



IESD Comprehensive Technical Report

Evaluation of the Social Skills of Full-Time, Online

Public School Students

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Abstract

Concern has been expressed that students enrolled in online public schools may suffer from a lack of opportunities for socialization, and consequently may fail to develop important social skills. In order to address this issue, an evaluation research study focusing on the social skills of students in grades 2, 4, and 6 attending full-time, online public schools was conducted February through August 2008 by Interactive Educational Systems Design (IESD), Inc., in collaboration with staff from The Center for Research in Educational Policy (CREP) at the University of Memphis (TN). The primary purpose of this research was to compare parent, teacher, and student self-assessments of the socialization skills of typical, mainstream students who have been attending full-time, online public schools to national norms for the same assessments.

The study followed a posttest-only, treatment-comparison design. The treatment group consisted of students in grades 2, 4, and 6 from four full-time, online public schools in Arizona, California, Idaho, and Ohio. The comparison group was the norming sample population for the *Social Skills Rating System (SSRS)*, published by Pearson Assessments (Gresham & Elliot, 1990). Information was also collected from parents (via survey) about reasons for choosing a full-time, online public school; students' involvement in activities outside of school; and parents' perspectives on the impact of online public schooling.

The study was approved by the governing boards of the four participating online public schools and was sponsored by K12 Inc., a supplier of curriculum and technology resources to these schools. However, the findings and conclusions were the result of IESD and CREP's independent analysis of the collected data.

With respect to social skills, *SSRS* parent ratings of their children were significantly higher than national norms across the elementary grades and in every grade/gender category, both on the Total Scale and on most subscales (Responsibility subscale; Self-Control subscale; Assertion subscale, except for 6th grade males; and Cooperation subscale, except for 6th grade females). Similarly, student self-ratings on social skills were significantly higher than national norms across the elementary grades and in every grade/gender category, both on the Total Scale and on most subscales (Responsibility subscale; Cooperation subscale; and Assertion subscale, except for 6th grade males); however, student self-ratings were significantly lower on the Self-Control subscale across every grade/gender category. In contrast, teacher ratings of students across the elementary grades enrolled in full-time, online public schools were significantly higher than national norms on the Self-Control subscale; however, they did not differ significantly from national norms on the Social Skills Total Scale or the other subscales (Responsibility subscale, Assertion subscale, and Cooperation subscale).

With respect to problem behaviors, *SSRS* parent ratings of students enrolled in full-time, online public schools were significantly lower than national norms across the elementary grades and in every grade/gender category except 6th grade males, both on the Total Scale and on most subscales (Externalizing subscale; Internalizing subscale; and Hyperactivity subscale, except for 4th grade males). For 6th grade males, the Problem Behaviors subscales and Total Scale were not significantly different. Teacher ratings of students across the elementary grades enrolled in full-time, online public schools were significantly lower than national norms on the Problem Behaviors Total Scale and each subscale (Externalizing subscale, Internalizing subscale, and Hyperactivity subscale). (*SSRS* student self-ratings do not address problem behaviors.)

Comparing students who had been enrolled in full-time, online public schools for a year or less with those who had been enrolled for more than one year, there were no significant differences in parent ratings of either social skills or problem behaviors, with the single exception of the Self-Control social skills subscale, which was significantly higher for students who had been enrolled longer. This suggested that there was no cumulative long-term decrease in social skills based on enrollment in full-time, online public schools.

In addition to these main findings, the study found that the reasons parents most often identified for choosing full-time, online public schools for their children were all parent concerns (as opposed to concerns about their children or the school): a majority sought a home-based environment, but with the active support and structure of the public school system; a learning environment consistent with their family values; and more involvement in their children's education.

The data also indicated that students enrolled in full-time, online public schools were highly engaged in activities outside of the school day. Both activities involving peer interaction and those not involving peer interaction were significantly correlated both to the Total Social Skills Scale and to all but one of the Social Skills subscales for students enrolled in full-time, online public schools. The single exception was the Self-Control subscale, which was significantly correlated to activities involving peer interaction, but was not significantly correlated to activities not involving peer interaction. In general, as the frequency of outside activities increased, the Social Skills ratings increased.

Finally, parents noted their children's improvement in a variety of areas, including skill in using technology, balanced development of skills across many areas of learning, and academic progress in subject areas.

Introduction

This is the final report of an evaluation research study focusing on the social skills of students in grades 2, 4, and 6 attending full-time, online public schools supported by the K¹² curriculum and technology resources. The research was conducted February through August 2008 by Interactive Educational Systems Design (IESD), Inc., in collaboration with staff under subcontract from The Center for Research in Educational Policy (CREP) at the University of Memphis (TN). This study was sponsored by K12 Inc.; however, the findings and conclusions presented herein represent IESD and CREP's independent analysis of the collected data.

Online Public Schools: A Description

Online schooling—also referred to as virtual schools, cyber schools, e-learning, and distance learning—is a growing phenomenon in U.S. public school systems.

Barker, Wendel and Richmond (1999) defined a "virtual" public school as "one that offers the mandated provincial instructional program [the equivalent of state curriculum standards in the U.S.] to students through web-based means (i.e., computer-mediated and online via the Internet)" and one that is "characterized by a structured learning environment under the direct supervision of a teacher, web-based delivery to home or in a setting other than that of the teacher, and contains instruction that may be synchronous or asynchronous" (p. 2).

Common characteristics of such programs include instruction delivered via a learning management system (LMS); courses divided into lessons and units; online course content that includes a combination of text, multimedia, and interactive tools; off-computer materials "including textbooks and hands-on materials, to complement the content delivered via the Internet"; a combination of real-time and asynchronous communication between students and teachers (and in some cases among students); and online assessments (Watson, 2007, p. 10).

Online learning programs are being used to provide educational opportunities to a variety of students with unique circumstances, including "at-risk students, . . . dropouts, migrant youth, pregnant or incarcerated students, and students who are homebound due to illness or injury" (Watson, 2007, p. 5). Full-time, online public schools are required to "address accountability measures in the same way as all other public schools" (Watson, 2007, p. 5).

Significant online learning programs have been identified in 44 states, and full-time, online public schools have been identified in 21 states (mostly online charter schools) (Watson, Gemin, & Ryan, 2008). In 2007, the Peak Group estimated 1 million online enrollments—up from 500,000 in 2005 (cited in NACOL, 2008). More specifically, it was estimated that as of January 2007, more than 90,000 students were enrolled in virtual charter schools—up from approximately 31,000 students in 2004-2005 (NACOL, 2008, citing statistics from the Center for Education Reform).

Purpose of This Research

The primary purpose of this research project is to compare parent, teacher, and student self-assessments of the socialization skills of students who have been attending full-time, online public schools to national norms for the same assessments.

A secondary purpose is to collect important information about the reasons students attend online public schools, student activities outside of school, and parents' perceptions of the impact of online public schooling.

Literature Review

A growing number of states and school districts within the United States are offering online public schooling, also known as virtual or e-learning programs, intended to provide students with high quality supplemental or full courses of instruction personalized to their needs (U.S. Department of Education, 2006a). The potential merits of online public schools were acknowledged when "Support e-learning and virtual schools" was named as one of seven "action steps" in the U.S. Department of Education's "National Education Technology Plan" (U.S. Department of Education, 2006b).

Online public schooling programs represent a fundamental change in the ways that students interact with teachers, administrators, and other students, raising important questions about the impact on children's intellectual and social development. Specifically, some concern has been expressed that students enrolled full-time in online public schools may suffer from a lack of opportunities for socialization, and consequently may fail to develop important social skills.

Socialization and Conventional Schools

Socialization is commonly defined as "the process whereby people acquire the rules of behavior and systems of beliefs and attitudes that equip a person to function effectively as a member of a particular society" (Medlin, 2000). Socialization skills play a critical role in children's ability to develop successful relationships, and are importantly related to early academic success (Gresham & Elliot, 1990; Griffin, 1997).

For most elementary school children, conventional schooling is the predominant area for socialization and is where many social skills are modeled and learned (Tasmajian, 2002). Tasmajian (2002) examined the acquisition of social skills in elementary children, and reported that "school is the first agency that encourages children to develop loyalties and sentiments that go beyond the family and link them to a wider social order." However, online schools by their very nature do not provide students with regular, formal face-to-face classroom contact with other children and teachers. Thus, the growing popularity of online schools and e-learning programs represents the latest challenge to the common understanding of "a place called school" (Roblyer, 2006).

Many researchers have examined the role of the school as an agency of socialization (Merrell, 2001; Tasmajian, 2002). Research has indicated that socialization occurs through both the formal social structure (teachers and related school personnel) and the informal social structure (peers) of schools (Hartup, Higgins, & Ruble, 1983). However, it has not proven possible for researchers to separate social skills that are developed within the school

from those that are learned and developed outside of school through involvement in sports, music, or other activities (Tasmajian, 2002).

Socialization and Online Schools

Currently, there is a lack of research addressing the effects of online schooling on socialization and the development of social skills, probably due to the fact that online learning is a relatively new phenomenon. Online schooling went unnoticed by educators and school districts until the mid 1990s, and many people are still unaware that online schooling “is one of the fastest-growing areas in K-12 education” (Roblyer, 2006).

Pioneering researchers attempting to study the issue of socialization in online learning programs have encountered problems in defining socialization and its role within the context of online classrooms, where face-to-face communication is not available (Irwin & Berge, 2006). For instance, interactions with peers undoubtedly influence children’s socialization, but when these interactions are removed from the physical classroom and conducted through online communication, the extent of their influence becomes unclear (Irwin & Berge, 2006).

In a NACOL white paper, Watson and Gemin (2008) described promising practices that online schools have implemented with the goal of fostering student social interaction. These practices included student interactions with online teachers; online interactions among students; and real-world, face-to-face interactions among students. However, this report did not present formal research on the outcomes of such promising practices, in terms of measuring students’ social skills development.

Socialization in the Absence of Face-to-Face Contact: Results from Home-Schooling Research

Concerns relating to the lack of face-to-face contact among teachers, students, and their peers are not unique to online schools, and have long been a source of debate surrounding home-schooling programs (Lubienski, 2000; Van Galen & Pitman, 1991). Roblyer (2006) reported the following:

As the home-schooling movement showed that students can learn successfully from parents in homes, virtual schooling shows that they can learn “anywhere, anytime, anyplace,” without ever meeting a teacher in person. Both kinds of schooling profit from the absence of issues that often slow learning to a crawl in traditional schools: the physical plant, behavior problems, special needs, and lack of motivation (p. 5).

While research is lacking in the area of socialization and online schooling, a great deal of research has focused upon the development of social skills in home-schooling, where learning also takes place in the absence of face-to-face contact with teacher and peers.

As the practice of home-schooling grew in popularity, scholars, educators, and legislators began to voice concerns about the possibility that home-schooled children might experience a “lack of socialization” or “isolation from the world” (Lubienski, 2000; Van Galen & Pitman, 1991). Since then, several studies have examined the differences in socialization between home-schooled and traditionally schooled children.

Although some debate still exists, the majority of available research suggests that the social skills acquired by home-schooled children are at least equal to those of children attending conventional schools (Francis & Keith, 2004; Kitchen, 1991; Koehler et al., 2002; Shyers, 1992; Smedley, 1992; Stough, 1992). Researchers utilizing parental ratings of their children’s socialization skills (e.g., empathy, cooperativeness) have found that home-schooled children are no different than traditionally schooled children (Francis & Keith, 2004; Stough, 1992).

A growing amount of evidence suggests that the social skills of home-schooled children may actually surpass those of their traditionally schooled counterparts (Koehler et al., 2002; Shyers, 1992; Smedley, 1992). For example,

Smedley (1992) in a master's thesis at Radford University used the Vineland Adaptive Behavior Scales (structured interview of parents) to assess socialization skills in home-educated and conventionally educated children. This study found that children schooled at home were more mature and better socialized (84th percentile) than those who were sent to school (27th percentile). Smedley concluded that public school students are socialized "horizontally" into conformity by their same-age peers, while home-schooled students are socialized "vertically" toward responsibility and adulthood by their parents. Koehler et al. (2002) studied 23 children utilizing the Social Skills Rating Scale (Gresham & Elliot, 1990). Seven were home-schooled, and 16 were publicly educated. Parent ratings indicated that home-schooled children scored above average in relation to overall social skills while public-schooled children scored average.

While many studies utilizing parental ratings indicate a positive trend regarding the socialization of home-schooled children, Koehler et al. (2002) note that it is important to consider that parental ratings are prone to reporter bias, thus inflating variation between home-schooled children and those attending regular schools. Similar results, however, have also been reported from other kinds of studies, based on data that are less susceptible to reporter bias. Shyers (1992) compared the actual behaviors of two groups of 70 children from the ages of 8 to 10. One group was home-schooled and the other group was drawn from public and private schools. This was a "blind" study, in which the children's behaviors were evaluated by trained observers who did not know which of the students were home-schooled and which were not. The Child Observation Checklist Direct Observation Form was used to categorize each child's conduct while playing in mixed groups of children from both sample groups. The home-schooled children were found to exhibit significantly fewer problem behaviors than the children from public and private schools.

Recent research has indicated that home-schooled children, who are socialized outside of the traditional face-to-face interactions that define traditional schools, are no less capable of becoming productive, participating adult members of society (Knowles, 1991; Ray, 2003; Webb, 1989). Knowles (1991) studied more than 1,000 Michigan adults who had been home-schooled. None were unemployed or on welfare (compared to 5.6% and 11.2%, respectively, for the average population). A full 94% said that home-schooling helped prepare them to be independent persons, and 79% said that it helped them to interact with those from other levels of society. There is also research suggesting that home-schooled children are especially well prepared for the academic and social demands of higher education (Galloway & Sutton, 1997; Webb, 1989). Galloway & Sutton (1997) examined leadership abilities in undergraduates from public, private, and home schools. Results revealed that home-schooled college students ranked highest in campus life leadership activities. In sum, there is a growing amount of evidence indicating that the post-adolescent performance and adjustment of children are not dependent upon the socializing agents of traditional schools (Galloway & Sutton, 1997; Knowles, 1991; Ray, 2003; Webb, 1989).

An important caveat about this entire body of research is that many of the studies have targeted small numbers of students (i.e., fewer than 100), restricting the ability to generalize to the larger population.

Summary

Conventional schooling has traditionally been viewed as a primary vehicle for socialization of children. This perception has resulted in concerns that children who do not receive conventional schooling may lack adequate opportunities to develop their social skills. Despite these concerns, most of the limited research on children who have been home-schooled has found that these children's socialization is equal, and in some cases superior, to that of children who attend conventional schools. While this research is not directly applicable to students in other schooling situations—such as online public schools—it suggests that at least in some cases, students appear to acquire adequate social skills from settings that do not include face-to-face interaction with other children and teachers in a traditional classroom environment.

Thus far, no substantial body of research exists on the question of how online schooling impacts students' socialization. The present study was designed to help address this research gap by comparing parent, state certified public school teacher, and student self-assessments of the socialization skills of students who have been attending online public schools (more than 250 students total) to national norms for the same nationally recognized assessment. This study also collected important information about the reasons students attend online public schools, student social and individual activities outside of school, and parents' perceptions of the impact of online public schooling.

Evaluation Research Questions

This evaluation study of full-time, online public schooling investigated the following questions focusing on students' social skills:

- 1 Are parental ratings of the social skills of their children enrolled in full-time, online public schools different from a national sample of parental ratings of children of comparable ages/grades and genders in traditional public schools?
- 2 Do parental ratings of their children's social skills differ as a function of children's time enrolled in full-time, online public schools?
- 3 Are teacher ratings of the social skills of children enrolled in full-time, online public schools different from a national sample of teacher ratings of children of comparable ages/grades and genders in traditional public schools?
- 4 Do the self-ratings of social skills of children enrolled in full-time, online public schools differ from the self-ratings of a national sample of children of comparable ages/grades and genders in traditional public schools?
- 5 What are parents' reasons for choosing full-time, online public schools for their children?
- 6 What is the frequency of participation for students in full-time, online public schools in a variety of activities outside the school day that involve and do not involve peer interaction?
- 7 What are parents' perceptions of the impact of full-time, online public schooling on specific outcomes, including outcomes related to children's academic performance, attitude toward school and schoolwork, behavior with other children, and self-esteem?
- 8 Are there relationships between parent reasons for enrolling children in full-time, online public schools and the social skills ratings they assign to their children?
- 9 Are there relationships between frequency and type of children's activities outside the school day and social skills ratings for students enrolled in full-time, online public schools?
- 10 What do parents see as the benefits and/or disadvantages and challenges of full-time, online public schooling?

Description of the Target and Comparison Groups

Target Group

All four schools selected as part of the study belonged to an informal network of online public schools that use the K¹² online curriculum and many of its administrative services. The four schools were:

- Arizona Virtual Academy (AZVA)
- California Virtual Academy (CAVA)/San Diego
- Idaho Virtual Academy (IDVA)
- Ohio Virtual Academy (OHVA)

The schools offered students in grades K-8 coursework in Language Arts/English, Mathematics, History, Science, Art, and Music. A state-certified public school teacher, hired by the school, was assigned to each student to guide and track the student's progress through the curriculum. Teacher communication with students and their parents (or other responsible adults) took place via e-mail, telephone, online meetings, and regular face-to-face meetings.

Instruction was delivered online via a learning management system, with lessons featuring a mixture of online and offline teaching tools, including interactive animations, printed books with illustrations and narrative, original CDs and videos, and hands-on materials for experiments. Additionally, each family received a loaner computer and subsidized Internet access.

The parent (or other responsible adult) served as a "learning coach" to the child, helping facilitate progress through the daily lessons and working to modify the pace and schedule according to the child's needs, while working closely with the teacher. Students were expected to put in four to six hours of study each day. A suggested lesson plan was provided for the parent each week, which updated automatically as the student progressed. Student-student interaction was stressed through online discussions and field trips. Lessons were followed by assessments to ensure that students had mastered a particular area before moving on.

Because these were public schools, they were tuition-free to the families of the attending students. Each of these online public schools was required to follow its state's mandates related to enrollment, operation, health, and all forms of assessment and accountability. Each school adhered to its state's testing requirements for students and to other applicable public school policies and procedures.

Comparison Group

Results from the *Social Skills Rating System (SRSS)* for students from the selected online public schools were compared to national public school norms for the *SRSS*, as reported in *Social Skills Rating System: Manual* (Gresham & Elliot, 1990). The comparison group for this study thus represented students in traditional, face-to-face, public school classrooms. (For additional details on the *SSRS* norming sample, see Information About the *Social Skills Rating System [SSRS]*, in the Evaluation Research Methodology section, later in this paper.)

Selection of Schools, Students, and Teachers

The study assesses students' social skills in grades 2, 4, and 6, enrolled in four separate and distinct full-time, online public schools, operating in four different states in the U.S. Criteria for participation included the following:

- 1 Each school had to have been in operation for three or more years.
- 2 Each school had to agree to distribute and collect consent forms to parents of students selected for possible participation.
- 3 Each school had to assign an evaluation coordinator, who served as a liaison to the participating parents and students—to get them to meet their responsibilities toward the study.
- 4 The lead administrator of each school, with the consent of its governing board, had to indicate in writing the school's desire to participate and its commitment to criteria 2 and 3 above.

Implementation Procedure

Each school provided to IESD and CREP the names and addresses of parents agreeing to participate in the study. A mix of students in grades 2, 4, and 6 was sought, including both (a) students for whom 2007-2008 was their first school year attending a full-time, online public school, and (b) students who had attended such a school for more than one school year.

Students who were identified by their schools as emotionally handicapped, behaviorally handicapped, severely mentally handicapped, or autistic were excluded from the study. The reason for excluding students in these

categories was to focus on social skills among the typical range of mainstream public school students. In keeping with this focus, data from the full-time, online public school students were compared wherever possible with *SSRS* norms that excluded handicapped students: i.e., in the whole-group comparisons with elementary *SSRS* norms. However, this could not be done with the comparisons for specific grade/gender categories, since the *SSRS* norms by grade/gender categories grouped together both handicapped and non-handicapped students, and norms for non-handicapped students only were not provided.

The schools sent parents an introductory letter about the evaluation program, which included a consent form. The letters asked for parent participation in the study, as well as the participation of their 4th and/or 6th grade children as applicable. Packets containing directions, the instruments, and a stamped return envelope were mailed by CREP to each parent that had consented to participate.

Participating teachers were selected by the school administration. Each participating teacher completed an *SSRS* form for one or two children with whom they had worked for at least two years.

Participant Totals

A total of 276 *SSRS* Parent forms were received from 4 online public schools for students enrolled in grades 2, 4, and 6. *SSRS* Student self-assessment forms were collected from 176 children in grades 4 and 6. Teachers submitted a total of 58 *SSRS* Teacher forms on students in grades 2, 4, and 6. The number of forms received by type, grade, and gender is shown in Table 1. A total of 279 Parent Information Questionnaires were completed and submitted by parents.

Table 1.
Online Public School Study Participants by Grade and Gender

	2nd Grade Females	2nd Grade Males	4th Grade Females	4th Grade Males	6th Grade Females	6th Grade Males	Total
Parents	48	53	49	48	39	39	276
Students	NA	NA	50	49	38	39	176
Teachers	12	22	6	6	7	5	58

Evaluation Research Methodology

The study followed a posttest-only, treatment-comparison design. The treatment group consisted of students in grades 2, 4, and 6 from four full-time, online public schools that utilize K¹² curriculum and technology resources. The comparison group was the norming sample population for the *SSRS*, as reported in *Social Skills Rating System: Manual* (Gresham & Elliot, 1990). Given the constraints of the evaluation, random assignment was not a feature of the study.

Data Collection Instruments

The research included the following data collection instruments:

- **Social Skills Rating System (SSRS)**
 - **Parent Rating Form** This was completed by parents of online public school students in grades 2, 4, and 6 in the four selected schools during May-July 2008.
 - **Teaching Rating Form** This was completed by teachers of online public school students in grades 2, 4, and 6 in the four selected schools during May-July 2008.
 - **Student Self-Rating Form** This was completed by online public school students in grades 4 and 6 in the four selected schools during May-July 2008.

The *SSRS* Student form and Teacher form were included in this evaluation design to strengthen the validity of the findings. If assessment of students' social skills were to be based solely on a parent-completed instrument, the results might be perceived as biased in favor of the finding that students have strong social skills.

For more information about the *SRSS*, see the Information About the *Social Skills Rating System (SSRS)* section below.

- **Parent Information Questionnaire (PIQ):** This questionnaire, developed by the researchers, was completed by parents of online public school students in grades 2, 4, and 6 in the four selected schools during May-July 2008. The PIQ was used to collect information about:
 - Reasons for choosing a full-time, online public school (e.g., parents wanting more involvement in their child's education, children needing an individualized approach to learning, or concerns about school safety). Parents chose from a list all the reasons that applied.
 - Types of children's activities (e.g., sports involving other children, religion-affiliated or cultural organizations, classes or lessons involving or not involving other children). Parents rated their children's frequency of participation for each item on a list.
 - Outcomes (e.g., academic performance, attitude toward school and schoolwork, behavior with other children, self-esteem) for which parents indicated "better," "no change," or "worse."
 - Stories, anecdotes, and/or thoughts related to the family's experience with their online public school (addressed through an open-ended question)

For more information about development of the PIQ, see below.

Information About the *Social Skills Rating System (SSRS)*

The *Social Skills Rating System (SSRS)* (Gresham & Elliott, 1990), published by Pearson Assessments, provides a broad, multi-rater assessment of the social skills and behaviors of students. The *SSRS* documents the perceived frequency and importance of behaviors influencing the student's development of social competence and adaptive functioning.

Several comparative evaluations of published rating scales have declared the *SSRS* to be the most comprehensive instrument because of its multi-source approach (Demaray et al., 1995; Merrell, 2001). The *SSRS* has been widely used in numerous studies, and the combined parent, student, and teacher forms were standardized using a diverse nationwide sample (multiracial, handicapped and non-handicapped, and male and female) of more than 4,000 cases (Merrell, 2001).¹ The *SSRS* was selected to assess the social skills of full-time online public school students because of "its multi-source approach... and overall strong reliability and validity" (Demaray et al., 1995).

¹ "The *SSRS* was standardized in 1988 on a national sample of 4,170 children using children's self-ratings and the ratings of 1,027 parents and 259 teachers. Participating facilities included public and private schools and a few non-school educational centers. Data from the standardization sample were used to construct national norms for the Elementary and Secondary levels of the Parent, Teacher, and Student forms. Norms are stratified by broad age groups corresponding to Preschool, Elementary grades (K-6), and Secondary grades (7-12). Norms are also provided by gender and by grade within gender." Norms for the Elementary and Secondary levels were developed separately for non-handicapped and for handicapped students. However, norms by grade within gender combined both non-handicapped and handicapped students (Gresham & Elliot, 1990).

Whole-group norms to which the current study findings were compared were derived from ratings by 522 parents of elementary level (grades K-6) non-handicapped students enrolled in traditional public schools; 769 teacher ratings of students from a national sample of elementary level (grades K-6) non-handicapped, traditional school students; and self-ratings of 406 upper elementary level (grades 3-6) non-handicapped, traditional school students (Gresham & Elliot, 1990).

The *SSRS* is distinguished from other social skills assessments in that it emphasizes positive behaviors in addition to including a brief assessment of potential problem behaviors and academic competence, whereas most other assessments reviewed for this project focus on potential problem behaviors and academic competence only.

The *SSRS*'s standardized, norm-referenced scales include three behavior rating forms (Parent, Teacher, and Student) appropriate for children from grades 3 through 12, and two behavior rating forms (Parent and Teacher) appropriate for children from preschool through grade 2.

In this evaluation project, the *SSRS* Parent form was administered to compare social skills and problem behaviors among children in the present sample to nationally normed data for children of comparable ages (grade level and gender). In addition, the *SSRS* Student form was administered to participating students in grades 4 and 6 to compare self-assessment of social skills and problem behaviors among children in the present sample to nationally-normed data for children of comparable ages. (As noted above, an *SSRS* Student form is not available for students in grade 2.) The *SSRS* Teacher form was used in the proposed study for a sample of students who have had at least two years' instruction from the same teacher—to ensure that the teachers were qualified to make judgments about the students' social skills and behaviors. (Teachers in the participating full-time, online public schools typically teach a cluster of consecutive grades, so it was easy to identify students who have had at least two years' instruction from the same teacher.)

Social Skills

The *SSRS* Parent, Teacher and Student rating scales all focus on the area of social skills. All raters assess common core behaviors from the three sub-domains of (1) cooperation, (2) assertion, (3) self-control. In addition, the Parent version measures responsibility, and the Student version measures empathy.

- 1 The Cooperation subscale focuses on behaviors such as helping others, sharing materials, and complying with rules and directions.
- 2 The Assertion subscale includes initiating behaviors, such as asking others for information and introducing oneself and responding to the actions of others.
- 3 The Responsibility subscale includes behaviors that are indicative of being able to communicate with adults and having regard for propriety of work.
- 4 The Empathy subscale incorporates behaviors that show concern and respect for others' feelings and viewpoints.
- 5 The Self-Control subscale includes behaviors that emerge in conflict situations, such as responding appropriately to teasing, and in non-conflict situations that require taking turns and compromising.

The *SSRS* uses two types of ratings based on frequency and importance. Frequency ratings made by all raters reflect how often a social behavior occurs (Never, Sometimes or Very Often). Importance ratings are completed by parents and teachers only. Parents and teachers rate each behavior on "How Important" it is for the child's development (parents) and the classroom or group setting (teachers). The Importance ratings provide a means of establishing the social value of the behaviors being assessed, which has important implications for the validity of the assessment results.

Problem Behaviors

The Problem Behaviors component identifies sub-domains including Externalizing problems, Internalizing problems, and Hyperactivity. Problem behaviors are included on the Parent and Teacher form only and are recorded in terms of frequency (Never, Sometimes, Very Often).

- 1 Externalizing problems are inappropriate behaviors involving verbal and physical aggression toward others, poor control of temper, and arguing.
- 2 Internalizing problems are behaviors indicating anxiety, sadness, loneliness, and poor self-esteem.

- 3** Hyperactivity behaviors are those involving excessive movement, fidgeting, and impulsive reactions. Hyperactivity is measured only at the elementary level.

Development of the Parent Information Questionnaire (PIQ)

This survey instrument was developed by the researchers using the following process:

- 1 Literature review.** IESD conducted a review of relevant sources related to social skills among elementary school children, then used the information gathered as a basis for developing an initial version of the Parent Information Questionnaire (PIQ). IESD also consulted information from the K¹² website on possible reasons why parents enroll their students in online schools.
- 2 Input from schools.** IESD collected information from the four online public schools participating in this study related to:
- Typical reasons parents have for choosing a full-time, online public school for their children
 - Types of children's activities outside of school that students typically engage in
 - Student outcomes that have been established as goals for the school and outcomes parents have as goals for their children related to enrollment in the online school

This information was correlated to categories developed by IESD, and used to add new categories and refine the category definitions.

- 3 Reviews from CREP.** Survey drafts were reviewed at multiple points by researchers from the Center for Research in Education Policy (CREP) at the University of Memphis. Comments from these reviewers helped to guide IESD's revision process.
- Review by CREP researchers was informed by a review of relevant research literature related to online public schooling completed by CREP and by their vast experience in developing parent questionnaires for educational research.

For the text of the Parent Information Questionnaire, see the Appendix.

Assessment Administration

Assessment administration and scoring was the responsibility of IESD researchers and CREP research and evaluation staff. All children and parent information remained confidential. Each student record was assigned an Identification Code, so that each child could be identified solely through the child's code during data analysis. The administration of each school obtained consents (expressed in writing or by email) from participating parents of students included in the study.

Data collectors in this study were staff from The Center for Research in Educational Policy (CREP) at the University of Memphis (TN), which worked under subcontract to IESD. These were graduate-level researchers experienced in gathering data and preparing it for analysis.

Parent and Student Assessments

Packets were sent to the families of all eligible students. These packets included:

- Instructions for completing the assessments and submitting them to CREP
- Scan sheet for the *Social Skills Rating System (SSRS) Parent Rating Form*
- Scan sheet for the Parent Information Questionnaire (PIQ)
- Scan sheet for the *SSRS Student Self-Rating Form*, for students in grades 4 and 6
- A stamped return envelope

Teacher Assessments

Packets were sent to the teachers of a selected number of eligible students, who had taught the same students for at least two years. These packets included:

- Instructions for completing the assessments and submitting them to CREP
- Scan sheets for the *SSRS* Teacher Rating Form (one scan sheet per student)
- A stamped return envelope

Data were collected for only a selected number of students, typically one or two students per teacher, in order to reduce the burden on participating teachers.

Assessment Processing

Completed packets from families and teachers were mailed to CREP, which was responsible for processing the data. Scan sheets were processed by machine, and the open-ended responses from the Parent Information Form were entered into a survey management system and compiled into a listing by individual parent response.

For the *SSRS* forms, raw and standardized Total Scale scores and subscale scores were produced for both the Social Skills scale and the Problem Behavior scale, using computer software for the Social Skills scale items and Problem Behavior scale items.

For the PIQ, response data were compiled in a survey management system for use in the analysis.

Data Analysis Procedures

Table 2 provides an overview of the assessment instruments and the data analysis that were completed in order to answer each evaluation question.

Table 2.
Assessment Measures and Data Analyses

Evaluation Question	Instrument(s)	Analysis
1 Are parental ratings of the social skills of their children enrolled in full-time, online public schools different from a national sample of parental ratings of children of comparable ages/grades and genders in traditional public schools?	<i>Social Skills Rating System (SSRS)</i> Parent form	z-score comparisons
2 Do parental ratings of their children's social skills differ as a function of children's time enrolled in full-time, online public schools?	SSRS Parent form	<ul style="list-style-type: none"> • z-score comparisons • t-tests
3 Are teacher ratings of the social skills of children enrolled in full-time, online public schools different from a national sample of teacher ratings of children of comparable ages/grades and genders in traditional public schools?	SSRS Teacher form	z-score comparisons
4 Do the self-ratings of social skills of children enrolled in full-time, online public schools differ from the self-ratings of a national sample of children of comparable ages/grades and genders in traditional public schools?	SSRS Student Self-Assessment administered to 4th and 6th grade students	z-score comparisons
5 What are parents' reasons for choosing full-time, online public schools for their children?	Parent Information Questionnaire (PIQ)	Descriptive statistics—frequencies
6 What is the frequency of participation for students in full-time, online public schools in a variety of activities outside the school day that involve and do not involve peer interaction?	Parent Information Questionnaire (PIQ)	Descriptive statistics—frequencies
7 What are parents' perceptions of the impact of full-time, online public schooling on specific outcomes, including outcomes related to children's academic performance, attitude toward school and schoolwork, behavior with other children, and self-esteem?	Parent Information Questionnaire (PIQ)	Descriptive statistics—frequencies
8 Are there relationships between parent reasons for enrolling children in full-time, online public schools and the social skills ratings they assign to their children?	<ul style="list-style-type: none"> • Parent Information Questionnaire (PIQ) • SSRS Parent form 	Pearson R correlation
9 Are there relationships between frequency and type of children's activities outside the school day and social skills ratings for students enrolled in full-time, online public schools?	<ul style="list-style-type: none"> • Parent Information Questionnaire (PIQ) • SSRS Parent form 	Pearson R correlation
10 What do parents see as the benefits and/or disadvantages and challenges of full-time, online public schooling?	PIQ	Categorical analysis of common themes

Data analysis was completed by CREP, working under subcontract to IESD, with results reviewed by IESD. A top-level overview of the analyses follows.

z-Score Comparison

The z-score comparison is a statistical analysis that is used to find out if there is a real difference between the means (averages) of a target sample group under investigation and a norming sample group. Comparisons are made to two critical values in order to determine statistical significance. If the z-score is less than critical value 1, then the target sample mean is significantly lower than the norm mean. If the z-score is greater than critical value 2, then the target sample mean is significantly higher than the norm mean. If neither is true, then there is no significant difference between the means. For example, this test was used to assess the significance of differences between students enrolled in full-time, online schools and the normative population on the *SSRS* Parent, Teacher, and Student Self-Assessment ratings.

t-Test

The *t*-test is a statistical test that is used to find out if there is a real difference between the means (averages) of two different groups. For example, this test was used to assess the significance of differences between the parent ratings of students enrolled in online public schools for one year or less to parent ratings of students enrolled more than one year on the *SSRS* Parent form.

Descriptive Statistics—Frequencies

Frequencies for students enrolled in full-time, online public schools were tallied for each of the items within the multiple choice questions on the Parent Information Questionnaire (PIQ). Specifically, frequencies were used to analyze the data from the PIQ items that asked parents to select from among reasons for enrolling their children in an online public school, to select from among their children's activities outside the school day, and to rate various student outcomes as a result of full-time, online public schooling.

Pearson R

The Pearson R correlation coefficient assesses the linear association between two variables. It measures the strength of the relationship between two variables. Expressed on a scale from -1.0 to +1.0, the strongest correlations are at both extremes. For example, in this study, Pearson R correlations were run to analyze the relationships between frequency and type of children's activities outside the school day and social skills ratings for students enrolled in full-time, online public schools.

Categorical Analysis of Common Themes

Categorical analysis of common themes is a means of classifying open-ended responses in terms of disparate categories. For example, parents might see that a benefit of full-time, online schooling is that children can work at a faster pace if they are gifted or can select a slower pace if they have a learning disability. Such different responses would have been counted in the larger category, "faster learning, students learning at their own pace, flexible schedule."

Results

The results of the study are presented in order by research question. Data collection and analyses were conducted by the Center for Research in Educational Policy at The University of Memphis, under subcontract to IESD, and under IESD's direction. Data were provided from two sources: the *Social Skills Rating System (SSRS)* and the Parent Information Questionnaire (PIQ).

Analysis for Research Question 1

Are parental ratings of the social skills of their children enrolled in full-time, online public schools different from a national sample of parental ratings of children of comparable ages/grades and genders in traditional public schools?

This question was first addressed by analyzing results for the total subject sample of students enrolled in full-time, online public schools in grades 2, 4, and 6, and then by analyzing results separately for each grade/gender category (e.g., 2nd grade females).

Both for the total student sample and for each grade/gender category (2nd, 4th, and 6th grade females, and 2nd, 4th, and 6th grade males), raw score means were converted to z-scores for the Social Skills and Problem Behaviors subscales and Total Scale scores from the *SSRS* Parent form.² Z-scores from the rating scale of parents who enrolled their children in online public schools were compared to a national sample of ratings from parents of elementary level non-handicapped students enrolled in traditional public schools.³ Z-scores from parents of online students for each specific grade/gender category (e.g., 2nd grade females) were compared to a national sample of ratings from parents of elementary level handicapped and non-handicapped students enrolled in traditional public schools by grade and gender, because non-handicapped-only norms were unavailable at this level of specificity.

Results for the Total Student Sample

Z-scores from the rating scale of parents who enrolled their 2nd, 4th, and 6th grade children in online public schools were compared to a national sample of ratings from 522 parents of elementary level non-handicapped students enrolled in traditional public schools.

Compared to the national sample, parents of full-time, online public school children:

- Rated their children *significantly higher* (more skilled) on each Social Skills subscale (Cooperation, Assertion, Responsibility, and Self-Control) and on the Total Social Skills Scale
- Rated their children *significantly lower* (fewer problems) on each Problem Behavior subscale (Externalizing, Internalizing, and Hyperactivity) and on the Total Problem Behaviors Scale

² Throughout this study, in all cases where z-scores are calculated, comparisons are made to two critical values in order to determine statistical significance (e.g., Table 3). If the z-score is less than critical value 1, then the online sample mean is significantly lower than the norm mean. If the z-score is greater than critical value 2, then the online sample mean is significantly higher than the norm mean. If neither is true, then there is no significant difference between the means.

³ The sample of full time, online public school students excluded students who were identified by the participating schools as emotionally handicapped, behaviorally handicapped, severely mentally handicapped, and/or autistic. Students who were identified as mildly mentally handicapped were eligible for inclusion in the study.

Table 3.

Parent Ratings of Online Public School Students versus National Sample of Parents of Non-handicapped Students

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	12.0	3.3	270	13.7	8.46	-1.96	1.96	N	Y
Assertion	15.9	2.7	262	17.1	7.19	-1.96	1.96	N	Y
Responsibility	13.3	2.7	263	15.8	15.02	-1.96	1.96	N	Y
Self-Control	12.5	3.2	262	15.0	12.65	-1.96	1.96	N	Y
<i>Total Scale</i>	53.7	8.7	248	61.6	14.30	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	3.9	2.1	272	3.0	-7.07	-1.96	1.96	Y	N
Internalizing	3.9	2.3	269	2.8	-7.84	-1.96	1.96	Y	N
Hyperactivity	4.4	2.2	269	3.5	-6.71	-1.96	1.96	Y	N
<i>Total Scale</i>	12.2	5.3	267	9.4	-8.63	-1.96	1.96	Y	N

Significant = ($p < .05$)

Detailed breakdowns by grade level and gender are provided below.

Results by Grade Level for Female Students

Compared to national samples of ratings from parents of female students enrolled in traditional schools, parents of full-time, online public school children:

- Rated their female children in grades 2 and 4 *significantly higher* on each Social Skills subscale and on the Total Social Skills Scale
- Rated their female children in grade 6 *significantly higher* on each Social Skills subscale with the *exception* of Cooperation, which was *not significantly different*. They also rated these children *significantly higher* on the Total Social Skills Scale.
- Rated their female children in grades 2, 4, and 6 *significantly lower* on each Problem Behaviors subscale and on the Total Problem Behaviors Scale

Table 4.

Parent Ratings of 2nd Grade Females in Online Public Schools versus a National Sample of Parents of 2nd Grade Females

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	12.5	2.6	47	14.4	5.01	-1.96	1.96	N	Y
Assertion	16.0	2.7	46	17.9	4.77	-1.96	1.96	N	Y
Responsibility	13.7	2.2	46	15.7	6.17	-1.96	1.96	N	Y
Self-Control	12.6	2.3	46	15.4	8.26	-1.96	1.96	N	Y
<i>Total Scale</i>	54.8	7.1	44	63.0	7.66	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	4.0	2.0	48	2.3	-5.89	-1.96	1.96	Y	N
Internalizing	4.2	2.2	45	2.7	-4.57	-1.96	1.96	Y	N
Hyperactivity	4.2	1.9	47	3.2	-3.61	-1.96	1.96	Y	N
<i>Total Scale</i>	12.3	5.0	45	8.4	-5.23	-1.96	1.96	Y	N

Significant = ($p < .05$)

Table 5.

Parent Ratings of 4th Grade Females in Online Public Schools versus a National Sample of Parents of 4th Grade Females

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	12.2	2.7	49	14.2	5.19	-1.96	1.96	N	Y
Assertion	15.8	2.7	48	17.2	3.59	-1.96	1.96	N	Y
Responsibility	13.6	2.6	49	15.9	6.19	-1.96	1.96	N	Y
Self-Control	12.2	3.2	47	15.4	6.86	-1.96	1.96	N	Y
Total Scale	53.9	8.4	46	62.9	7.27	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	3.7	1.8	49	2.6	-4.28	-1.96	1.96	Y	N
Internalizing	4.2	2.2	49	2.9	-4.14	-1.96	1.96	Y	N
Hyperactivity	4.1	2.3	49	3.1	-3.04	-1.96	1.96	Y	N
Total Scale	11.9	5.3	49	8.6	-4.36	-1.96	1.96	Y	N

Significant = (p<.05)

Table 6.

Parent Ratings of 6th Grade Females in Online Public Schools versus a National Sample of Parents of 6th Grade Females

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	13.1	3.6	36	14.0	1.50	-1.96	1.96	N	N
Assertion	14.2	3.0	34	17.4	6.22	-1.96	1.96	N	Y
Responsibility	13.8	2.5	33	17.2	7.81	-1.96	1.96	N	Y
Self-Control	13.5	3.5	35	16.3	4.73	-1.96	1.96	N	Y
Total Scale	54.6	8.7	32	65.2	6.89	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	3.4	2.2	36	2.3	-3.00	-1.96	1.96	Y	N
Internalizing	4.3	2.1	36	2.6	-4.86	-1.96	1.96	Y	N
Hyperactivity	3.6	2.1	35	1.9	-4.79	-1.96	1.96	Y	N
Total Scale	11.2	5.0	35	6.7	-5.32	-1.96	1.96	Y	N

Significant = (p<.05)

Results by Grade Level for Male Students

Compared to national samples of ratings from parents of male students enrolled in traditional schools, parents of full-time, online public school children:

- Rated their male children in grades 2 and 4 *significantly higher* on each Social Skills subscale and on the Total Social Skills Scale
- Rated their male children in grade 6 *significantly higher* on each Social Skills subscale with the *exception* of Assertion, which was *significantly lower* for online students
- Rated their male children in grade 2 *significantly lower* on each Problem Behaviors subscale and on the Total Problem Behaviors Scale
- Rated their male children in grade 4 *significantly lower* on each Problem Behaviors subscale with the *exception* of Hyperactivity, which was *not significantly different*
- Rated the Total Problem Behaviors Scale *significantly lower* for grade 4 males
- Did *not* rate their male children in grade 6 *significantly differently* on any Problem Behaviors subscales or on the Total Problem Behaviors Scale

Table 7.

Parent Ratings of 2nd Grade Males in Online Public Schools versus a National Sample of Parents of 2nd Grade Males

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	11.8	2.6	53	13.3	4.20	-1.96	1.96	N	Y
Assertion	15.4	3.0	53	17.2	4.37	-1.96	1.96	N	Y
Responsibility	12.5	3.0	52	15.2	6.49	-1.96	1.96	N	Y
Self-Control	11.6	3.7	52	14.2	5.07	-1.96	1.96	N	Y
<i>Total Scale</i>	51.4	10.0	51	60.2	6.28	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	4.2	2.2	53	3.3	-2.98	-1.96	1.96	Y	N
Internalizing	4.2	2.4	53	2.5	-5.16	-1.96	1.96	Y	N
Hyperactivity	4.7	2.7	53	3.8	-2.43	-1.96	1.96	Y	N
<i>Total Scale</i>	13.2	6.1	53	9.6	-4.30	-1.96	1.96	Y	N

Significant = ($p < .05$)

Table 8.

Parent Ratings of 4th Grade Males in Online Public Schools versus a National Sample of Parents of 4th Grade Males

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	10.7	3.3	48	13.5	5.88	-1.96	1.96	N	Y
Assertion	15.8	2.6	45	17.3	3.87	-1.96	1.96	N	Y
Responsibility	13.1	3.0	47	15.9	6.40	-1.96	1.96	N	Y
Self-Control	11.7	3.6	47	14.7	5.71	-1.96	1.96	N	Y
<i>Total Scale</i>	51.3	8.9	43	61.9	7.81	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	4.5	2.3	48	3.4	-3.31	-1.96	1.96	Y	N
Internalizing	3.9	2.2	48	2.9	-3.15	-1.96	1.96	Y	N
Hyperactivity	4.6	2.1	47	4.4	-0.65	-1.96	1.96	N	N
<i>Total Scale</i>	13.0	5.6	47	10.7	-2.82	-1.96	1.96	Y	N

Significant = ($p < .05$)

Table 9.

Parent Ratings of 6th Grade Males in Online Public Schools versus a National Sample of Parents of 6th Grade Males

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	10.7	3.1	36	12.7	3.87	-1.96	1.96	N	Y
Assertion	16.3	2.4	35	15.1	-2.96	-1.96	1.96	Y	N
Responsibility	13.8	2.5	35	15.0	2.84	-1.96	1.96	N	Y
Self-Control	12.2	3.3	34	13.9	3.00	-1.96	1.96	N	Y
<i>Total Scale</i>	53.1	7.4	31	56.0	2.18	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	4.3	2.1	37	4.0	-0.87	-1.96	1.96	N	N
Internalizing	4.3	2.5	37	3.8	-1.22	-1.96	1.96	N	N
Hyperactivity	4.5	2.2	37	4.6	0.28	-1.96	1.96	N	N
<i>Total Scale</i>	13.1	5.3	37	12.3	-0.92	-1.96	1.96	N	N

Significant = ($p < .05$)

Analysis for Research Question 2

Do parental ratings of their children's social skills differ as a function of children's time enrolled in full-time, online public schools?

Based on information from the schools, students in the study were classified as having been enrolled for one year or less in the full-time online public school, or for more than one year, as shown in Table 10.

Table 10.
Student Enrollment by Year in Online Public Schools

Students Enrolled One Year or Less	100
Students Enrolled More Than One Year	176
Information not Provided	3
Total	279

Raw score means were converted to z-scores for the Social Skills and Problem Behaviors subscales and the Total Scale scores from the *SSRS* Parent form. Z-scores from the rating scale of parents who enrolled their children in online public schools for one year or less and for more than one year were compared to a national sample of ratings from 522 parents of non-handicapped elementary students who were enrolled in traditional public schools.

Compared to the national sample, parents of full-time, online public school children:

- Rated their children *significantly higher* on all Social Skills subscales and on the Total Social Skills Scale, *regardless of time enrolled in the program*
- Rated their children *significantly lower* on each Problem Behaviors subscale and on the Total Problem Behaviors Scale, *regardless of time enrolled in the program*

Table 11.
Parent Ratings of Students Enrolled for 1 Year or less of Online Classes versus a National Sample of Parents of Non-handicapped Students

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	12.0	3.3	96	13.5	4.45	-1.96	1.96	N	Y
Assertion	15.9	2.7	93	16.9	3.57	-1.96	1.96	N	Y
Responsibility	13.3	2.7	93	15.6	8.21	-1.96	1.96	N	Y
Self-Control	12.5	3.2	95	14.3	5.48	-1.96	1.96	N	Y
<i>Total Scale</i>	53.7	8.7	89	60.6	7.48	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	3.9	2.1	96	3.0	-4.20	-1.96	1.96	Y	N
Internalizing	3.9	2.3	96	3.1	-3.41	-1.96	1.96	Y	N
Hyperactivity	4.4	2.2	96	3.7	-3.12	-1.96	1.96	Y	N
<i>Total Scale</i>	12.2	5.3	96	9.8	-4.44	-1.96	1.96	Y	N

Significant = (p<.05)

Table 12.
Parent Ratings of Students Enrolled for More than 1 Year of Online Classes versus a National Sample of Parents of Non-handicapped Students

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	12.0	3.3	173	13.9	7.57	-1.96	1.96	N	Y
Assertion	15.9	2.7	168	17.3	6.72	-1.96	1.96	N	Y
Responsibility	13.3	2.7	169	15.9	12.52	-1.96	1.96	N	Y
Self-Control	12.5	3.2	166	15.3	11.27	-1.96	1.96	N	Y
<i>Total Scale</i>	53.7	8.7	158	62.4	12.57	-1.96	1.96	N	Y
Problem Behaviors									
Externalizing	3.9	2.1	175	2.9	-6.30	-1.96	1.96	Y	N
Internalizing	3.9	2.3	172	2.7	-6.84	-1.96	1.96	Y	N
Hyperactivity	4.4	2.2	172	3.4	-5.96	-1.96	1.96	Y	N
<i>Total Scale</i>	12.2	5.3	170	9.1	-7.63	-1.96	1.96	Y	N

Significant = (p<.05)

T-tests were performed to compare the parent ratings of students enrolled in online public schools for one year or less to parent ratings of students enrolled more than one year on the Social Skills and Problem Behaviors subscales and the Total Scale scores from the *SSRS* Parent form. Results from the comparison were as follows:

- Students who had been enrolled for more than one year were rated *significantly higher* on the Social Skills subscale Self Control than students enrolled for one year or less.
- There were *no significant differences* based on time enrolled for any of the other Social Skills subscales or on the Total Social Skills Scale.
- There were *no significant differences* based on time enrolled on any of the Problem Behaviors subscales or on the Total Problem Behaviors Scale.

Table 13.

Parent Ratings of Students Enrolled for 1 Year or Less in Online Classes versus Parent Ratings of Students Enrolled for More than 1 Year in Online

	Mean for 1 Year or Less	Mean for More than 1 Year	t	df	p
Social Skills					
Cooperation	13.5	13.9	-1.172	267	0.242
Assertion	16.9	17.3	-1.144	259	0.254
Responsibility	15.6	15.9	-0.976	260	0.330
Self Control	14.3	15.3	-2.323	259	0.021
Total Scale	60.6	62.4	-1.489	245	0.138
Problem Behaviors					
Externalizing	3.0	2.9	0.223	269	0.824
Internalizing	3.1	2.7	1.788	266	0.075
Hyperactivity	3.7	3.4	0.675	266	0.501
Total Scale	9.8	9.1	0.949	264	0.344

Significant = (p<.05)

Analysis for Research Question 3

Are teacher ratings of the social skills of children enrolled in full-time, online public schools different from a national sample of teacher ratings of children of comparable ages/grades and genders in traditional public schools?

In conducting the analysis for this question, raw score means were converted to z-scores for the Social Skills and Problem Behaviors subscales and Total Scale scores from the *SSRS* Teacher form. Z-scores from the rating scale of teachers who had students enrolled in online public schools were compared to a national sample of ratings from 769 teachers of non-handicapped elementary students enrolled in traditional public schools.

Compared to the national sample, teachers of full-time, online public school students:

- Rated their students *significantly higher* on the Social Skills subscale Self-Control. *No significant differences* were found among other Social Skills subscales or on the Total Social Skills Scale score.
- Rated their students *significantly lower* on each Problem Behaviors subscale and on the Total Problem Behaviors Scale

Table 14.

Teacher Ratings of Online Public School Students versus a National Sample of Teachers of Non-handicapped Students

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	15.4	4.4	57	15.3	-0.17	-1.96	1.96	N	N
Assertion	12.5	4.2	58	13.1	1.09	-1.96	1.96	N	N
Self-Control	14.0	4.4	55	15.3	2.19	-1.96	1.96	N	Y
<i>Total Scale</i>	41.9	10.6	54	44.1	1.53	-1.96	1.96	N	N
Problem Behaviors									
Externalizing	2.2	2.7	58	1.0	-3.38	-1.96	1.96	Y	N
Internalizing	3.2	2.4	58	2.2	-3.17	-1.96	1.96	Y	N
Hyperactivity	3.3	3.0	55	2.3	-2.47	-1.96	1.96	Y	N
<i>Total Scale</i>	8.7	6.1	55	5.5	-3.89	-1.96	1.96	Y	N

Significant = ($p < .05$)

Detailed breakdowns by grade level and gender are not included, due to the small number of teacher ratings of full-time, online public school students for each grade level/gender category.

Analysis for Research Question 4

Do the self-ratings of social skills of children enrolled in full-time, online public schools differ from the self-ratings of a national sample of children of comparable ages/grades and genders in traditional public schools?

This question was first addressed by analyzing results for the total subject sample of students enrolled in full-time, online public schools in grades 4 and 6, and then by analyzing results separately for each grade/gender category (e.g., 4th grade females).

Both for the total student sample and for each grade/gender category (4th and 6th grade females, and 4th and 6th grade males), raw score means were converted to z-scores for the Social Skills subscales and Total Scale score from the *SSRS* Student Self-Rating Form. Z-scores from the self-rating scale of students in online public schools for the total student sample were compared to a national sample of self-ratings from elementary level non-handicapped students enrolled in traditional public schools. Z-scores from the self-ratings of online students for each specific grade/gender category (e.g., 4th grade females) were compared to a national sample of self-ratings from elementary level handicapped and non-handicapped students enrolled in traditional public schools by grade and gender, because non-handicapped-only norms were unavailable at this level of specificity.

Results for the Total Student Sample

Z-scores from the self-rating scale of 4th and 6th grade students enrolled in online public schools were compared to a national sample of ratings from 406 upper elementary level (grades 3-6) non-handicapped students enrolled in traditional public schools.

Compared to the national sample, students enrolled in full-time, online public schools:

- Rated themselves *significantly higher* on the Social Skills subscales Cooperation, Assertion, and Empathy, as well as on the Total Social Skills Scale
- Rated themselves *significantly lower* on the Social Skills subscale Self-Control

Table 15.
Student Self-Ratings of Online Public School Students versus a National Sample

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	14.5	2.80	172	15.3	3.75	-1.96	1.96	N	Y
Assertion	13.1	2.60	166	14.1	4.96	-1.96	1.96	N	Y
Empathy	11.2	3.10	174	16.9	24.25	-1.96	1.96	N	Y
Self-Control	15.7	3.00	171	12.3	-14.82	-1.96	1.96	Y	N
Total Scale	54.6	9.30	165	58.6	5.52	-1.96	1.96	N	Y

Significant = ($p < .05$)

Results by Grade Level for Female Students

Compared to student ratings from national samples of 4th grade and 6th grade female students enrolled in traditional public schools, 4th grade and 6th grade female students enrolled in full-time, online public schools:

- Rated themselves *significantly higher* on the Social Skills subscales Cooperation, Assertion, and Empathy, as well as on the Total Social Skills Scale (grades 4 and 6)
- Rated themselves *significantly lower* on the Social Skills subscale Self-Control (grades 4 and 6)

Table 16.
Student Self-Ratings of 4th Grade Females in Online Public Schools versus a National Sample of Self-Ratings of 4th Grade Females

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	14.8	2.8	47	15.7	2.20	-1.96	1.96	N	Y
Assertion	13.3	2.6	45	14.8	3.87	-1.96	1.96	N	Y
Empathy	11.7	3.0	48	17.7	13.86	-1.96	1.96	N	Y
Self-Control	16.3	3.0	46	13.0	-7.46	-1.96	1.96	Y	N
Total Scale	56.1	9.1	45	61.4	3.91	-1.96	1.96	N	Y

Significant = ($p < .05$)

Table 17.
Student Self-Ratings of 6th Grade Females in Online Public Schools versus a National Sample of Self-Ratings of 6th Grade Females

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	14.6	2.8	37	15.9	2.82	-1.96	1.96	N	Y
Assertion	13.2	2.5	37	14.5	3.16	-1.96	1.96	N	Y
Empathy	10.8	3.0	38	17.6	13.97	-1.96	1.96	N	Y
Self-Control	16.5	2.5	38	13.6	-7.15	-1.96	1.96	Y	N
Total Scale	55.1	8.4	37	61.6	4.71	-1.96	1.96	N	Y

Significant = ($p < .05$)

Results by Grade Level for Male Students

Compared to student ratings from national samples of 4th grade and 6th grade male students enrolled in traditional public schools, 4th grade and 6th grade male students enrolled in full-time, online public schools:

- Rated themselves *significantly higher* on the Social Skills subscales Cooperation and Empathy, as well as on the Total Social Skills Scale (grades 4 and 6)
- Rated themselves *significantly higher* on the Social Skills subscale Assertion (grade 4 only)
- Rated themselves *significantly lower* on the Social Skills subscale Self-Control (grades 4 and 6)

Table 18.

Student Self-Ratings of 4th Grade Males in Online Public Schools versus a National Sample of Self-Ratings of 4th Grade Males

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	14.0	2.9	47	15.0	2.36	-1.96	1.96	N	Y
Assertion	12.8	2.6	45	14.2	3.61	-1.96	1.96	N	Y
Empathy	10.4	3.5	48	16.1	11.28	-1.96	1.96	N	Y
Self-Control	15.0	3.3	47	11.5	-7.27	-1.96	1.96	Y	N
Total Scale	52.3	9.9	45	56.6	2.91	-1.96	1.96	N	Y

Significant = (p<.05)

Table 19.

Student Self-Ratings of 6th Grade Males in Online Public Schools versus a National Sample of Self-Ratings of 6th Grade Males

	Norm Mean	Norm SD	Online Sample n	Online Sample Mean	Z-score	Critical Value1	Critical Value2	Online Significantly Lower?	Online Significantly Higher?
Social Skills									
Cooperation	13.0	3.2	39	14.6	3.12	-1.96	1.96	N	Y
Assertion	11.9	3.0	37	12.5	1.22	-1.96	1.96	N	N
Empathy	9.3	3.3	38	16.1	12.70	-1.96	1.96	N	Y
Self-Control	14.5	3.3	38	11.1	-6.35	-1.96	1.96	Y	N
Total Scale	48.7	10.7	36	54.5	3.25	-1.96	1.96	N	Y

Significant = (p<.05)

Analysis for Research Question 5

What are parents' reasons for choosing full-time, online public schools for their children?

Findings related to this research question were calculated based on Question 3 from the Parent Information Questionnaire (PIQ). This question on the PIQ presented a list of 22 reasons why parents might have chosen an online public school for their child. Parents were directed to mark all of the reasons that applied. The responses were separated into Parent Concerns, Child Concerns, and School Concerns, as shown below in Table 20.

In response to this question, the most frequently noted reasons (each identified by more than 60% of the parents) were all parent concerns:

- A home-based environment, but with the active support and structure of the public school system (e.g., books and materials, certified teachers)
- A learning environment consistent with our family values
- More involvement in our child's education

Of the child concerns, IESD notes that the top three reasons (each identified by 38%-43% of the parents) all related to differentiating instruction to meet specific student needs:

- Needs a more challenging/higher quality curriculum
- Does better with a more self-directed approach to learning
- Needs an individualized approach

No other specific reasons were identified by more than 25% of the participants.

Table 20.

Why did you choose an online public school for your child? (Mark all that apply.)

Percent who marked as a reason	We wanted (Parent Concerns)
64.5	More involvement in our child's education.
78.5	A home-based environment, but with the active support and structure of the public school system.
70.3	A learning environment consistent with our family values.
	Our child (Child Concerns)
42.7	Does better with a more self-directed approach to learning.
37.6	Needs an individualized approach.
24.7	Is gifted/too advanced for the regular school program.
43.4	Needs a more challenging/higher quality curriculum.
5.4	Was receiving special education services at his/her previous school.
5.0	Has been diagnosed as learning disabled.
9.7	Has problems related to ADD or ADHD that make regular school difficult.
1.1	Has a physical disability.
3.2	Has a health condition that prevents attending school.
19.4	Was bored in his/her regular school.
12.2	Was bullied in his/her regular school.
5.7	Had difficulty making friends and felt left out in his/her regular school.
4.3	Was getting into trouble due to bad behavior in his/her regular school.
8.2	Travels or is unavailable during school hours due to outside activities.
2.5	Was switching schools frequently because our family moves a lot.
	The regular school (School Concerns)
16.1	Wasn't safe for our child, or travel to school wasn't safe.
22.9	Was overcrowded.
22.9	Had a bad reputation academically.
9.0	Didn't offer enough experience with multimedia and technology.
42.3	Other

Analysis for Research Question 6

What is the frequency of participation for students in full-time, online public schools in a variety of activities outside the school day that involve and do not involve peer interaction?

Findings related to this research question were calculated based on Question 4 from the PIQ, as shown below in Table 21. Note that in this table, the 18 listed activities are divided into the two top-level categories: activities *involving peer interaction* and *activities not involving peer interaction*, based on the following criteria:

Activities involving peer interaction:

- Statement contains the words "with other children"
- Statement contains the words "involve other children"
- Statement contains wording that suggested children were the primary focus of the activity (e.g., "Children's clubs and organizations")
- Statement contains the words "classes" or "school," where the supposition is that children are the primary participants
- Statement contains both the words "group" and "activities," which suggest interaction among participants

Activities not involving peer interaction:

- Statement contains the words “don’t involve other children”
- Statement has no specific mention of children and the activity traditionally involves adult leadership and/or adults

Specific activities involving peer interaction that were engaged in at least once a week by at least 50% of the students included the following:

- Children’s clubs and organizations (e.g., Boy/Girl Scouts, 4H, church groups)
- Sports that involve other children (e.g., team sports, competitions)
- Classes or lessons with other children (e.g., dance, art, martial arts, group tutoring)
- Playing with other children at someone’s home
- Religious/cultural classes or schools

Specific activities *not* involving peer interaction that were engaged in at least once a week by at least 50% of the students included the following:

- Recreational activities at home that *don’t* involve other children (e.g., reading, single-player video games, watching television)
- Individual exercise or athletic activities that *don’t* involve other children
- Religious services

Table 21.

How often does your child participate in each of the following?

	Percent Who Marked				
	More than once a week	About once a week	2-3 times a month	Once a month or less	Never
Activities Involving Peer Interaction					
Sports that involve other children.	38.0	21.7	8.3	14.5	17.4
Group performance activities.	5.1	16.8	8.4	35.9	33.7
Classes or lessons with other children.	24.2	30.0	8.8	16.1	20.9
Educational events with other children.	2.2	11.3	26.3	56.9	3.3
Children’s clubs and organizations.	20.7	39.3	12.0	10.2	17.8
Religious/cultural classes or schools.	16.0	34.9	6.5	9.5	33.1
Playing with other children at someone’s home.	31.2	22.5	25.0	19.2	2.2
School-organized social events.	0.0	5.8	8.7	73.6	11.9
Other group social events and “fun” activities.	4.3	10.5	41.7	42.4	1.1
Telephone conversations with other children.	19.1	14.4	22.7	29.2	14.4
Internet chatting, or exchanging electronic messages with other children.	18.8	5.4	9.7	14.1	52.0
Activities Not Involving Peer Interaction					
Individual exercise or athletic activities that don’t involve other children.	57.3	22.6	6.6	5.5	8.0
Classes or lessons that don’t involve other children.	12.5	29.8	7.7	15.8	34.2
Educational events that don’t involve other children.	8.6	11.9	21.9	40.5	17.1
Religious services.	28.4	47.5	4.7	10.1	9.4
Recreational activities at home that don’t involve other children.	86.7	8.3	4.0	1.1	0.0
Volunteer work with other people.	4.0	11.6	17.1	45.8	21.5
Part-time job or paid work outside the home.	2.5	6.5	5.4	13.4	72.2

Analysis for Research Question 7

What are parents' perceptions of the impact of full-time, online public schooling on specific outcomes, including outcomes related to children's academic performance, attitude toward school and schoolwork, behavior with other children, and self-esteem?

Findings related to this research question were calculated based on Question 5 from the PIQ, as shown below in Table 22.

More than three-quarters of the parents noted improvement in the following areas since their child started online public schooling:

- Skill in using technology (e.g., computers and the Internet)
- Balanced development of skills across many areas of learning (i.e., not just reading and math)
- Academic performance/progress in subject areas

More than half of the parents noted improvement in the following areas:

- Self-esteem
- Regular, helpful communication between home and school (e.g., parent-teacher conferences)
- Attitude toward school and schoolwork
- Relationship with parents
- Performance on state tests
- Daily school attendance (including hours spent with the K¹² Online School program)
- Finishing schoolwork on time
- Relationship with teachers and other adults (not including parents)

In contrast, only very low percentages of parents identified any of the areas tracked by this question as getting worse since their child started online public schooling, with *attitude toward school and schoolwork* (6.2%) as the only category that was mentioned as getting worse by more than 5% of the parents.

Table 22.

In general, since your child began the online public school program, has each of the following gotten better, shown no change, or gotten worse?

	Percent Who Marked		
	Better	No Change	Worse
Academic performance/progress in subject areas.	78.1	21.2	0.7
Performance on state tests.	57.3	41.5	1.2
Balanced development of skills across many areas of learning.	85.0	14.7	0.4
Skill in using technology.	87.6	12.4	0.0
Attitude toward school and schoolwork.	60.9	32.8	6.2
Finishing schoolwork on time.	54.0	41.2	4.7
Daily school attendance.	54.7	43.8	1.5
Regular, helpful communication between home and school.	61.8	36.0	2.2
Child's behavior at home.	48.0	49.8	2.2
Relationship with parents.	59.3	39.6	1.1
Relationship with teachers and other adults.	53.8	46.2	0.0
Behavior with other children.	40.7	58.6	0.7
Ability to make friends.	37.7	60.4	1.8
Self-esteem.	62.6	37.0	0.4

Analysis for Research Question 8

Are there relationships between parent reasons for enrolling children in full-time, online public schools and the social skills ratings they assign to their children?

Pearson correlations were used in these analyses. The Total Scale score mean from the *SSRS* Parent form was used as the measure of social skills rating. A comparison was made between the Social Skills total score means and reasons (concerns) for enrolling students in online school (Parent Concerns, Child Concerns, School Concerns) as identified in the analysis of Question 3 on the Parent Information Questionnaire (PIQ). (For more details, see Analysis for Research Question 5, above.)

Results were as follows:

- There was a *significant negative correlation* between student concerns for parents enrolling their children in online public schools and parents' ratings of their students' social skills (Total Scale score). The more concerns parents expressed about their child's specific needs related to schooling, the lower their ratings of that child's social skills.
- There was *not a significant correlation* between parents' concerns, school concerns, or all concerns combined and parents' ratings of their students' social skills.

Table 23.

Correlations Between Types of Parent Reasons for Choosing an Online Public School and Social Skills Rating Score

	Social Skills Total Scale Score	
	R	p
Parent Concerns	0.107	.094
Child Concerns	-0.135	.034
School Concerns	-0.074	.246
All Concerns Combined	-0.088	.169

Significant = ($p < .05$)

Analysis for Research Question 9

Are there relationships between frequency and type of children's activities outside the school day and social skills ratings for students enrolled in full-time, online public schools?

Pearson correlations were used in these analyses. Subscale and the Total Score means from the *SSRS* Parent form were used as the measures of social skills rating. Comparisons were made between (a) the frequency of activities involving peer interaction (as identified in the analysis of Question 4 on the PIQ) and Social Skills Subscale and Total Score means, and (b) the frequency of activities *not* involving peer interaction (i.e., activities in isolation or with family and adults, also identified in the analysis of Question 4 on the PIQ) and the Social Skills Subscale and Total Score means. (For more details, see Analysis for Research Question 6, above.)

For each student included in these analyses, frequency of participation in each of the activity types was coded as 0 for *never*, 1 for *once a month or less*, 2 for *2-3 times a month*, 3 for *about once a week*, and 4 for *more than once a week*. The frequency of responses for each student was summed across the activity types included in the broad category, *involving peer interaction*. (See Table 21 above.) Similarly, the frequency of responses for each student was summed across the activity types included in the broad category, *not involving peer interaction*.

Results were as follows:

- For activities involving peer interaction, parent ratings of students' social skills on each Social Skills subscale (Cooperation, Assertion, Responsibility, and Self-Control) and on the Total Social Skills Scale were *significantly related* to the frequency of students' activities.
- For activities *not* involving peer interaction, parent ratings of students' social skills on the Cooperation, Assertion, and Responsibility Subscales and on the Total Social Skills Scale were significantly related to the frequency of students' activities. However, parent ratings on the Self Control Subscale were *not significantly related* to the frequency of students' activities.

In general, as the frequency of activities increased, the Social Skills ratings increased.

Table 24.

Correlations between Social Skills Ratings and Frequency of Activities Involving Peer Interaction/Not Involving Peer Interaction

	Activities Involving Peer Interaction		Activities Not Involving Peer Interaction	
	R	p	R	p
Cooperation	0.289	<0.01	0.188	<0.01
Assertion	0.405	<0.01	0.222	<0.01
Responsibility	0.280	<0.01	0.231	<0.01
Self Control	0.136	0.03	0.116	0.06
Total Social Skills	0.336	<0.01	0.223	<0.01

Significant = (p<.05)

Analysis for Research Question 10

What do parents see as the benefits and/or disadvantages and challenges of full-time, online public schooling?

Findings related to this research question were based on categorical analysis of open-ended responses to Question 6 on the PIQ: "Please take a moment to share any stories, anecdotes, or thoughts about your family's experience with your online public school. We are especially interested in any things you found surprising."

A total of 188 parents responded to this item, out of 280 parents who returned the PIQ. These open-ended responses were entered into a survey management system and compiled into a listing by individual parent response. A categorical analysis of common themes in the responses was then performed, and the themes were organized into broad categories.

As shown in Table 25, the top three broad thematic categories related to benefits and positive outcomes from online public schooling, in connection to the curriculum, instruction and student learning, and student social skills.

Specific themes related to these categories that were mentioned by more than 5% of the respondents included the following:

- Good/strong curriculum, "better education," good supplies, being challenged, strong history/art/science lessons (37%)
- Faster learning, students learning at their own pace, flexible schedule (21%)
- Child is self-motivated, good attitude, confident (16%)
- Interacts well with all age groups; social (11%)
- Teacher support/good relationship with teacher (10%)
- Not negatively influenced by peers (5%)

Specific themes related to the Personal Comments category that were mentioned by more than 5% of the respondents included the following:

- More time together as family or for other activities; learned things about child that parents would not have otherwise known (13%)
- Help because of special circumstances/safe/affordable (8%)

Only one concern related to online schooling—"Time consuming; tiring to teach, have to move faster than want to"—reached the threshold of 5% of the respondents.

Table 25.

Common Response Categories Among Parental Responses About Online Public School

Category of Response	Number of Parents	Percentage of Respondents
Curriculum—Benefits and Positive Outcomes	72	38%
Instruction and Student Learning—Benefits and Positive Outcomes	65	35%
Student Social Skills—Benefits and Positive Outcomes	60	32%
Personal Comments Related to Online Schooling	44	23%
Program Concerns	16	9%

Conclusions

In general, the results of this evaluation suggest that typical, mainstream students enrolled in full-time, online public schools—i.e., students without the kinds of special needs that might result in pulling them out of regular public school classrooms—are *either superior to or not significantly different than* students enrolled in traditional public schools with respect to social skills and problem behaviors. There is also preliminary evidence suggesting that students enrolled in full-time, online public schools might have an advantage in their social skills development if they are highly engaged in activities outside of the school day—including activities involving peer interaction and activities not involving peer interaction. Furthermore, the results indicate parent perceptions of important benefits to online public schooling, related to academics and other aspects of their children's education. These and other findings are discussed in detail below.

Social Skills

Results across all *SSRS* measures indicate that in most categories, social skills of students enrolled in full-time, online public schools were *either significantly higher or not significantly different* when compared to national norms.

On all three sets of measures (parent ratings, student self-ratings, and teacher ratings), the total sample of full-time, online public school students scored *either significantly higher or not significantly different* when compared to the national sample for the elementary grades on both the Total Scale and each subscale, with the exception of the student self-rating score for Self-Control, which was significantly *lower* than the national sample. Results comparing the total sample of full-time, online public school students with the total national elementary sample are particularly noteworthy, in light of the exclusion of handicapped students from the *SSRS* national norms for the total elementary sample but *not* from specific grade/gender *SSRS* norms. The total elementary *SSRS* sample is thus more directly comparable to the total full-time, online student sample for this study, which excluded students who were identified by their schools as emotionally handicapped, behaviorally handicapped, severely mentally handicapped, or autistic, in order to represent the equivalent of regular, mainstream students.

Notwithstanding this difference in group composition, the pattern of findings for the grade/gender subgroups was similar to findings for the whole-group comparison across elementary grades, as reported below.

Parents of students in full-time, online public schools rated their children *significantly higher* than national norms on social skills in every grade/gender category. This was true for both the Total Scale and each subscale, with two exceptions: Cooperation for 6th grade females (which was not significantly different), and Assertion for 6th grade males (which was significantly lower).

Similarly, self-ratings of students in grades 4 and 6 who were enrolled in full-time, public skills were *significantly higher* than national norms on social skills in every grade/gender category. This was true for both the Total Scale and each subscale, with the exception of the Self-Control subscale, which was *significantly lower* for every grade/gender category, and Assertion for 6th grade males, which was not significantly different.

However, the only significant difference in teacher ratings of social skills was in the Self-Control subscale, which was *significantly higher* for online students.

One possible explanation for the difference between parent ratings and teacher ratings might be rater bias on the part of the parents. Parents of online public school students might have a vested interest in seeing their children as socially skilled, given the parents' choice of a non-traditional school environment and their own active involvement in their children's schooling. However, the similarity between parent and student ratings tends to argue against parent bias.

In summary, compared to national norms:

- On the Social Skills Total Scale, students in full-time, online public schools were rated significantly higher both for the total student sample and in every grade/gender category, both in the parent ratings and in the student self-ratings. However, the teacher ratings for the total student sample were not significantly different.
- On the Cooperation Subscale, students in full-time, online public schools were rated significantly higher both for the total student sample and in every grade/gender category, both in the parent ratings and in the student self-ratings—with the exception of parent ratings for 6th grade females, which were not significantly different. The teacher ratings for the total student sample were also not significantly different.
- On the Assertion Subscale, students in full-time, online public schools were rated significantly higher both for the total student sample and in every grade/gender category, both in the parent ratings and in the student self-ratings—with the exceptions of parent ratings and student self-ratings for 6th grade males, which were not significantly different in the case of student self-ratings, and which were significantly lower in the case of parent ratings. The teacher ratings for the total student sample were not significantly different.
- On the Responsibility Subscale, students in full-time, online public schools were rated significantly higher both for the total student sample and in every grade/gender category, both in the parent ratings and in the student self-ratings. However, the teacher ratings for the total student sample were not significantly different.
- On the Self-Control Subscale, students in full-time, online public schools were rated significantly higher both for the total student sample and in every grade/gender category in the parent ratings, and in the teacher ratings for the total student sample. However, the student self-ratings on the Self-Control Subscale were significantly lower than the national sample, both for the total student sample and for all of the grade/gender categories.

Contradictory Findings Regarding Self-Control

The findings related to the Self-Control *SSRS* subscale were contradictory. As noted above, in addition to being rated significantly higher by parents of full-time, online public school students (compared to national norms), this was also the single category that was rated significantly higher by teachers for online students. Additionally, this was the single subscale that was significantly higher in parent ratings for students who had been enrolled in full-time, online public schools for more than a year, as opposed to those who had been enrolled for a year or less—suggesting that Self-Control may be associated with length of time enrolled in online public schools.

In contrast, online student self-ratings for self-control were significantly *lower* than national norms for every grade/gender category (grades 4 and 6 females, grades 4 and 6 males).

Problem Behaviors

Results across all *SSRS* measures found that in all categories, problem behaviors of students enrolled in full-time, online public schools were *either significantly lower or not significantly different* when compared to national norms.

On both sets of measures (parent ratings and teacher ratings), the total sample of full-time, online public school students scored *significantly lower* when compared to the national sample for the elementary grades on both the Total Scale and each subscale. As noted above under Social Skills, results comparing the total sample of full-time, online public school students with the total national elementary sample are particularly noteworthy, because the total elementary *SSRS* sample excludes specific special populations and is thus more directly comparable to the full-time, online student samples for this study. (As noted previously, special populations were *included* in the specific grade/gender *SSRS* norms.)

Notwithstanding this difference in group composition, the pattern of findings for the grade/gender subgroups was similar to findings for the whole-group comparison across elementary grades, as reported below.

Parents of students in full-time, online public schools rated their children *significantly lower* than national norms on problem behaviors in almost every grade/gender category. For 2nd graders of both genders and for 4th and 6th grade females, this was true for both the Total Scale and each subscale. For 4th grade males, this true for both the Total Scale and each subscale except Hyperactivity (which was not significantly different). For 6th grade males, the Problem Behaviors subscales and Total Scale were not significantly different.

Similarly, teacher ratings were *significantly lower* for full-time, online public school students, compared to national norms, on problem behaviors for both the Total Scale and each subscale.

The *SSRS* Student form does not include self-ratings of problem behaviors.

In summary, compared to national norms:

- On the Problem Behaviors Total Scale, students in full-time, online public schools were rated significantly lower in the parent ratings both for the total student sample and in every grade/gender category except for 6th grade males, and were also significantly lower in the teacher ratings for the total student sample. The parent ratings for 6th grade males were not significantly different.
- On the Externalizing Subscale, students in full-time, online public schools were rated significantly lower in the parent ratings both for the total student sample and in every grade/gender category except for 6th grade males, and were also significantly lower in the teacher ratings for the total student sample. The parent ratings for 6th grade males were not significantly different.
- On the Internalizing Subscale, students in full-time, online public schools were rated significantly lower in the parent ratings both for the total student sample and in every grade/gender category except for 6th grade males, and were also significantly lower in the teacher ratings for the total student sample. The parent ratings for 6th grade males were not significantly different.
- On the Hyperactivity Subscale, students in full-time, online public schools were rated significantly lower in the parent ratings both for the total student sample and in every grade/gender category except for 4th grade males and 6th grade males, and were also significantly lower in the teacher ratings for the total student sample. The parent ratings for 4th grade males and 6th grade males were not significantly different.

Time Enrolled in Full-Time, Online Public Schools

There were *no significant differences* in parent ratings of either social skills or problem behaviors based on time enrolled in full-time, online public schools, with the single *exception* (noted above) of the *Self-Control* social skills subscale, which was *significantly higher*. This is preliminary evidence suggesting that time spent in the online public school might not have a substantial impact on children's social skills and problem behaviors, either positive or negative—with the exception of a possible positive impact on self-control.

We caution that because this study did not include pretesting and posttesting, it should not be relied upon as evidence of causality between enrollment in full-time, online public schools and either social skills or problem behaviors, or lack thereof.

However, if time spent in the online public school does not have a substantial impact on children's social skills and problem behaviors, differences in parent ratings between full-time, online public school students and national norms (as described in the preceding subsections) might be due to (a) other influences such as family relationships and social experiences outside of school hours, or (b) preexisting differences between the two groups (i.e., prior to student enrollment in online public schools).

On the other hand, IESD notes the perception of many parents (more than 35% for each category) that their child's attitudes and behavior had improved since their child began full-time, online public schooling, in a variety of areas that might reflect or impact social skills and problem behaviors, including:

- Self-esteem (62.6% of responding parents)
- Attitude toward school and schoolwork (60.9%)
- Relationship with parents (59.3%)
- Relationship with teachers and other adults (53.8%)
- Child's behavior at home (48.0%)
- Behavior with other children (40.7%)
- Ability to make friends (37.7%)

Taken together, these findings suggest an alternative possibility: that full-time, online public schooling may have a positive impact on students' social skills and a negative impact on problem behaviors, but that these impacts may happen in a timeframe that is less than a full academic year. Additional research, including pretest-posttest comparison, might help to clarify this issue.

Parent Reasons for Enrollment in Full-Time, Online Public Schools

In general, the most frequently identified parent reasons for choosing online public schools were about achieving positive outcomes related to parent/family involvement in learning, as opposed to "fixing" problems with either the child or the school system. Each of the reasons related to parent/family involvement in learning was chosen by more than 60% of the responding parents.

However, a sizeable minority—more than one-third of the responding parents—expressed child-focused concerns related to differentiating instruction to meet specific student needs.

The significant negative correlation between "Child Concerns" as reasons for enrolling students in full-time, online public schools and the SSRS Parent form Social Skills total scores suggests that for a subset of students, reasons for enrolling in online public schools might be linked to pre-existing problems related to social skills. Additional research might shed more light on this issue.

Student Activities Outside the School Day

Responses by parents of students enrolled in full-time, online schools documented a broad range of activities outside the school day that most of their children engaged in at least once a week. A majority of these children participated in one or more activities involving peer interaction at least once a week. A majority also engaged in one or more activities not involving peer interaction at least once a week.

Both activities involving peer interaction and those *not* involving peer interaction were significantly correlated both to the Total Social Skills Scale and to all but one of the Social Skills subscales for students enrolled in full-time, online public schools. The single exception was the Self-Control subscale, which was *not* significantly correlated to activities not involving peer interaction, but was significantly correlated to activities involving peer interaction. While correlational findings do not indicate causality, this finding suggests that involvement in activities outside the school day—both involving peers and not involving peers—may be associated with students' positive social skills.

As noted in the Literature Review, some concern has been expressed that students enrolled in online public schools may suffer from a lack of opportunities for socialization, and consequently might fail to develop important social skills. IESD speculates that online students' regular involvement in a wide range of activities outside the school day, as documented in this study, may help to mitigate against the reduced opportunity for

face-to-face socialization during the school day—thus helping to account for this study's primary finding that online students' social skills were at least as strong as those of students in traditional schools.

Experiences with Online Public Schools

Parent perceptions of their families' experiences with full-time, online public schools were overwhelmingly positive.

Of the 14 categories of outcomes measured on PIQ Question 5, a majority of the parents perceived improvement in 11 categories during the time their children were enrolled in full-time, online public schools. Of the 3 remaining categories, more than 35% of the parents perceived that their children's situation had "gotten better," while 49.8% or more perceived "no change" in their children's situation.

In contrast, the percentage of parents who perceived negative change related to these outcomes ranged from 0% to 6.2%.

Similarly, in responses to the open-ended question on benefits, disadvantages, and challenges of full-time, online public schooling, a preponderance of the most common categories and themes related to benefits and positive outcomes from full-time, online public schools.

Limitations of This Study

This is a single evaluation research study focusing on the social skills and problem behaviors of elementary students attending full-time, online public schools and, by itself, does not constitute a body of evidence.

This evaluation followed a posttest-only design. The students included in this study were not assessed *before* their initial enrollment in an online public school. Therefore, it was not possible to measure *changes* in social skills or problem behaviors related to the students' experience in online public schools.

Given that enrollment in online public schools is by parent choice, it was not feasible to design a random assignment control group experiment. As a practical alternative, in this study, the students enrolled in full time, online public schools were compared to national norms for the *SSRS*. Because of this limitation plus the posttest-only design (discussed above), the results of this study cannot be used to draw conclusions about *causality*. In other words, the data presented here do not constitute direct evidence of the *impact* of online public schooling on social skills and problem behaviors. However, the results of this study did not reveal negative social characteristics or problem behaviors associated with participation in online public schooling.

Fewer than 60 students were assessed by teachers who completed the *SSRS* Teacher form, to ensure that this task was not unduly burdensome for the participating teachers. Inclusion of teacher assessments was for the purpose of triangulating the analysis by providing several sources of data about the students (i.e., the assessments by teachers in addition to assessments by parents and students). However, the sample of students assessed by teachers was too small for analysis by grade/gender categories.

Finally, Question 4 on the Parent Information Questionnaire (PIQ) yielded valuable information about the activities that elementary students attending full-time, online public schools engaged in outside the school day—activities involving peer interaction and activities not involving peer interaction—and their relationship to social skills. However, because there are not national norms for the PIQ (which was developed by the researchers), it was not possible to use the responses to Question 4 as a basis for comparing online public school students to students attending traditional schools in terms of frequencies of different kinds of out-of-school activities.

Recommendations for Future Research

Experience from this study suggests that experimental or quasi-experimental research designs featuring a comparison group involving students from traditional schools would be difficult to implement. However, longitudinal research that tracks students' social development from the time of initial enrollment in full-time, online public schools until students exit the online schooling could help to establish whether students' social skills change over time. Preliminary planning for such follow-up research is currently underway.

Additional research could also be conducted utilizing elements of the Parent Information Questionnaire, developed for this project, with different student populations, in order to establish norms for various groups and sub-groups in areas related to extent of students' extracurricular activities both involving and not involving peer interaction. Eventually, these norms could help determine whether students in face-to-face classrooms typically engage in such activities more frequently than full-time, online public school students, less frequently, or at similar levels of frequency.

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4. How often does your child participate in each of the following? (Note: Whenever “other children” are mentioned in the list below, please don’t count the activity if the only other children are your child’s brothers and sisters.)

Activity	More than once a week	About once a week	2-3 times a month	Once a month or less	Never
Sports that involve other children (e.g., team sports, competitions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Individual exercise or athletic activities that <i>don't</i> involve other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group performance activities (choir, theater performance, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Classes or lessons with other children (e.g., dance, art, martial arts, group tutoring)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Classes or lessons that <i>don't</i> involve other children (e.g., piano lessons, one-on-one tutoring)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educational events with other children (e.g., group museum or library visit, spelling bee, science workshop)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educational events that <i>don't</i> involve other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Children’s clubs and organizations (e.g., Boy/Girl Scouts, 4H, church groups)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Religious services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Religious/cultural classes or schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing with other children at someone’s home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School-organized social events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other group social events and “fun” activities (e.g., birthday party, get-together at a park)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreational activities at home that <i>don't</i> involve other children (e.g., reading, single-player video games, watching television)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volunteer work with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Part-time job or paid work outside the home (e.g., mowing lawns, newspaper delivery)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephone conversations with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internet chatting, or exchanging electronic messages with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

