the way of recommendations to find a solution.

Center C

Section 1: Building Exterior & Center Entry

Overall your center had a very neat and attractive exterior; we would just recommend that you make it clearer where the main entrance to the center is. We had a hard time finding it, as there was no obvious indication that it was the main entrance.

Section 2: Program Support Space

One major comment we had in this section was that your meeting space was not nearly big enough to comfortably accommodate staff during lunch or breaks, and it is insufficient for holding parent meetings. We would highly recommend trying to remedy this, by either rearranging your storage options to move things out of that room, or to possibly consider sharing space with the church to take advantage of its facilities to gain access to a meeting area. If this was done, it would be possible to turn the current break room into a work area for staff, since we noticed there were no opportunities for teachers to work on their curriculum outside the classroom, with access to a phone and computer. Another thing that we noted was that there was no locked storage for staff to store their belongings. We would recommend buying a set of lockers, or possibly a footlocker for each classroom. A tier of six half-lockers can be purchased for around $165 (www.globalindustrial.com). A simple footlocker for each classroom can be purchased for $30 or less (www.globalindustrial.com). Another thing that we would recommend is rearranging the classrooms in order to provide a distinct entrance area in each classroom, so that visitors or parents can enter the room without disturbing the class. This area can also serve as a transition area for children to remove outdoor clothing and keep the classroom cleaner.

Section 3: Children's Space

For the most part your classrooms were excellent. We only had a few comments, one of which was that you might consider adding dimmer switches. A dimmer switch is relatively cheap (as little as $10 from The Home Depot per switch) and can both save you energy and create a less harsh, more soothing environment. We also did not observe steps for the changing tables, which are important for toddlers.

Section 4: Outdoor Play Area

Your play area was very good in general, although it was missing a few elements. We recommend that in the older children's area you have an art area as well as an area for gardening activities. If it is not possible to include a garden in the play area, some effort should be made to include other natural elements such as grass and shrubs. Flower seeds can be found very inexpensively. This would expose the children to more elements of nature and provide new topics of interest.

Center D

Section 1: Building Exterior & Center Entry

Our main concern regarding the items in this section was the inadequacy of your security system. We did not feel that the center was properly secured and it lacked an efficient screening-system for visitors. The door that students and teachers used to access the playground was unlocked, allowing access to anyone. The doors should be locked at all times. A solution to this problem is utilizing keypad access or electronic swipe cards, which can be purchased for approximately $100. An alternative, or possibly additional, solution exists in a closed-circuit television system. Although this system may seem expensive, a single closed-circuit camera and a television to monitor the entrance can be purchased for under $100 (www.newegg.com). An intercom should also be present to allow communication between visitors and the main office. A two-way intercom system can be purchased in the range of $40-50 (www.newegg.com). Also, there was not sufficient signage to indicate the proper entrance to the facility. We recommend clearly labeling the main entrance.

Section 2: Program Support Space

We realize that limited space is always a concern, and some improvements simply cannot be made without a major renovation and addition of more physical space. Your meeting space was good but your facility lacked an appropriate number of lavatories.

One major aspect that we deemed necessary for your facility was a designation of space outside the classroom for teachers and staff to work. Even without an individual room, an adult-height work surface in the classroom is beneficial to staff. It is essential that you provide some form of locked storage for staff to prevent thefts in the future.

A tier of six half-lockers can be purchased for around $165 (www.globalindustrial.com). A simple footlocker for each classroom can be purchased for $30 or less (www.globalindustrial.com).

A telephone and/or an intercom system between each classroom is very important. For about $100 (www.newegg.com), a system can be purchased that includes up to five satellite receivers and one base receiver. Some sets have an intercom feature that would allow inter-room communication and the entire system requires only one phone line.

Section 3: Children's Space

Within each classroom, an entry space should be designated that allows teacher and parent access without disturbing the children. While the classrooms have limited space, we felt that your facility did a good job of arranging the room. One thing that should be improved immediately is the existence of uncovered outlets and electric cords within children's reach. Outlets should be covered, either with furniture or plastic outlet covers. It would be great if, in the future, you could add activity sinks to the classrooms. This helps keep classrooms clean and sanitary, and encourages activity.

Section 4: Outdoor Play Area

The play area provided a great amount of space for children to play, even though a majority of it is pavement. The play area was clean considering the illegal activities that take place there at night. The play area was generally safe. The only recommendation that we have is bringing out a telephone to maintain communication with staff still inside the building. The playground structures themselves were in good repair and were very safe.

Center E

Section 1: Building Exterior & Center Entry

Your facility did well in this section. We felt that the outdoor lighting of the facility was good and that the building was environmentally safe. One thing we noted was the presence of asbestos in some parts of the building. Despite the fact that these places might not often be occupied by children, we still recommend having it removed. We also saw that the exterior of the building had several pieces of trash. Having someone do a sweep of the outside of the facility once a day in the morning would easily eliminate this problem. Not only would it keep the environment clean, but it would also make the building more appealing.

Section 2: Program Support Space

Overall we felt that the support space in your facility was good. There was ample space for offices and meetings and their quality was very good. We also felt there was adequate space for the teachers to work outside of the classroom. One thing we would recommend is having locked storage for teacher's belongings. A small lock box can be found for around $20 (www.target.com). Another thing we noticed was the absence of locks on the mechanical/electrical closet and the custodial facilities. Door locks can be purchased for as low as $55 (www.homedepot.com) and are fairly simple to install. This will prevent children from entering either room.

Section 3: Children's Space

We felt that the children's classrooms were overall in good repair and well sized. We noticed that not all of the outlets were covered. Outlet plugs can be purchased for around $3 (www.kidsafeinc.com) and would prevent the children from trying to put their hands in the electrical sockets. We saw that cubbies were often shared between children, and thus not all children have their own personal cubby. Plastic boxes to store children's belongings can be found for around $5 (www.stacksandstacks.com) and would ensure that each child has their own personal space for their belongings.

Section 4: Outdoor Play Area

We felt that, overall, the play area was large but could use some improvements. One thing we noticed was a lack of a garden area. Plants and flowers can be purchased for around $6 (www.americanmeadows.com) and easily planted. This would allow the children to interact with nature more when they are outside. We also noticed that there were no blocks or building activities for the children to take part in. A block set can be found for around $40 (www.discountschoolsupply.com). On some of the play equipment we noted that there were protruding bolts and we suggest you cover these so that the children don't catch themselves and get hurt.

Center F

Section 1: Building Exterior & Center Entry

We felt that the exterior and entry to your center were excellent. They were very well maintained and welcoming. The security of the facility was very good as well. We have few suggestions for improving your center entry mainly due to the fact that it is not a direct part of the preschool facility, and therefore not under your control.

Section 2: Program Support Space

The support space that your facilities offered was also exceptional. There was an ample amount of office space and the quality was very good. The meeting space was also of ample size and in good repair. Again, your school is different in that much of its support space is shared with the larger facility, and therefore we have no suggestions for improving it.

Section 3: Children's Space

Regarding children's spaces, your facility also did well. We did, however, have a few recommendations. Some of the pillars and posts weren't covered with soft material. This can be fixed by wrapping the posts in either carpeting, or some kind of padding. A strip of carpeting would be a cheap option, possibly even free if a big enough a piece of scrap carpet could be located. Some of the windows that were child height didn't have a protective barrier. Although the glass appeared to be tempered and therefore fairly secure, we would still recommend putting some type of railing in front of the windows. This would also prevent children from standing on the heating unit in front of the window, which we noted as a potential hazard. This would greatly improve the security of the windows and prevent potential injuries to the children. We also noticed a lack of soft furnishings. Things like bean bags can be bought for $80 (www.beanbags.com). We saw that there were no coverings on the external windows. Regular venetian blinds can cost as little as $20 at The Home Depot for the larger sizes, and would help control the level of light allowed in the classroom. This would help dim the classroom during nap time and make the children more comfortable.

Section 4: Outdoor Play Area

Your center has no designated play area, although your use of the basketball court is making the best of an unfortunate situation. The one thing that we can recommend is bringing blocks and other play items outside during play times. Installing a playground would greatly improve the overall quality of your center, as the type of play offered by playground climbing structures can be essential to good cognitive development.

Center G

Section 1: Building Exterior & Center Entry

One of our major concerns was the presence of asbestos insulation in your basement. We understand that some asbestos can be safe if properly sealed from human contact, but the fact that it is present in a space used for storage means that in time it could present a hazard. We highly recommend that you create a plan for raising the money to remove this in the near future, even if it is currently considered safe.

Section 2: Program Support Space

A lack of program support space was also of concern to our group when surveying your school. Although you do have an office for the director, it is cramped and is combined with the reception area. We understand that space is at a premium in this type of setting, but we believe it would be beneficial to your center to set aside an area that could serve as a staff lounge, meeting place for parents, and also staff work area for activates such as developing the curriculum that might require a desk and a computer. In addition, the way that the kitchen has been converted into a classroom is far from ideal, and as we understand you do not prepare lunches for children, we would recommend that the kitchen aspects of that room such as the oven and the counters be removed to make more space for the children. To do this would probably only require the hiring of a few laborers through a contractor, although this is something that you could also do yourself given the correct tools.

Section 3: Children's Space

Although your classrooms are badly lacking in space, there are some things you can do to improve their quality. One thing that we noticed was that the aesthetics of your classrooms could be more soothing. A muted and consistent color palate can go a long way to creating a comforting feel, as well as having more soft elements such as pillows or bean bags, especially in the kitchen-classroom, which felt more crowded than the others. One way to gain space in a crowded situation is to try to free up floor space by storing things outside the classroom. As this may not be an option, we recommend purchasing some wall-mounted cabinets and shelves to try to eliminate some furniture, in the hopes of gaining some amount of classroom space. A single

kitchen cabinet will run around $50 from a place such as IKEA (available at www. ikea.com), and shelves are a cheaper option, available also at IKEA for as little at $10 a shelf.

Section 4: Outdoor Play Area

Your play area definitely felt crowded, and we believe the cause of that is a combination of having too many children outside at the same time, and an excess of equipment. We recommend staggering your recess times so as to avoid overcrowding children at the time when they should be running around and getting exercise. One specific item that we observed outside that we thought to be a priority was the fact that as the base of the stairs there was an exposed concrete footer, and while we were there, we actually witnessed a child fall off of it. Although the child was not hurt, the potential for injury is great if a child were to fall onto the corner of the concrete, and we recommend covering the footer, either with a simple wooden ramp, or even just with a gradual slope of soil. Another thing that we would recommend to improve the safety of the outdoor play area is to have a phone available outside without having to bring one out from the classroom, and also have a first aid kit readily available outside at all times. We observed a broken play structure shoved into a gap in the swing set while we were there, which not only detracts from the aesthetics and comfort of the playground, but could potentially hurt a child if the broken plastic had sharp points.

Center H

Section 1: Building Exterior & Center Entry

The exterior to your child care facility was very clean and well-maintained. It appeared professional, yet welcoming at the same time. The building was structurally safe, although there were plumbing leaks. This should be taken care of immediately because it creates perfect conditions for mold to grow. Mold can trigger allergies in children and generally degrades the integrity a building. One of the major problems we observed was the fact that any inhabitants of the apartments located above your facility could enter the center unobstructed. This creates a critical safety hazard. We recommend installing at least a deadbolt lock on the door, although a keypad would be ideal. Keypad locks can be purchased for as low as $100. Also, your facility does not have a proper reception area. The doors from the stairwell open directly into the classrooms and there is no area for transition.

Section 2: Program Support Space

Generally, there was a lack of sufficient office space in your center. While the director has an office, it is not large enough to provide confidential space for conversations between staff and families. Also, there was no meeting space. There was a table with chairs in the kitchen area, but this is not an adequate space designated for staff and parent meetings.

We felt that not having locked storage for staff was an issue. We observed a stack of lockers in the kitchen that appeared to be partially used for storage, while some of the lockers were empty. If it is possible, the items contained should be stored elsewhere to allow staff access to locked storage. If this is not possible, a tier of six half-lockers can be purchased for around $165 (www.globalindustrial.com). A simple footlocker for each classroom can be purchased for $30 or less (www.globalindustrial.com).

We also observed that there was a drier in one of the classrooms. If possible, you should consider moving the machine to the electrical/janitorial closet. At the very least, it should never be run while children are in the classroom, which you mentioned is usually the case. It is unsafe and incredibly distracting for young children.

Section 3: Children's Space

The classrooms had ample space and were arranged very functionally. They were aesthetically pleasing and contained many elements that interest young children. More soft elements, such as pillows and padded seats, could be added.

However, we felt that the classrooms did not support teachers very well. There were no adult-height work surfaces and there is not a telephone or intercom system. For about $100, a system can be purchased that includes up to five satellite receivers and one base receiver (from www.newegg.com). Some sets have an intercom feature that would allow communication between classrooms and the entire system requires only one phone line.

Because your facility is partially below ground, children do not have direct access to windows. We recommend installing lofts or raised platforms that give children the ability to view the outdoors.

We also observed that the lighting in classrooms was not very adjustable. There were no alternative light sources or dimmer switches. A simple solution is to purchase several lamps that can create a medium-level of light for napping and reading areas. Small lamps can be purchased for as low as $15 from a vendor such as IKEA (available at www.ikea.com).

Section 4: Outdoor Play Area

Your play area had ample space and was relatively well-located, although it is unfortunate that the walkway to the play area is shared with apartment inhabitants. One thing the play area lacked was the presence of various zones. There was not an adequate space designated for quiet play. Sand and water tables can be purchased for as low as $50 (available at www.target.com) that would create more distinct zones.

The play area lacked natural features, such as trees, shrubs, and bird feeders. By allocating a small area, a garden can be planted with a children's gardening kit for approximately $20 (from http://monticellostore.stores.yahoo.net/). Because it is a kit, the children can even be involved in the planting process.

The play structures were generally in good repair, although there were some areas where children could get splinters. There were also potential gaps where clothing could be caught, and so we recommend teachers keeping a close eye on children while on the play structures.

Center I

Section 1: Building Exterior & Center Entry

Upon first arriving at your facility, we immediately noticed the poor condition of the building exterior. There was graffiti on one of the walls, as well as a large dark spot that appeared to be either the wrong color paint or possibly mold. The exterior windows were dirty and some of the window trim was not intact. It is important that children are not uncomfortable in their center, so we recommend a simple cleanup. Washing the windows and cleaning the graffiti would go a long way towards making your center appear nicer from the outside. In addition, the only exterior lighting that we could find came in the form of a streetlight. We recommend purchasing an exterior light for the front of the center, which costs as low as $60 (available at http://www.plumbersurplus.com/).

One of the major issues we had with your center was the lack of a security system. Anyone has the ability to walk directly into the center without any semblance of a screening process. This creates a critical safety hazard. We recommend installing at least a deadbolt lock on the door, although a keypad would be ideal. Keypad locks can be purchased for as low as $100 (available at www.newegg.com). Also, your facility does not have a proper reception area. The facility's front door opens directly into a classroom space that is only separated by a small gate. Although not much can be done to remedy this problem, we suggest a further distinction between the front door and the classroom space. This could be achieved by taller shelves or book cases providing the barrier, rather than the gate.

Section 2: Program Support Space

Generally, there was a lack of sufficient office space in your center. While the director has an office, it is not large enough to provide confidential space for conversations between staff and families. Also, meeting space was extremely cluttered and did not provide space for more than a few people. This area could be cleaned rather easily.

There were not enough bathrooms to meet center needs. One bathroom, which appeared to be newly constructed, actually did not have a sink installed. This is an extreme health hazard and should be addressed as soon as possible. A bathroom sink can be purchased for as low as $75 (at http://www.plumbersurplus.com/) in addition to the labor costs of hiring a licensed

plumber to install the sink. Getting an estimate first will be necessary, due to the fact that it is unclear what the state of the plumbing in the room is.

We felt that not having locked storage for staff was an issue. A tier of six half-lockers can be purchased for around $165 (www.globalindustrial.com). A simple footlocker for each classroom can be purchased for $30 or less (www.globalindustrial.com).

We also felt that the classrooms did not support teachers very well. There were no adult-height work surfaces and there is not a telephone or intercom system. For about $100, a system can be purchased that includes up to five satellite receivers and one base receiver (from www.newegg.com). Some sets have an intercom feature that would allow communication between classrooms and the entire system requires only one phone line.

Section 3: Children's Space

One of our biggest concerns relating to classroom space stemmed from the lack of distinctions between several of the classrooms. Two classrooms were separated only by a bookshelf. This amount of noise is a detriment to children's learning. A wall should be constructed to provide each classroom its own acoustical separation.

The classrooms were very crowded and cluttered. While there is not much space available in your facility, we felt that the poor layout of classroom structures hindered the rooms' potentials. Shelves and bookcases should be arranged so that there are clear pathways through each room. While this is true for all child care facilities, it is especially true in your case because of the linear layout of classrooms that forces children and staff to walk through other classrooms to arrive at their own.

In one of the classrooms, we observed a power strip that was suspended in the air, and it was being suspended by the tension of a cord that was plugged into it. This is probably the most unsafe combination of electrical wires possible. Not only is it possible for children to reach these wires, but there is an object suspended in the air that could easily fall and harm a child. If your facility needs more outlets, we recommend purchasing extension cords, which often cost less than $5 (available at http://electrical.hardwarestore.com/). If extension cords are used, they need to be secured to the floor or wall and absolutely should be out of children's reach.

We also observed that the lighting in classrooms was not adjustable. There were no alternative light sources or dimmer switches. A simple solution is to purchase several lamps that

can create a medium-level of light for napping and reading areas. Small lamps can be purchased for as low as $15 from a vendor such as IKEA (available at www.ikea.com).

Section 4: Outdoor Play Area

Your play area had ample space and was relatively well-located. However, the equipment in the play area was not adequate for your center's children. The play structures were for toddlers, although your center accommodates preschool children. Without appropriately sized structures, many children did not have proper opportunities for play.

One main issue with the play area is that, like the facility itself, anyone can enter unimpeded. We recommend locking the adjacent gate and only allowing play area access from within the facility. If you follow our suggestions for a more secure center entry, this will systematically increase the security of the play area.

Center J

Section 1: Building Exterior & Center Entry

We had very few comments about your center entry, which is overall excellent. The only thing that might be improved is that because your center is located within a larger building, better signage would be helpful to direct visitors to the center from outside, as we would not have found it on our own without some assistance.

Section 2: Program Support Space

Although the offices that your center has are nice, we noticed that you seem to have a large staff but only a small amount of office space, and one medium-sized break room. We understand that adding an addition or something else to add office space is not possible, but it would be a good idea to set aside an area with multiple desks where teachers might be able to work on their curriculum, use the internet, and do other work related activities outside of the classroom.

Section 3: Children's Space

One thing you might consider within the classroom is arranging furniture such that the entry to the classroom has a distinct area for parents or visitors to enter but be separate from classroom activities. One specific safety hazard that we noticed was that in a classroom you had a real metal-headed hammer as a toy for children to use. Although we understand that children are likely supervised while using it, it is still possible that they might injure themselves or others, especially because the hammer was hanging within reach of a child. We also noticed that there were some cords that were accessible to children, and efforts should be made to keep all cords out of reach. Another thing to consider is that while your central area serves well as an indoor gross motor space, we noticed that there were very few pieces of equipment in it suitable for climbing, crawling, and balancing. We think that your center would benefit greatly from developing the main room into an indoor gross motor space as much as possible, although we understand if it is used for other purposes this may not be feasible.

Section 4: Outdoor Play Area

In general, your play area is excellent. One thing that you might consider is the slope that ends in a retaining wall, which is a potential hazard to any child who may try to play on or roll down the hill. We would recommend that a railing or small fence be added at the top of the retaining wall to prevent any accidental falls. Other than that one thing your play area was very good.

Center K

Section 1: Building Exterior & Center Entry

Overall, your center did well in this section. We were initially concerned that the door was unlocked when we first arrived, but it seems as though that is usually not the case and that you have a well-functioning security system in place. The intercom is great for screening visitors and is probably all you need. If you're interested in improving security, you might find it interesting that a single closed-circuit camera and a television to monitor the entrance can be purchased for under $100 (available at www.newegg.com).

We couldn't help but feel that the building's exterior was unwelcoming. The hard, grey surfaces, the barbed wire, and the lack of any natural elements are a detriment to the facility's appearance. Some color or potted plants (weather permitting) outside could greatly improve the image of the center for the parents, children, and teachers who go there every day. However, it was quite different once we got inside. It is good that you had even a small room for reception to serve as a transition into the classrooms, and we liked how you utilized notice boards.

Section 2: Program Support Space

We realize that your space is very limited, that children's needs come first, and that some improvements simply cannot be made without a major renovation and addition of more physical space. Space and features that are designated for and accommodate teachers are very important, though, for the morale and retention of teachers, which has a great impact on children's learning. Lack of storage space is an issue, but the storage room that connects to the reception area has potential to become or to double as a staff room that could be used for breaks, lunch, conferences and meetings, or as a teacher work space. An intercom system between the classrooms is essential for communication, and you can purchase a few cordless phone units with an intercom system for approximately $100 (as from www.newegg.com).

Section 3: Children's Space

The half-doors that are used in your facility allow distracting noise to travel between classrooms. They are helpful for communication, visibility, and security between classrooms, but with an intercom and windows, that would not be a problem. More soft features in the rooms, such as fabric and cushions, would help soften the noise a bit.

In the children's lavatories, it is necessary for the children to have easy access to the fixtures, soap, and paper dispensers, because it promotes independence.

In individual classrooms, each child should have his or her own cubby or storage space, while the teachers should have more closed storage space for classroom materials.

While the light fixtures could be turned on and off individually, the natural light in the classrooms is limited, especially in the middle classroom, which has no exterior windows, where fluorescent lighting is all that is used. The use of incandescent lamps in different play areas or during nap time as an alternative would be beneficial.

More small floor-level and texture changes in toddler classrooms, even such as that with mats, would promote exploration.

Section 4: Outdoor Play Area

On the playground, the addition of block building, art, and sand and water play areas would provide the children with a greater range of play opportunities and promote exploration. Besides the one small tree, the area seems devoid of all natural features, and it would be great if you could include more wherever possible in the playground, such as a small garden or boulder.

We were somewhat worried about the safety of the height of the climbing structure for the toddlers that might be using it and also about the swings' proximity to the fence.

Center L

Section 1: Building Exterior & Center Entry

We noticed that your facility's exterior, including the building's walls and windows, the stairs and sidewalk, and the plants, would benefit from maintenance. To clean any grime or mildew off the walls, you can purchase a decent pressure washer for only about $150, and rented for much less (www.lowes.com). We feel that improvements made to the outside of your building will make the center much more welcoming. This will increase the chance of potential new families showing interest in your facilities.

Section 2: Program Support Space

We realize that your space is very limited, that children's needs come first, and that some improvements simply cannot be made without a major renovation and addition of more physical space. Space and features that are designated for and accommodate teachers are very important, though, for the morale and retention of teachers, which has a great impact on children's learning. Any amount of space that is dedicated to teachers, with appropriate materials, tools, and supplies, where they can take work and plan their curriculums is important. Even if setting aside space is not possible, there should be adult-height work surfaces in the classrooms.

Your office space seemed to be sufficient to meet your needs, but the use of it for extra bulk storage caused clutter. A thorough cleaning and reorganization would improve the situation. Also, the office cannot provide a comfortable and confidential place for staff and parents to meet. There is a meeting room in another part of the building that is sometimes used, but that might be more helpful if it were accessible to the regular staff.

The temperature can sometimes get uncomfortably warm, since your school is part of larger building and since you don't have air conditioning. While not ideal, if the fans are not sufficient, window air conditioning units can be purchased for less than $100 each (as seen at www.nextag.com). Unfortunately, since the heat is centrally controlled for the entire building, it might not be reasonable to have access to the thermostat.

An intercom system between the classrooms is essential for communication, and you can buy phone units with an intercom system for around $30 each (www.newegg.com).

We noticed that, while your custodial closet had a fully functional lock that was above the reach of children, it was not used. The closet should be locked at all times for safety, to prevent the chance of a child gaining access to the harmful chemicals.

Section 3: Children's Space

We liked that there were benches for children to use when removing outdoor clothing. However, the entryways to your classrooms could be improved providing a parent notice-board and sign in.

In the classrooms, we noticed some electrical outlets that were not covered. Plastic covers can be purchased for around $3 (at www.kidsafeinc.com). Any posts should be wrapped with soft covering. Soft fabrics, cushions, rugs, and furnishings also help absorb excessive noise and reduce the distraction that it can cause.

The gym that you have to use as an indoor gross motor space is acceptable, despite the lack of heating and the fact that the sound travels down to the classrooms. The only suggestion that we have for you is that you acquire more quality equipment for climbing, jumping, crawling, and balancing to provide the children with more of a variety of play when they are stuck inside.

You have one diaper-changing area in the hallway, and ideally, a diaper-changing area will be located in the classroom so that the teacher can continue to supervise, will be ventilated and have airtight diaper storage for hygiene, and will include a sink with wrist-controlled faucets for the sole use of changing diapers. You don't serve infants or toddlers, however, so we're not sure that the changing area gets much use, and it might not be necessary to relocate it for your needs.

The natural light in your classrooms is limited due to the partially underground location of your classrooms, and the use of incandescent lamps in different play areas or during nap time as an alternative to exclusive use of fluorescent would be beneficial.

Section 4: Outdoor Play Area

On the playground, we noticed a lack of building activities for the children. A set of block toys can be found for approximately $40 (www.discountschoolsupply.com). This would give the children a wider range of things to do on the playground.

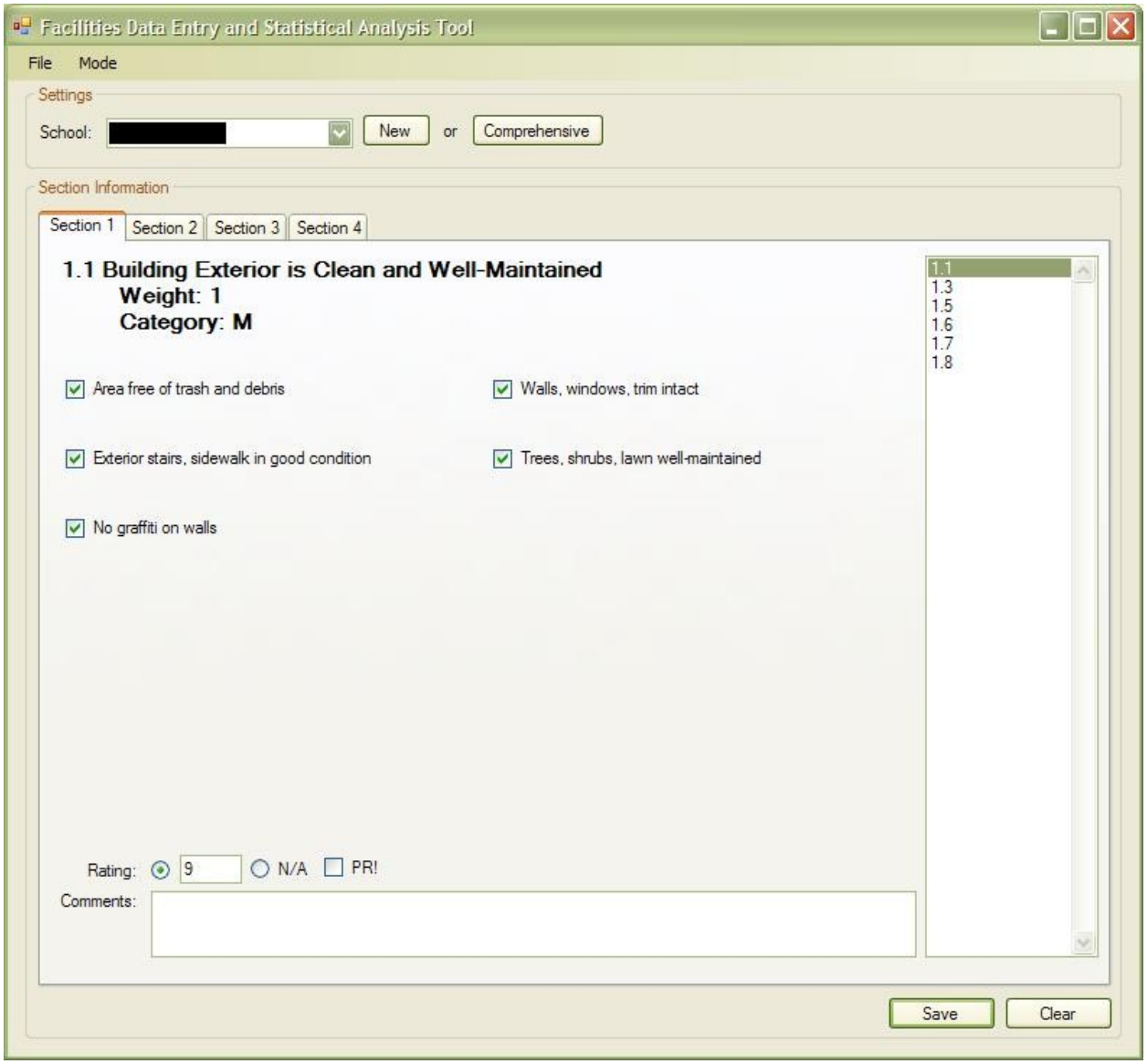
We were slightly concerned about the security of your playground in that a large toy was used to block a gap between the fence (actually, a small structure off the fence) and the building.

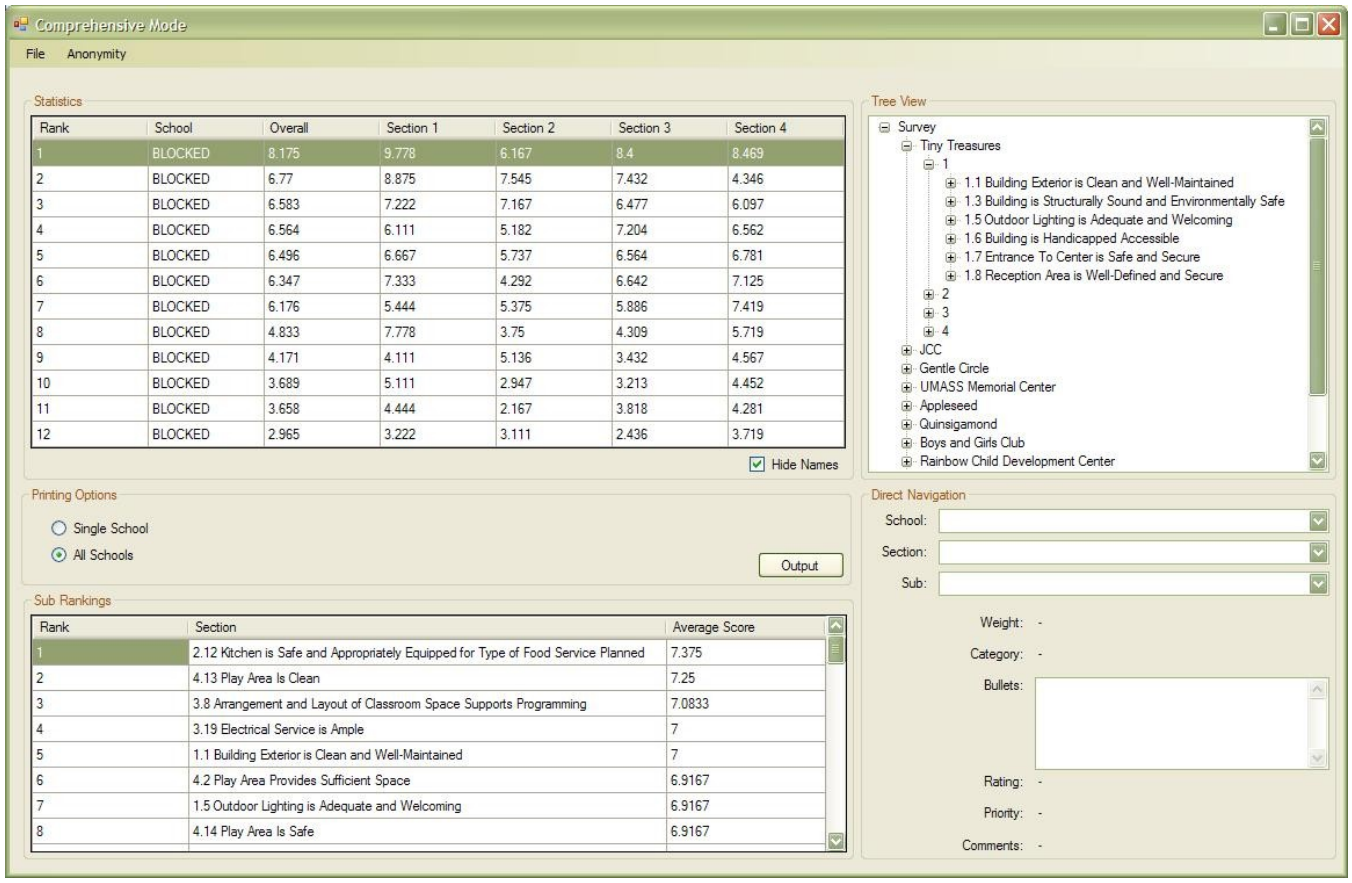
A more secure and permanent solution, such as an extended section of fencing, or even a permanently fixed piece of plywood, would be better. This would greatly increase the security of the playground.

The sand area at the high end of the playground should be covered when not in use to help keep it clean. A simple tarpaulin is useful for this, and a large one can be purchased for about $30 (as seen at www.nextag.com).

Appendix E: Facilities Data Entry and Statistical Analysis Tool

Below are two screenshots of the data analysis program. The first is an example of the data entry aspect, showing a specific item for a facility, in the main window of the program. The second is the Comprehensive Analysis window, with tables of calculated data and tools for easy viewing of specific items.




Comprehensive Mode
File
Anonymity
Statistics
Rank | School | Overall | Section 1 | Section 2 | Section 3 | Section 4
1 | BLOCKED | 8.175 | 9.778 | 6.167 | 8.4 | 8.469
2 | BLOCKED | 6.77 | 8.875 | 7.545 | 7.432 | 4.346
3 | BLOCKED | 6.583 | 7.222 | 7.167 | 6.477 | 6.097
4 | BLOCKED | 6.564 | 6.111 | 5.182 | 7.204 | 6.562
5 | BLOCKED | 6.496 | 6.667 | 5.737 | 6.564 | 6.781
6 | BLOCKED | 6.347 | 7.333 | 4.292 | 6.642 | 7.125
7 | BLOCKED | 6.176 | 5.444 | 5.375 | 5.886 | 7.419
8 | BLOCKED | 4.833 | 7.778 | 3.75 | 4.309 | 5.719
9 | BLOCKED | 4.171 | 4.111 | 5.136 | 3.432 | 4.567
10 | BLOCKED | 3.689 | 5.111 | 2.947 | 3.213 | 4.452
11 | BLOCKED | 3.658 | 4.444 | 2.167 | 3.818 | 4.281
12 | BLOCKED | 2.965 | 3.222 | 3.111 | 2.436 | 3.719
Hide Names
Tree View
Survey
Tiny Treasures
1
1.1 Building Exterior is Clean and Well-Maintained
1.3 Building is Structurally Sound and Environmentally Safe
1.5 Outdoor Lighting is Adequate and Welcoming
1.6 Building is Handicapped Accessible
1.7 Entrance To Center is Safe and Secure
1.8 Reception Area is Well-Defined and Secure
2
3
4
JCC
Gentle Circle
UMASS Memorial Center
Appleseed
Quinsigamond
Boys and Girls Club
Rainbow Child Development Center
Printing Options
Single School
All Schools
Output
Direct Navigation
School:
Section:
Sub:
Weight: -
Category: -
Bullets:
Rating: -
Priority: -
Comments: -
Sub Rankings
Rank | Section | Average Score
1 | 2.12 Kitchen is Safe and Appropriately Equipped for Type of Food Service Planned | 7.375
2 | 4.13 Play Area Is Clean | 7.25
3 | 3.8 Arrangement and Layout of Classroom Space Supports Programming | 7.0833
4 | 3.19 Electrical Service is Ample | 7
5 | 1.1 Building Exterior is Clean and Well-Maintained | 7
6 | 4.2 Play Area Provides Sufficient Space | 6.9167
7 | 1.5 Outdoor Lighting is Adequate and Welcoming | 6.9167
8 | 4.14 Play Area Is Safe | 6.9167