

**TOWSON UNIVERSITY
OFFICE OF GRADUATE STUDIES**

**EXAMINING IMPROVEMENT OF PARENTAL MANAGEMENT OF CHILDREN'S
EDUCATIONAL INFORMATION USING TECHNOLOGY-BASED INFORMATION
MANAGEMENT SOLUTION**

By

Theresa Matthews

A dissertation

Presented to the faculty of

Towson University

in partial fulfillment

of the requirements for the degree

Doctor of Science

Department of Computer and Information Sciences

**Towson University
Towson, Maryland 21252**

August, 2018

**TOWSON UNIVERSITY
OFFICE OF GRADUATE STUDIES**

DISSERTATION APPROVAL PAGE

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has been approved by the thesis committee as satisfactorily completing the dissertation requirements for the degree Doctor of Science.



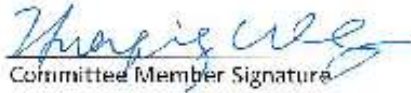
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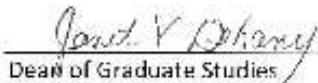
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ACKNOWLEDGMENT

Thank you to parents who took time from their busy schedules to participate in the surveys and user studies. I know that each parent's time is precious and I appreciate the hours they sacrificed for the benefit of this research. I am grateful to the experts for sharing their knowledge, experience and recommendations in the area of education.

Thank you to my dissertation committee members, Dr. Kathy Wang, Dr. Gabriele Meiselwitz and Dr. Ziyang Tang. Your input and time spent reviewing and providing feedback on this research are invaluable. I would like to thank Dr. Ying "Joy" Zheng and Dr. Zhijiang Chen for their help creating the portal. I would especially like to thank my advisor, Dr. Jinjuan Heidi Feng, for her mentorship, guidance and support throughout this entire process. She has taught me more than I could possibly give her credit for here.

Thank you to my employer for providing a program to enable employees to attain higher degrees. I would like to thank my family. Their love and encouragement enabled me to persevere when I began to doubt myself. I would like to express my gratitude for my loving and supportive husband, Jamie, and my two daughters, Ryan and Cameron, who always inspire me to aim higher. Finally, I would like to praise and thank God for the ways He made and doors He opened to make this accomplishment possible.

ABSTRACT

EXAMINING IMPROVEMENT OF PARENTAL MANAGEMENT OF CHILDREN'S EDUCATIONAL INFORMATION USING TECHNOLOGY-BASED INFORMATION MANAGEMENT SOLUTION

Theresa Matthews

Parents and caregivers need to process large volumes of information regarding their children's education. Effective parental management of this information is critical for parents to actively participate in their child's educational development. However, existing educational information management tools are designed from the perspective of the educator or student, not the parent.

This dissertation identifies how parents currently manage their children's educational information and areas where challenges are perceived and/or realized for parents managing information regarding their children's education through expert interviews and a survey. In order to address challenges that have been identified through the interviews and the survey, a MyStudentScope (MSS) Web Portal was designed with the integration of proposed solutions and recommendations from subject matter experts in education. In order to ensure that the system can fully meet users' needs, a user study was conducted investigating participants' perceptions of MyStudentScope. Because parents tend to use paper-based methods to archive and retrieve information regarding their children's education, the task performance through the use of the MyStudentScope web portal was compared to the paper-based method. Situations parents/caregivers may

encounter related to their children's education and extracurricular activities were simulated during the study. We present findings based on analysis of user responses and provide recommendations for improvement of the MyStudentScope design.

We proposed a framework that depicts a model of interaction between informed parents and proactive educators to provide improved outcomes in student educational development. A web portal, MyStudentScope, was designed with the integration of proposed solutions and recommendations from subject matter experts in education, needs and challenges expressed by parents and the Enhanced Parental Information Management Model. Study results indicate that MyStudentScope offered significant improvement in parents' use of education information for their student in many areas. User responses show that further improvements in effectiveness and efficiency are anticipated as the user becomes more familiar with MyStudentScope.

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CHAPTER ONE

Introduction

The involvement of parents has been widely discussed as a major contributing factor in the development of children. Research evidence shows children whose parents are involved in their learning perform better in school, both academically and behaviorally (Patrikakou, 2008). In Carpe Data, Van Kleek, et. al suggested that a “common goal for the release of [open data made available by the government] has been to provide end users with the ability to make more informed decisions pertaining to their health, wealth, and well-being” (Van Kleek, Smith, Packer, Skinner, & Shadbolt, 2013). The motivation to provide information to parents regarding their children is similar. Because the importance of parent involvement in their children’s development is recognized, parents are often overloaded with their children’s medical, educational, social, extracurricular and financial information. The idea is that parents will use the provided information to make informed decisions regarding the health, education, finances, etc. of their children.

Parents and caregivers are inundated with information regarding their children’s education received verbally, on paper and digitally via a variety of methods. Parents must be able to optimize their use of the information so that they are able to effectively participate in their children’s educational development. However, they can be overwhelmed by available information due to jargon, volume and other factors. Over time information can get lost or become extremely difficult for parents to recall or retain. These issues can degrade the quality of parents’ decision making with respect to their

children's education (Pratt, Unruh, Civan, & Skeels, 2006). These are common reason for people to turn to technology for help with managing data. Unfortunately, technical solutions to assist parents in the management of information regarding their children seem to be lacking.

Existing educational information management tools are designed from the perspective of the educator or student, not the parent. Web-based software applications used by school districts allow parents to keep track of their students' academic progress for the school year, but do not effectively allow parents to compare progress across years particularly if the child has changed school districts, integrate educational information from other sources or organize information in ways that may better meet the needs of the parent. For these reasons, parents find themselves interfacing with numerous data sources or tools to maintain a current understanding of their children's academic progress. For one student in a single class a parent may need to keep track of notes and assignments sent home with the child, phone calls, emails and/or text messages from the teacher, information posted on the school's educational information management site and notices sent via other apps used by the teach to communicate with students and parents on a daily basis. The task of managing educational information is compounded by parents having more than one child, children having more than one teacher/educator, and each educator using multiple communication methods. These factors make it extremely difficult for parents to effectively and efficiently manage the information received, make necessary decisions and take appropriate actions based on the information.

Other barriers to the use of technology to assist parents in better managing information regarding their children's education are security and privacy concerns. Some information kept in education management systems could be misused and lead to identity theft due to problems in access control. If records or concerns regarding a child's behavioral or health issues became accessible by the wrong person, the child could be wrongfully mistreated or marginalized. Parents may be cautious about saving private details about their child in a system that they do not trust or with which they are unfamiliar. This concern may dissuade them from using technology designed to help them manage their children's educational information. Most parents lack the time or expertise to develop a system of their own. Data stored on personal devices or in a system not owned by the parent could be subject to a data security breach, the unauthorized or unintentional exposure, disclosure, or loss of sensitive personal information.

To address the needs of parents in managing information regarding their children's education, we conducted research to identify areas where challenges are perceived and/or realized, interviewed experts to gain an understanding for the types of information parents should keep and for what purpose and examined improvement of parental management of children's educational information using a technology-based information management solution. The research tries to address the following questions:

- Will the technology-based information management solution increase parents' effectiveness in monitoring the academic progress of their children?

- Will the technology-based information management solution increase parents' effectiveness in retrieving saved educational information?
- Will the technology-based information management solution increase the effectiveness of parent-educator communication initiated by the parent or from the parents' perspective?

Through dissertation studies we worked closely with experts in education, parents of school-aged children and parents of young children. Data was collected to gain insight on the challenges with managing and using educational information from the parent's perspective and how to alleviate some of those challenges. The following activities were completed as part of this dissertation research:

1. Analysis of current methods by which parents receive and manage information regarding their children's education. The examination was conducted through two user surveys. The results of the first survey confirm that parents must manage large volumes of information regarding their children and few information management tools are used to assist. Per the second survey, parents receive information verbally in person or over the phone, in the mail or other hardcopy means and electronically via email and school sites but the majority of them rely on paper-based methods for archive. No information management tools, outside of those provided by the schools, are used by parents to manage educational information. Although the perceived difficulty organizing the data is low as indicated by survey participants, the willingness of the majority of the participants

to spend time each week increasing the effectiveness of their current situation indicates that there is room for improvement.

2. Research the types of information parents should retain regarding their children's education and the purposes for which the information should be used. This information was gathered through expert interviews and literature review. It is recommended that parents document teacher phone calls, keep records of requests for appointments by the parent or teacher, keep copies of school work/assignments especially those with which that parent or teacher has expressed concern, keep copies of any official reports that have been signed and dated, keep children's pre-school portfolios, retain major assessment results, benchmarks, suggestions for improvements from teachers and recommendations for screenings from teachers. This information can be used by parents to identify warning signs for concern and ways to engage educators for maximum benefit for the child's success (Crabtree, 1998) (Wright & Wright, 2008).
3. Analysis of current methods of information management using technology in general and specifically related to information regarding the education of children. This evaluation was conducted through literature review and evaluation of existing tools to manage educational and other types of information. The following concepts were identified as potentially beneficial in improving parental management and use of their children's education information: integrating the acquired data into a centralized collection, developing raw data into actionable data that reveal patterns and relationships and improving data retrieval.

4. Development of the Parental Information Management Model. The eHealth Enhanced Chronic Care Model (eCCM) was chosen to guide the development of a new model that is applicable to parental information management; the Parental Information Management Model. The goal of the Parent Information Management Model is to drive parent activation with respect to their involvement in their children's education.
5. Research technology-based solution. The review of related research, survey results, and recommendations from experts in education were used to construct a prototype tool to assist parents in the management of information regarding their children's education. A user study was conducted to gather initial data to determine if such a tool would be useful to parents. The results indicated that such a tool could address the challenges revealed in the prior research.
6. Preliminary evaluation of MyStudentScope. The results of the pilot study were combined with the prior research to inform the design of MyStudentScope, a web portal for parental management of information regarding their children's education. A user study was conducted to compare the efficiency and effectiveness of task completion through use of MyStudentScope versus paper-based methods by simulating situations parents/caregivers may encounter related to their children's education and extracurricular activities. The study provided input for the modification and improvement of MyStudentScope.
7. Modification of MyStudentScope. The MyStudentScope web portal was modified based on the findings of the pilot and preliminary studies.

8. Comprehensive evaluation of MyStudentScope. A user study was conducted investigating participants' perceptions of MyStudentScope. The twenty-two (22) participants included both parents who have used a school-provided education management system and parents of younger children who may use a school-provided education management system in the future. Data was collected about performance of task completion using MyStudentScope versus paper-based methods, user preferences and potential improvements for MyStudentScope.

This dissertation is organized in ten chapters. Chapter two provides a summary of related research in the areas of Personal Information Management (PIM), Knowledge Management (KM), data integration and existing applications and tools relevant to educational information. In chapter three we present our research questions and hypothesis. Chapter four discusses the methods used to gather the existing practices and challenges regarding parental management of educational information regarding their children. Chapter five presents the findings of the pilot study. Chapter six discusses the design of the MyStudentScope web portal. Chapter seven discusses the preliminary study that investigated the effectiveness of the portal and the modifications of the portal based on those findings. Chapter eight provides an in depth analysis of the final MyStudentScope user study. Chapter nine discusses the main findings of the dissertation work, the implications of the findings and the take-home messages for designers, educators, and parents, the limitations of this research and the future work. Chapter ten summarizes the dissertation work and highlights the major contributions.

CHAPTER TWO

Related Research

The management of personal information, whether that of one's self or one's child, shares the same basic requirements. For this reason, research pertaining to Personal Information Management (PIM) was investigated. This chapter presents findings related to PIM and other subject areas potentially relevant to parental management of information regarding their children's education. The subject areas of the reviewed literature and technology can be categorized as PIM and data integration; existing information management systems; theories and approaches and models; parental use of educational resources and student use of technology for organization and learning; and information management by teachers and administrators.

2.1 Personal Information Management and Data Integration

Although PIM is generally concerned with an individual's information, the management of information regarding one's child is similar. As described by Buttfield-Addison et. al, PIM is concerned with the study of the process of information capture, organization and re-finding of information individuals deal with in daily life (Buttfield-Addison, Lueg, Ellis, & Manning, 2012). Although tools and apps exist to facilitate communication between parents and teachers, no tools designed specifically to meet the needs of parents managing their children's information were identified in this research. For this reason, tools used by teachers and other educators were reviewed with the motive that these could be used to model a solution for parents.

Common concepts resonated throughout the literature regarding the characteristics of personal information and basic requirements for PIM tools. Those concepts that are of particular interest are listed below.

- Personal information collections include content in various forms (documents, Web pages, mail, notes, calendars, address books, etc.) (Bruce, Jones, & Dumais, 2004)
- Personal information collections include structures for representing and organizing this information (folder hierarchies, piles, lists, etc.) (Bruce, Jones, & Dumais, 2004)
- Personal information collections include pointers to information (people, links, Favorites, etc.) (Bruce, Jones, & Dumais, 2004)
- Information management systems must seamlessly integrate and correlate information across a variety of media, sources and formats. (Callan, et al., 2007)
- PIMs ensure having the right information in the right place in the right format and of sufficient completeness and quality to meet a current need. (Ma, Fox, & Goncalves, 2007)

The method(s) by which information management tools should meet those functions were not so consistent. Some argued that the development of tools alone could not achieve the desired level of information management functionality, but the key is in standardization. Jones and Anderson proposed standardizing metadata using Extensible

Markup Language (XML) (Jones & Anderson, 2011) (Jones & Anderson, 2012). Karger and Jones discussed five approaches of data unification to meet the information management goal. The approaches are implementing a standard data type, unified presentation, implementing a unified namespace, grouping, metadata standardization, cross-reference and relations. These tie in with Jones and Anderson's recommendation regarding cross-reference and relations as means to support information management (Karger & Jones, 2006).

Still other researchers proposed the use of digital libraries. Per Ma et. al, digital libraries either have relatively stable collections or rigorous routines for adding new documents. The researchers proposed that personal digital libraries must handle changing collection and that storage locations may not be constant. Another difference between traditional digital libraries and personal digital libraries as described by Ma et. al is that traditional digital libraries have control over the data formats it contains, however there can be no limitation on the formats in personal repositories because in most cases the user does not have control over the formats in which data is provided (Ma, Fox, & Goncalves, 2007). Tagging was also presented as an approach for information management (Kazai, et al., 2010). Tagging and metadata standardization are similar, however many of the researchers who proposed tagging did not go as far to recommend standardizing the metadata using XML.

Pratt et. al.'s research regarding personal health information management uncovered challenges related to integrating personal, professional and health-related

information, using integrated information to make health decisions and sharing information while maintaining personal privacy (Pratt, Unruh, Civan, & Skeels, 2006). These challenges are also applicable to parental management of information regarding their children. Parents have access to personal information, like family history and professional information given to them by providers, educators, etc. As mentioned previously, the desire is for parents to use the information they receive to make decisions regarding their children.

Another aspect of PIM is understanding the reasons why people choose to keep information and the methods by which people deem information useful. Oh and Belkin's research presents the forms of information people keep and their reasons for keeping it. Oh and Belkin found that some reasons for keeping personal information were to re-use the information in the future, as a reminder of tasks that need to be performed, to record or create personal archives and to share with others. Depending on the reason the data was kept, people kept the information in paper form, as an electronic file, email, bookmark (for web information) or photographs, either digital or printed (Oh & Belkin, 2011). An excerpt from one of the tables from Oh and Belkin's paper is presented below.

Table 2-1 Reasons for Keeping Information in Different Formats (Oh & Belkin, 2011)

	Paper	Electronic File	Email
To re-find/re-access information	✓	✓	✓
To record memories/to create archive	✓		✓
To remind tasks	✓	✓	✓
To share with others/to show to others	✓		
To express and reinforce identities	✓		
To preserve the original format	✓		
To allay fears of loss		✓	
To manage tasks/time/info/contacts/schedules			✓
To make backups			✓

Jones, Dumais and Bruce presented research that showed how users made decisions on what information to keep and what information to leave in place with respect to online data in particular. They provided insight into how users make their keeping and leaving decisions where “keeping” involves downloading or saving the information and “leaving” involves creating or saving a link to the data in place at another time. The researchers were surprised to find that even when users used bookmarks or favorites, they were still more likely to use a search engine to find the information again instead of referring to the saved link (Jones, Dumais, & Bruce, 2002).

As parents acquire information regarding the education of their children via different means, the ability to integrate data is critical to their management of such information. PIM can be accomplished through technical and non-technical means as discussed by Trullemans, et. al (Trullemans & Signer, 2014). Their study looked at organization and re-finding strategies in physical and digital space. The study did not find

any correlations or dependencies between respondents' digital organization and retrieval method and their physical organizational and retrieval methods. The lack of correlation between methods that work well in digital space versus physical space may have contributed to the transitional issues and should be considered.

In *Carpe Data*, Van Kleek, et. al present an investigation of extending PIM tools to support users' integration of the open data available on the Internet. They referenced *The Semantic Web Revisited* when stating that a "common goal for the release of [open data made available by the government] has been to provide end-users with the ability to make more informed decisions pertaining to their health, wealth, and well-being" (Van Kleek, Smith, Packer, Skinner, & Shadbolt, 2013). However, Van Kleek et. al also identified the issue that the wealth of available information cannot be used as intended to influence decisions or actions if the data cannot be accessed, organized, processed and re-accessed in ways that are meaningful to the user. Data integration is challenging because it involves combining data and/or "data systems that were developed for slightly (or vastly) different [...] needs" (Van Kleek, Smith, Packer, Skinner, & Shadbolt, 2013). Regarding their children's education, parents must manage information from a variety of sources including, but not limited to, teachers, administrators, counselors, advocates and tutors. Each of these may have a different method for conveying the information to parents. Those methods may or may not align with each other or with the parent's preferred method(s) for receiving educational information about their children.

2.2 Existing Information Management Tools for Parents Related to Education Information

An information management app or website designed to specifically assist parents in managing information of their children was not identified in the searches performed for this review. Therefore, tools to assist persons in managing other types of information were reviewed. Systems and tools used by educators to delivery information to parents regarding their children's education were also reviewed. Medical information management tools were found to be especially relevant because the needs and challenges of an individual managing his/her healthcare are similar to the needs of a parent managing his/her child's educational development.

2.2.1 Medical Information

MyChart is used to access medical records for a particular medical group and/or provider. The tool can output Lucy records, but the output files can only be read by provider systems that use MyChart or Epic Care Everywhere software (Our Lady of the Lake Physicians Group). Lucy is a personal health record that can be linked to or accessed via a variety of medical information systems. A unified MyChart does not exist for patients, or parents of patients, to bring together their medical records from all of their providers.

Per Nourie a Personal Medical Record should include the patient's name, date of birth, blood type, emergency contact, date of last physical exam, date/results of past test and screenings, major illnesses/surgeries with dates, injuries that were treated, allergies,

medications, chronic diseases and history of family illness (Nourie, 2010). A tool that unified all provider information may also need to include provider name and contact information. It would be beneficial if the tool could accept Lucy records because as Dimick states, patients can now have copies of their medical records exported to USB drives and other external media by their providers (Dimick, 2012). Sciberras et al researched how parents prefer to receive medical information about their children with ADHD (Sciberras, Iyer, Efron, & Green, 2010). To interface with a software information management tool, any information received by any non-electronic method would need to be entered by the user.

2.2.2 Social Information

Social information parents may want to manage about their children include photos, calendar events and friends. Scallyroo.com attempts to help parents and children manage their social lives (Scallyroo). Other resources focused on security issues regarding posting your child's personal information on social networking sites. These resources were reviewed to gather information about the types of social information parents like to manage/share. Wee-Web is a social networking site for parents to share information about their children with friends and family members. Bronson, the co-founder of Wee-Web, is quoted as stating, "Protecting a child's privacy isn't about parents restricting what they share, it's about them staying smart about how they share it" (Deutsch, 2010).

Sultan and Miller explored the fact that most young adults now use social media/networking to keep in touch with friends and relatives. They share information about their personalized lives including pictures of and accomplishments of their children. This puts children in a uncharted situation where “a permanent and public story has already been recorded about them before they have a chance to decide whether they want to participate or even whether the narrative is true to their own vision of self” (Sultan & Miller, 2012). They surveyed people about their concerns related to online privacy. The greatest levels of concern reported were related to online credit card use, online banking services and social networks in that order. Sultan and Miller shared the opinion that children are growing up in a society where the sense of being entitled to privacy is devalued. The article concluded with these strong points. “We have a right for our data to not rise up and destroy us. We have a right to create our own narrative about our lives. We have a right to control how much we want the world to know about us. These are fundamental to our personal autonomy. Our children deserve the same protections” (Sultan & Miller, 2012).

2.2.3 Educational Information

An information management app or website designed to assist parents in managing information of their children was not identified in the searches performed for this review. Therefore, it is believed that there is still an opportunity to make a contribution to the creation of such an app or website. The majority of the websites and/or tools found via tool reviews and Google searches can be categorized as one of the following:

- web-based software application used by school districts that allows parents to keep track of their students' academic progress
- web-based school management systems
- learning community management systems that schools use for school and class organization
- apps for teachers to send announcements and other notifications to parents
- apps to organize a group , of volunteers for example, or a particular purpose or event
- apps to manage to-do or checklists

Only one tool found, My IEP Meeting, was specifically designed to assist parents in organizing and gathering information related to the education of their children. As the name implies, the tool was designed to help parents participate in the child's Individualized Education Program (IEP) process by documenting and organizing relevant information between IEP meetings in a way that it can be easily accessed during the meeting or reported to teachers and administrators. The tool allows parents to type notes, record audio and takes pictures. From the overview it could not be determined if the app ingests data from the school's electronic student information system or sources other than manual data entry (Excent, 2014) (Swanson, 2012). The table below lists the tools identified by category.

Table 2-2 Educational Information Management Tools and Applications

Standard Educational Information Management System	Google for Education (Teach.com, 2015), Edmodo (Ponsford, 2015) (Teach.com, 2015), SchoolMAX, Edline, Pupil Asset (Ponsford, 2015)
Teachers Publishing to Parents	Buzzmob (Teach.com, 2015), ClassMessenger (Teach.com, 2015), Mailchimp (Teach.com, 2015), ClassDoJo (Ponsford, 2015), Remind/Remind101 (Klein, 2013) (Ponsford, 2015) (Teach.com, 2015), Animoto (Klein, 2013), Educreations (Klein, 2013), What Did We Do Today (WDWDT) (Klein, 2013), Aurasma (Klein, 2013), Bambizo (Ponsford, 2015)
Parent-driven Information Management	My IEP Meeting (Excent, 2014) (Swanson, 2012)
To-do / Checklist	IEP Checklist (Swanson, 2012), IzzyTodo, SquareLeaf, Wipee List

Many schools have on online tools that parents can use to access their children's educational information. Prince George's County Public Schools (PGCPS) in Maryland uses SchoolMAX. SchoolMAX allows authorized caretakers to log into SchoolMAX from any computer with an Internet connection and view the child's student information, including current attendance records and assignment scores. PGCPS version of SchoolMAX allows parents or guardians to view a child's educational records for as long as they are a part of PGCPS. Parents are able to look back at previous school years, view grades, tardiness, progress reports and report cards.

There are two tabs in SchoolMAX where parents can view grades. The Gradebook tab shows grades for the current quarter and the Grades tab "shows the final grades from each course sorted by academic year" (see Figure 2-1). SchoolMAX also has tabs for attendance, schedule, student course choices, graduation requirements, discipline,

transportation, fees and profile details (see Figure 2-2). All of the information is provided in tabular format, so it is not necessarily easy to compare data across time periods.

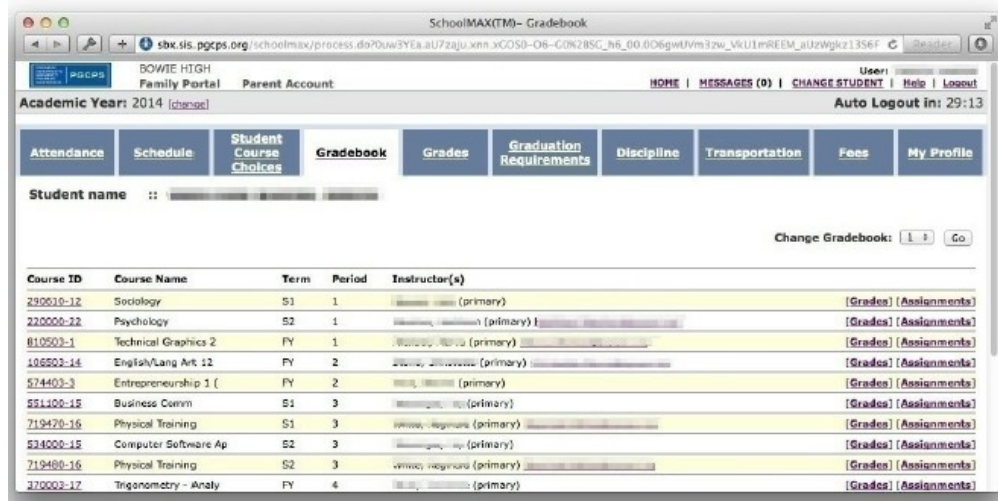


Figure 2-1 PGCPS SchoolMAX Student Selection Page (Prince George's County Public Schools, 2015)

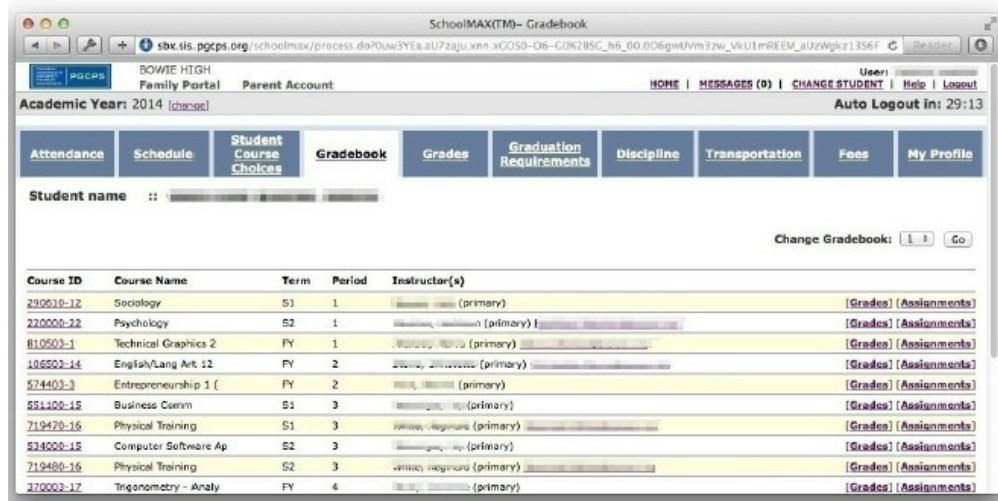


Figure 2-2 PGCPS SchoolMAX Gradebook Page (Prince George's County Public Schools, 2015)

ParentCONNECTxp is the electronic student information system used by Anne Arundel County Public Schools (AACPS). ParentCONNECTxp has pages for student information, assignments, report card grades, attendance and school information. Like SchoolMAX, it also allows parents to view information regarding each child enrolled in the school system using a single login.

The grades views are similar to those available in SchoolMAX. The attendance page, however, has a calendar view that uses icons to indicate the status of the absences. ParentCONNECTxp also allows parents to enable notifications to be sent to them via email if an unexcused absence, tardy, missing assignment or failing assignment event occurs (see Figure 2-3). The notifications are summarized in one daily email.

The majority of the resources found to discuss educational related information management needs of parents related to children with learning disabilities. However, much of the recommendations are applicable to children who do not require learning assistance. The educational information parents should manage as recommended by the Wrights and Crabtree includes provider information, IEP, evaluations by the school system, medical records, progress reports and report cards, standardized test results, notes on your child's behavior or progress, correspondence with teachers, special education administrators and evaluators, documents relating to discipline and/or behavioral concerns and samples of schoolwork (Crabtree, 1998) (Wright & Wright, 2008). The Wrights also recommended documenting the following information about each

file/record maintained: date, author, type and significance. In a software tool this information may be recorded as metadata.

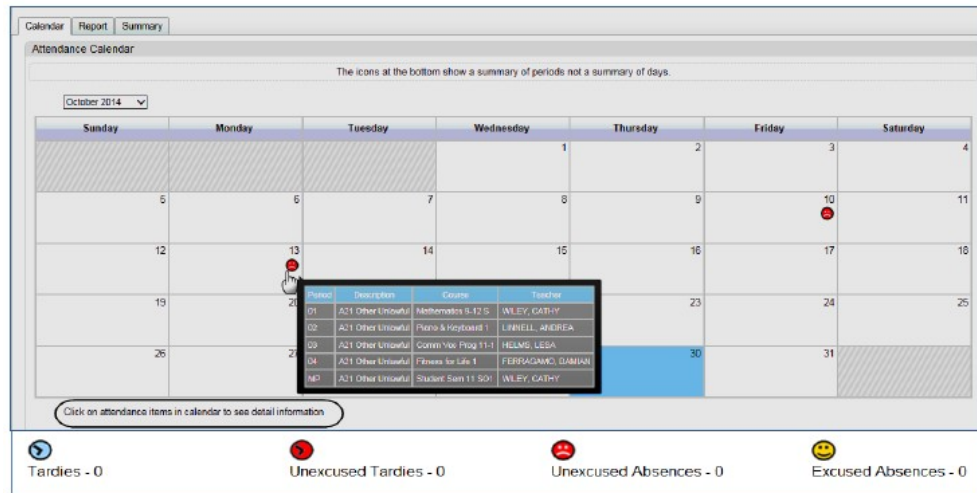


Figure 2-3 AACPS ParentCONNECTxp Attendance Page (Anne Arundel County Public Schools, 2015)

Tools like SchoolMAX and ParentCONNECTxp enable parental access to their children's educational information online. Teachers are usually required to update the information on the sites weekly, at a minimum. Reviewing this information with more frequency than parents had the ability to review their children's educational information were provided via report cards and progress reports only could enable parents to influence change in derogatory behavior or address learning challenges and see the results of their involvement sooner. Unfortunately, as documented by Roshan et. al, information that is provided too frequently may not be reviewed by parents because they may be overwhelmed by the volume of available information or they simply do not have time to access the information in accordance with the frequency with which it is provided (Roshan, Jacobs, Dye, & DiSalvo, 2014).

School websites like SchoolMAX and ParentCONNECTxp are most likely the “super sites” parents use to manage and receive information regarding their children’s education. It is assumed that most parents have access to such a site and the information on the site is structured at some level. More information would be needed to determine how other educators (ex. tutors and counselors) provide information to parents. As of 6/27/2015, there are 620 APIs listed in the Education category on Programmable Web (<http://www.programmableweb.com/apis/directory>). Further review is needed to determine if the APIs used for the Anne Arundel County and Prince George’s County school system websites are documented on the site. If the information is publicly available on this or another site, it could be used as a basis for identifying common data types and categories that can be standardized in a data integration and information management solution for parents.

According to Piper et. al., in some educational communities there has been a shift “from measuring development through standardized tests to conducting observational reports that track development” (Piper, D'Angelo, & Hollan, 2013). A similar style of reporting, or structuring of data, may be useful in helping parents not only manage information regarding their children’s education, but also track development. Those reports are underpinned by documentation that may include “samples of a child’s work at several different stages of completion: photographs showing work in progress; comments written by the teacher or other adults working with the children; transcriptions of children’s discussions, comments, and explanations of intentions about the activity; and comments made by parents” (Piper, D'Angelo, & Hollan, 2013). This information is

documented in a portfolio. To build the portfolios teachers gather three types of information: written observations, photos and work samples. These types of information that are collected align with the types of information Ms. Dennis, one of the subject matter experts interviewed, recommends that parents retain regarding their children's education.

2.3 Theories and Approaches

The term Knowledge Management (KM) is generally applied to information related to an organization or company. However, KM theories may also be applicable to personal information management (PIM). Per Wah, as cited by Smith, "knowledge management includes four areas: managing tangible intellectual capital [...]; gathering, organizing and sharing the company's information and knowledge assets; creating work environments to share and transfer knowledge among workers; and leveraging knowledge from all stakeholders to build innovative company strategies" (Smith, 2001). Challenges in the area of parental management of their children's educational information may be addressed by a technical solution that enables knowledge codification. Although the below description of knowledge codification by Baskerville and Dulipovici refers to the availability of knowledge to other in an organization, it can be applied to a parent's codification of knowledge for his/her own future use.

Knowledge codification involves the explicit organizational processes of locating knowledge sets, facilitating knowledge articulation, and enabling access to this knowledge (Sanchez, 1997). The objective is to put organizational knowledge into a form

that is accessible to those who need it (Davenport & Prusak, 1998). This process is not simple as organizational knowledge is a ‘phenomenon in process’ and needs to be extracted in its cultural and organizational context (Patriotta, 2004). Knowledge codification involves the meticulous discovery of critical tacit knowledge that the organization has created, learned, or organized. Once discovered, this knowledge must then be articulated in a form that can be absorbed by others in the organization that could use the knowledge. Further, there must be a means by which those in need of the knowledge can discover its existence as reposed, articulated knowledge (Bakerville, 2006).

Bakerville and Dulipovici refer to knowledge codification as a reuse strategy or method by which a company, or person, ensures that information is available for later use if needed. According to Davenport et.al, as cited by Bakerville, a standard, flexible knowledge structure is a characteristic of a successful knowledge management system (Bakerville, 2006). Figure 2-4 shows the relationship between knowledge management theories. Areas that are potentially applicable to parents’ management of their children’s information have been highlighted.

		These theories of KM																			
		K Economy	K Net. & Clusters	K Assets	K Spillovers	Continuity Management	Dumbsizing	K Alliances	K Strategy	K Marketplace	K Capability	K Culture	K Organizations	K Creation	K Codification	K Transfer/Reuse	K Infrastructure	K Architecture	K Discovery	K Equity	Qualitative Frameworks
These theories of KM	K Economy	x	x		x							x		x							
	K Net. & Clusters		x		x		x	x	x		x	x		x		x					
	K Assets	x		x						x			x	x			x	x		x	
	K Spillovers	x			x						x	x	x	x	x	x					
	Continuity Mgmt					x			x					x		x					x
	Dumbsizing	x					x					x				x					
	K Alliances		x	x				x	x		x		x	x		x					
	K Strategy	x	x	x		x	x	x	x		x	x	x	x	x	x	x	x	x	x	x
	K Marketplace			x					x	x			x	x		x					
	K Capability		x				x		x		x	x	x	x		x	x			x	
	K Culture			x				x	x			x	x	x		x	x			x	
	K Organizations	x	x	x				x	x		x	x	x	x		x	x			x	
	K Creation	x		x	x			x	x		x	x	x	x	x	x	x	x			x
	K Codification											x			x	x	x	x			
	K Transfer/Reuse			x	x			x	x		x	x	x	x	x	x	x	x	x	x	x
	K Infrastructure			x					x				x	x	x	x	x	x	x		
	K Architecture			x								x	x	x	x	x	x	x	x		
	K Discovery													x	x	x	x	x	x		
	K Equity	x							x			x	x							x	
	Qual. Frameworks			x					x		x	x		x		x	x			x	x
	Performance Indices			x					x					x		x	x		x	x	x

Figure 2-4 Bridges among KM Theories (Bakerville, 2006)

In his paper, Bartholomaei describes the economist, business and management, and critical perspectives on the codification of knowledge. In his description of the economist perspective, he explained the emphasis on the potential of codified knowledge. The economist puts knowledge in a category of “known-knowns”, where although the information may have been created or used for one purpose, it can still provide benefit when solving similar problems at another time (Bartholomaei, 2005). This is similar to Smith’s description of explicit knowledge which, once codified, “can be reused to solve

many similar types of problems or connect people with valuable, reusable knowledge” (Smith, 2001). This perspective aligns with the goals of assisting parents in the management of information. The thought is that if the information, and knowledge associated with it, are stored effectively, the information can be reused in the future to assist parents in addressing new tasks and/or decisions.

Bartholomaei’s critical perspective on the codification of knowledge is consistent with the information Landsdale provides in his paper on the psychology of personal information management. Landsdale states a general problem that categorizing items is challenging, both in terms of deciding which category to use when binning things and later remembering which category was applied (Lansdale, 1988). He reference’s Malone’s piles and describes them as a compensating strategy used to deal with the problems associated with categorization. Knowledge codification processes must be flexible enough to deal with ambiguity between categories.

Tacit knowledge is knowledge that is difficult to write down, visualize or transfer from one person to another. According to Smith, nearly two thirds of company information is tacit knowledge that comes from face-to-face interactions (Smith, 2001). It is logical to assume that a significant portion of the information parents receive regarding their children’s education also becomes tacit knowledge. This could include information received during parent-teacher conferences, during informal conversations with the teacher while picking up or dropping of the student or simply talking to the child about his or her day. Per Smith, systematic knowledge is provided or available via formal

means like print or electronic delivery. This is akin to report cards, progress reports and standardized test results.

The Sense-Making Approach is based on Brenda Dervin's work in communications. In her paper *The Sense-Making Approach and the Study of Personal Information Management*, Spurgin gives an overview of Dervin's approach and proposes that it could be applicable to PIM. In one of her summarizing statements, Spurgin states that, "the process of seeking out and making sense of information is seen as a communicative practice". She offers that in PIM research, "a Sense-Making Approach could help us begin to understand the common types of gaps that people experience that lead them to [attempt to organize their information] and the types of gaps they experience [in the process]" (Spurgin, 2006). The surveys and SME interviews described later in this paper are methods used to identify gaps in parental information management. The goal is to use the information as requirements for a technical solution that will, hopefully, address the gaps. Per Dervin, as cited by Agarwal, sense-making is based on the assumption that 1) it is possible to design and implement systems that are responsive to human needs, 2) it is possible for humans to adapt their behavior to use the systems and 3) achieving these goals requires communication-based methodical approaches (Agarwal, 2012).

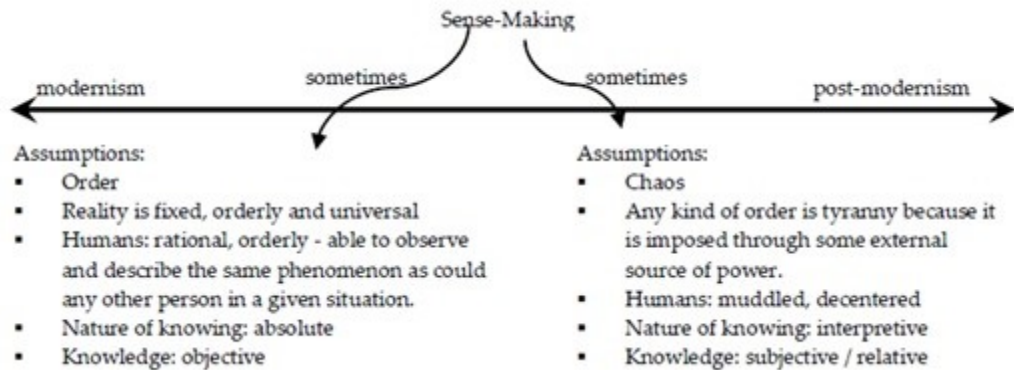


Figure 2-5 Sense-Making Straddling Polarities (Agarwal, 2012)

Based on research regarding the use of technology and the self-management of chronic disease, Perry Gee et. al introduced a revised model, eHealth Enhanced Chronic Care Model (eCCM) to show how eHealth tools can be used to improve patient management of their chronic illnesses. Gee used the Theory Derivation process to create eCCM. It is a process used in nursing by which a parent theory or model is chosen to guide the development of a new model. The Chronic Care Model (CCM) is a framework of an all-inclusive approach to caring for chronically ill patients that supports improved clinical outcomes. eHealth is loosely defined as the promotion of positive health outcomes through the use of technology. A critical part of the eCCM is the continued communication between the patient and the provider as depicted in Figure 2-6.



Figure 2-6 eHealth Enhanced Chronic Care Model Depiction (Gee PM, 2015)

2.4 Educator Challenges Transitioning to Technology

Other sources describe the challenges teachers and administrators face when attempting to transition from paper-based to technology-based solutions to manage information (Bishop, 2002) (Marcu, et al., 2013) (Piper, D'Angelo, & Hollan, 2013) (Turner, 2010). Marcu et. al's paper Why Do They Still Use Paper? Understanding Data Collection and Use in Autism Education summarizes a study on why many autism education programs still use paper to collect student data vice a technical solution. Reasons for why staff members use paper to collect data are data needs are complex and non-standard, immediate demands of the job make data collection challenging and existing technology is inadequate (Marcu, et al., 2013).

Research results associated with this dissertation will be described in greater detail in later chapters, but in this chapter it is worth mentioning similarities between

survey results regarding parents' use of paper to manage their children's information to Marcu et. al's findings as documented in Why Do They Still Use Paper? Understanding Data Collection and Use in Autism Education (Marcu, et al., 2013). The below table from the paper lists the factors Marcu et. al. determined to affect data collection and use in autism collection (see Table 2-3). Many of the factors and the justifications are likely to be applicable to understanding why paper or nothing at all is used by parents to manage their children's information.

Table 2-3 Six Factors Contributing to Paper Use and Potential Technology Improvements (Marcu, et al., 2013)

Why staff use paper to collect data	1. Data needs are complex and not standardized
	2. Immediate demands of the job interfere with thorough in situ data collection
	3. Existing technology for data collection is inadequate
Why technology could improve sharing and use of collected data	4. Data sheets are idiosyncratic and not useful without human mediation
	5. Improved communication with parents could benefit children's development
	6. Staff are willing, and even eager, to incorporate technology

CHAPTER THREE

Research Question and Hypothesis

Parents and caregivers need to process large volumes of information regarding their children's education. Effective parental management of this information is critical for parents to actively participate in their child's educational development. Existing educational information management tools are designed from the perspective of the educator or student, not the parent. Electronic student information systems used by school districts allow parents to keep track of their students' academic progress for the school year, but do not effectively allow parents to compare progress across years if the student leaves the district, integrate educational information from other sources or in other formats or organize information in ways that may better meet the needs of the parent. There is no existing tool for parents to use to organize educational information regarding their children. The objectives of this research are to complete the following:

- **Objective 1:** Identify how parents are currently managing their children's educational information.
- **Objective 2:** Identify areas where challenges are perceived and/or realized for parents managing information regarding their children's education.
- **Objective 3:** Provide a framework to help parents/caregivers better manage children's educational information.
- **Objective 4:** Design and develop a web portal to aid parents in organizing educational information regarding their children and evaluate the web portal to

determine the level of effectiveness as compared to current methods for parental management of information regarding their children's education.

The purpose of the research is to identify challenges with the way parents currently manage and use information regarding their children's education, introduce a technology-based solution in the form of a web portal designed to mitigate those challenges and compare and evaluate the efficiency of using the web portal to using paper-based methods to complete tasks. Based on the understanding gained through literature review and expert interviews the following research hypotheses were defined.

Rationale for H1: There is no existing tool for parents to use to organize educational information regarding their children and most parents do not have the time or expertise to develop such a structure.

H1: Most parents do not use any structured methods to organize their child's educational information as a whole.

Rationale for H2: Parents currently have to interface with numerous data sources or tools to maintain a current understanding of their children's academic progress. It is difficult for parents to track progress across several sources.

H2: A technology-based educational information management solution tailored to parental needs will improve parents' ability to monitor their child's academic progress.

Rationale for H3: Parents receive educational information from a variety of sources in a variety of formats. For these reasons, the data is not stored in a central location or organized consistently making it challenging for parents to retrieve and locate specific data items when needed.

H3: A technology-based educational information management solution tailored to parental needs will improve parents' ability to retrieve or locate saved educational information regarding their child.

Rationale for H4: Educational information provided to parents is not stored in a central location or organized consistently making it challenging for parents to retrieve and locate specific data items to exemplify issues or achievements when desired.

H4: A technology-based educational information management solution tailored to parental needs will improve parents' ability to reference examples when communicating or highlighting an achievement or concern that has been observed over time.

Rationale for H5: Educational information regarding their children that parents receive is generally not received or located together. Nor is the information received in the same or similar format. This makes it difficult for parents to compare educational information provided by various sources over time and make informed decisions regarding their child's education.

H5: A technology-based educational information management solution tailored to parental needs will improve parents' ability to compare educational information regarding their child and make informed decisions.

CHAPTER FOUR

Identifying Current Practices and Related Challenges

Preliminary research aimed to address the first two objectives; identify how parents are currently managing their children's educational information and identify areas where challenges are perceived and/or realized for parents managing information regarding their children's education. Interviews and surveys were used to carry out the research. Two web-based surveys were used to collect data from parents. The first survey, Study 1, was conducted to gather information regarding the types of information parents receive regarding their children, ascertain a high-level view of what is done with the data and if there were any perceived difficulties in managing any particular type of data. The results of the first survey led to a more focused second survey, Study 2, to gain insight regarding parental use of and challenges with information received concerning their children's education. Interviews with two experts in education were conducted to learn the purposes for which parents should use the information received.

4.1 Research Methodology for Objectives One and Two

Interviews with experts in the field of education were conducted to determine the types of information it is recommended for parents to keep and the reasons for which such information should be retained. Experts interviewed included an elementary school administrator and a student advocate. Expert interviews were also used to acquire information regarding the types of actions parents should take based on the educational information they receive.

Online surveys were conducted to gather data regarding how parents are currently managing their children's information, the types of information managed, sources of the information, the context and types of information shared and the sensitivity of the information. The surveys were also used to gather information regarding parents' perceived challenges with managing the information. Pilot groups were identified to take the surveys initially and not only provide the data requested in the questionnaires, but also provide feedback on how the survey can be improved (i.e. identify questions that should be revised for clarity) and metrics for the time it took to complete the survey. Once the pilot reviews were completed and the surveys were revised as needed, the invitation to complete the survey was more widely distributed. Recipients of the invitation were encouraged to invite other parents to participate in the survey. The target group for the study was parents of children between less than 1 year and 18 years of age. Participants were asked questions so that the areas where most challenges are perceived can be identified as areas for potential improvement. The data received during this phase of the research was used to guide the research conducted to address the other objectives.

4.2 Interview of Sharman Dennis, Student Advocate

Ms. Dennis is a student advocate and is the founder and CEO of Global Enrichment Solutions, LLC a company that provides support to families, schools, students of all ages and attorneys in ensuring that student educational needs are met. During the interview, Ms. Dennis's recommendations for the types of information parents should manage with respect to education, medical records and extracurricular activities of their children were solicited.

During the interview Ms. Dennis emphasized the importance of parents looking at the system involved in their child's development all together. Because this is not usually done, she trains parents to do this. The training modules offered by Global Enrichment Solutions, LLC are 1) How parents know a child is having trouble and how to address the issues; 2) Intervention programs in public schools; 3) All federal programs (IDE, 504 plans, etc.) and 4) How to access available programs.

Ms. Dennis recommended that parents document teacher phone calls, keep records of requests for appointments by the parent or teacher, keep copies of school work/assignments especially those with which that parent or teacher has expressed concern, keep copies of any official reports that have been signed and dated and keep children's pre-school portfolios. The information provided by Ms. Dennis during this interview is very valuable to this research because she not only provided recommendations for the types of information parents should retain, she also provided recommendations for how parents should respond based on the information received. The full summary of the interview with Ms. Dennis is documented in APPENDIX A Sharman Dennis Interview Summary.

4.3 Interview of Chelsea Hill, Elementary School Administrator

Mrs. Hill is an administrator for a public elementary school in the state of Maryland. During the interview, Mrs. Hill was asked to provide information regarding the types of data the school keeps about children and the methods by which parents are given access to the information. Also, based on Mrs. Hill's experience as a teacher and

administrator, her recommendations regarding other information parents should track and/or be given by schools were also petitioned.

In addition to report cards and progress reports, Mrs. Hill recommended that parents retain major assessment results (ex. Maryland State Assessment (MSA)), benchmarks, suggestions for improvements from teachers and recommendations for screenings from teachers. Mrs. Hill emphasized the importance of parents taking action when a teacher recommends a child for educational screening as it is an opportunity to acquire help the children need. The full summary of the interview with Mrs. Hill is documented in APPENDIX B
Chelsea Hill Interview Summary.

4.4 Survey 1: Parental Information Management Methods and Challenges

This summary provides an analysis of the results of the survey regarding parental information management methods. A survey of parents was conducted to discover issues relevant to the management of information regarding their children.

4.4.1 Study Method

A 58-question web-based survey was developed to collect feedback from parents on challenges with managing their children's educational, financial, medical, social, recreational, extracurricular and other information. The survey included a combination of multiple choice questions (with only one option to be checked), multiple choice questions (where respondents could check as many as they liked) and open ended questions. Survey participants were parents of children between 0 and 18 years of age. Ten parents were

asked to participant as the pilot group for the survey. In addition to providing responses to the survey, these users were asked to provide feedback on the clarity of the survey questions so that, if necessary, the survey could be revised prior to its general release. During the trial period, the survey was only accessible by members of the pilot group, Baseline – Campus Labs personnel and persons conducting the study.

Parents were invited to participate in the survey via email. The message contained an embedded link to the survey; respondents were informed that they could access the survey by clicking on the link or pasting the URL in their web browser. In the invitation parents were encouraged to forward the survey link to other parents. Please see the survey that was presented in APPENDIX A-3.

4.4.2 Demographics

Overall there were 45 responses to the survey invitation. Most survey respondents were between 31 and 50 years of age (75%). Of the remaining respondents, 11.36% were between 21 and 30 and 13.64% were age 51 or older. More than half (68.18%) of the respondents were female. The majority of the respondents (65.91%) had more than one child in their household under the age of 18. Figure 4-1 reflects the grade distribution of the children of the survey respondents.

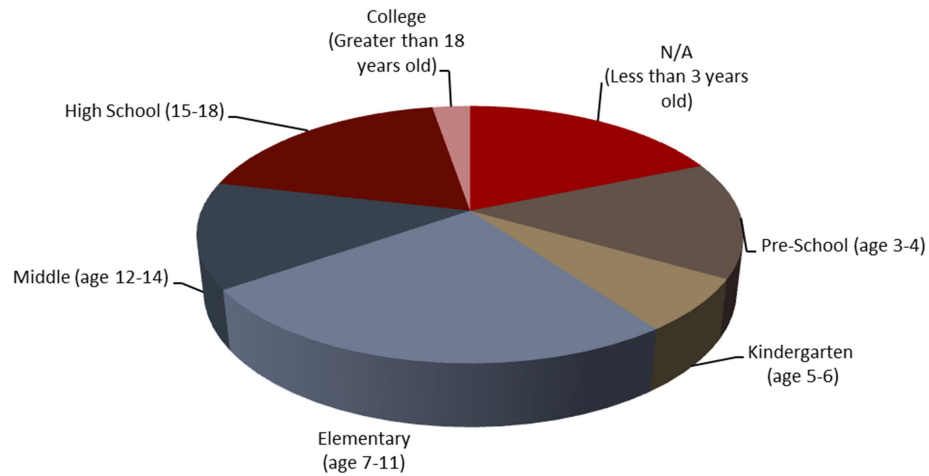


Figure 4-1 Grade Level Distribution of the Children of Survey 1 Respondents

4.4.3 Results

The responses to the survey confirmed that the five categories presented (educational, financial, medical, recreational/extracurricular and social) are important (Figure 4-2). Photographs and religious information were provided as additional types of information managed by two respondents.

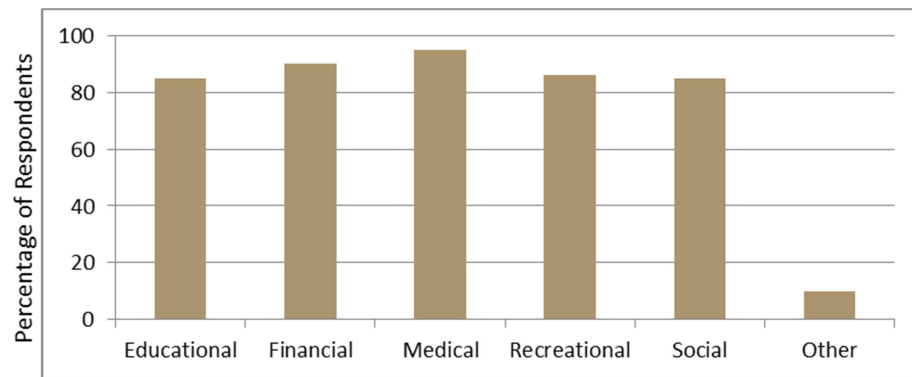


Figure 4-2 Types of Information Parents Manage Regarding their Children

The majority of the respondents did not report having any issues collection information about their children from third parties when needed. One respondent, however, commented that it was “hard to keep all the medical records straight [...] the

doctors are not always willing to share the details [...] school records are better but still not great". The perceived difficulty of sorting, storing or retrieving their children's information is perceived to be low as only a quarter of the respondents (25.64%) reported having issues. The explanations provided by those who reported having issues point to problems dealing with the "overwhelming" amounts of information, the fact that so much of the information is paper-based and the fact that several different accounts are needed to access all of the information.

Respondents receive a variety of educational information regarding their children. The most common types received were report cards, progress reports and assignments/school work. When compared with the response to the question about how much educational information they choose to save, it was evident that most received information is retained, with the exception of correspondence and meeting invitations. Responses to questions regarding the types of educational information received were separated by parents of school-aged children and parents of pre-school-aged children and are presented in Figure 4-3 and Figure 4-4.

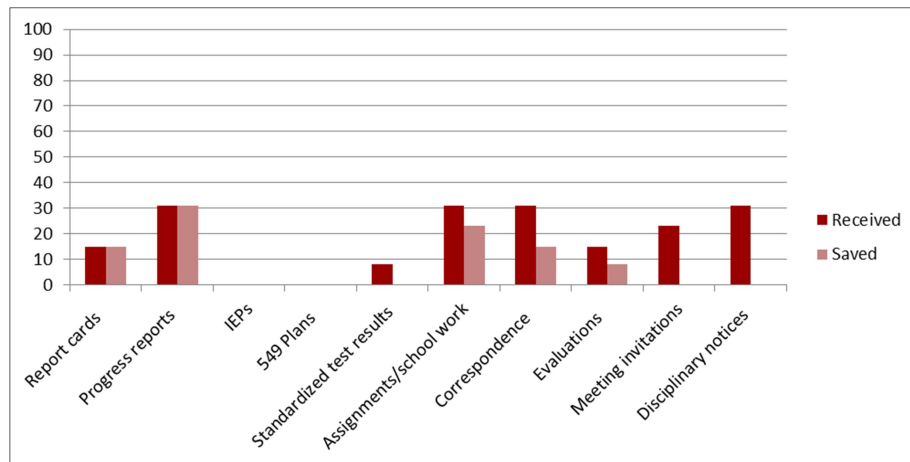


Figure 4-3 Percentage of Educational Information Received/Retained by Parents of Pre-School-Aged Children

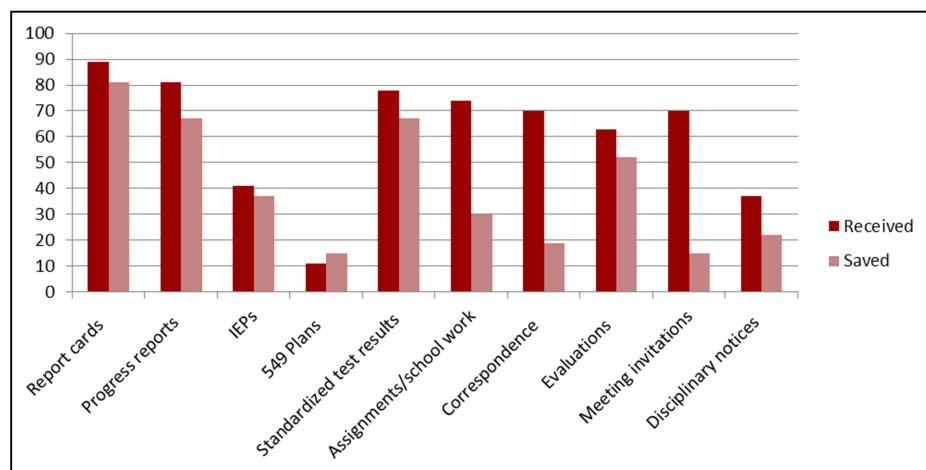


Figure 4-4 Percentage of Educational Information Received/Retained by Parents of School-Aged Children

Survey responses indicate that there is a mismatch between the ways parents currently receive educational information regarding their children and how they would prefer to receive the information (see Figure 4-5). Approximately 80% of respondents receive this information as a hardcopy or printed report while nearly 85% would prefer to receive the information electronically. However, a significant number of parents prefer

paper even when electronic options may be available; 63% of respondents preferred to receive the information in printed form.

Most respondents indicated that they would prefer to receive their children's financial and medical information electronically or online. Respondents were not asked to provide their preferred method of receipt for social and extracurricular information. Similarly to the results observed with educational information, a significant number of respondents also prefer to receive this information in hardcopy. Approximately half of the respondents keep the information indefinitely with the exception of extracurricular/recreational information. One respondent commented that extracurricular/recreational information is not kept because it changes each year, may be an indication for why other respondents also choose not to keep this information.

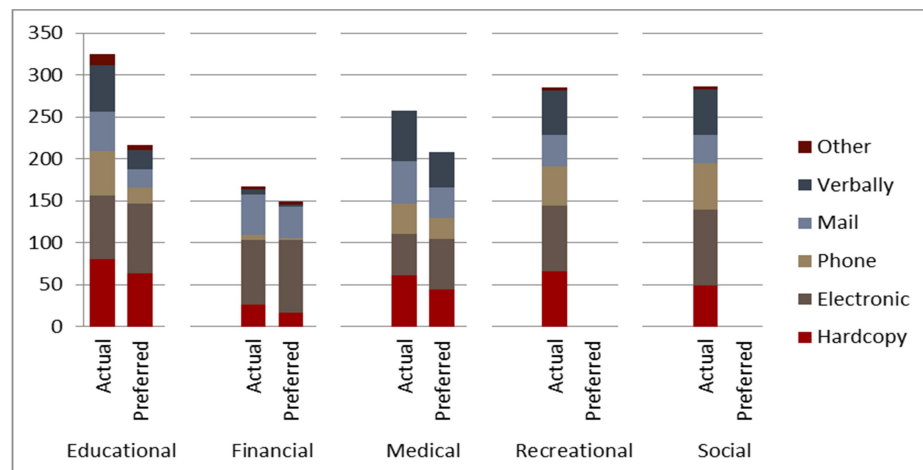


Figure 4-5 Actual vs. Preferred Methods of Information Receipt

Although the majority of respondents would like to receive educational information electronically, more than 80% of them use paper-based methods to save the

educational information they receive. This disparity was seen across most of the information types (see Figure 4-6). All survey responses from the first survey are presented in APPENDIX A-4.

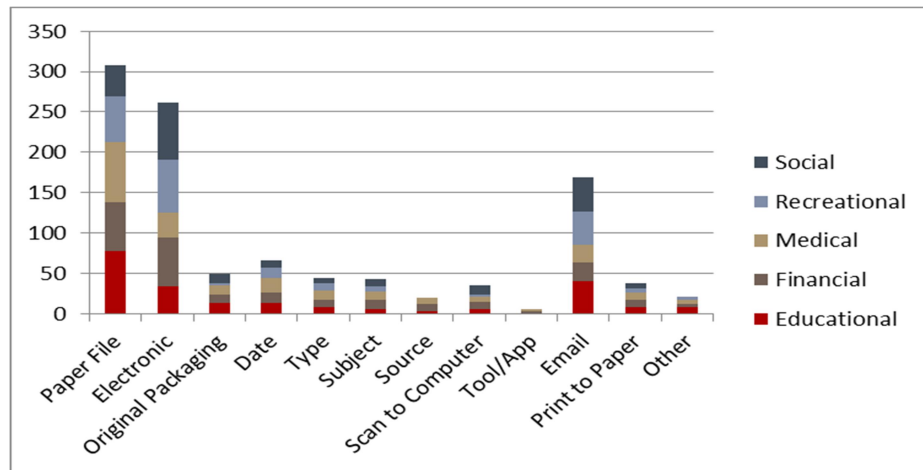


Figure 4-6 Archive Methods for Received Information

4.5 Survey 2: Parental Educational Information Management Methods and Challenges

This summary provides an analysis of the results of the 2015 survey regarding parental information management methods of their children's educational information in particular. A survey of parents was conducted to discover issues relevant to the management of information regarding their children's education. Please see the survey that was presented in APPENDIXE A-5.

4.5.1 Study Method

A second web-based survey consisting of 47 questions was designed to obtain input from parents regarding their management of, perceived challenges with and usage

of their children's educational information specifically. The survey included a combination of multiple choice questions (with only one option to be checked), multiple choice questions (where respondents could check as many as they liked), Likert scales and open ended questions. The survey was pilot tested to improve the clarity of questions. Again, targeted survey participants were parents of children between less than 1 year and 18 years of age.

4.5.2 Demographics

Persons who indicated in their response to the initial survey that they would be willing to provide additional input were invited to participate in the survey via email. The message contained an embedded link to the survey as well as a request to forward the invitation to other parents. During the period of data collection, 46 respondents met the selection criteria for completing the survey. The age and number of children of the respondents to the second survey aligned with the first survey respondents. Figure 4-7 reflects the grade distribution of the children of the survey respondents.

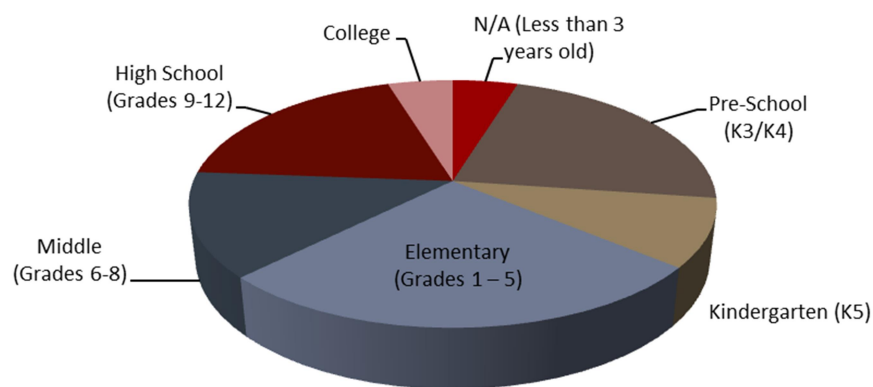


Figure 4-7 Grade Level Distribution of the Children of Survey 2 Respondents

4.5.3 Results

Questions regarding the types of educational information parents receive, what they choose to retain and for how long they choose to retain the information were revisited in the second survey. For these areas, the survey results were consistent with those from the first survey. The top five types of education information received by parents as indicated by 60% or more respondents are report cards, progress reports, correspondence, assignments/school work and meeting invitations. These types of data are retained indefinitely by approximately 43% of parents.

Again, survey results show evidence a mismatch between the ways parents currently receive education information regarding their children and how they would prefer to receive the information. Because most parents receive information in both electronic and hardcopy forms, they were asked what attempts they have made at combining the types of data received. Approximately 41% of respondents transfer hardcopy to electronic files for storage. However, 43% of respondents transfer electronic

information to hardcopy for archive. Responses to questions regarding actual and preferred methods of information receipt and archive methods received were separated between those from parents of school-aged children and parents of pre-school-aged children and are summarized in Figure 4-8 and Figure 4-9 below.

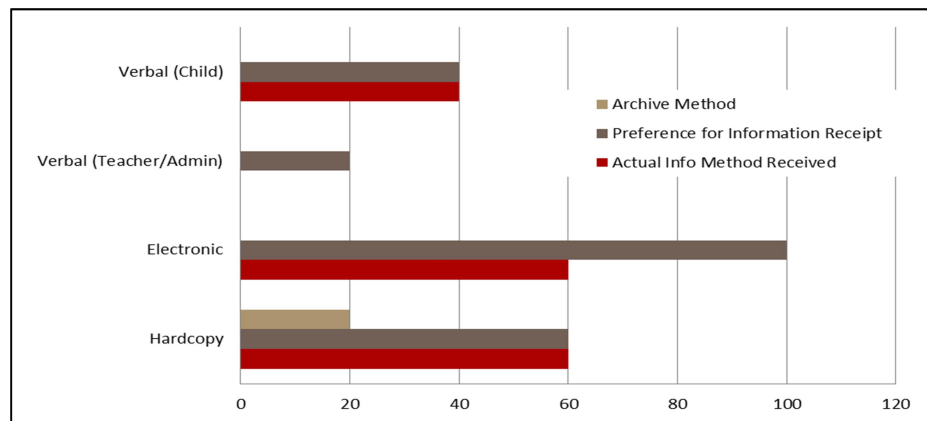


Figure 4-8 Actual and Preferred Methods of Educational Information Receipt and Archive Method of Parents of Pre-School-Aged Children

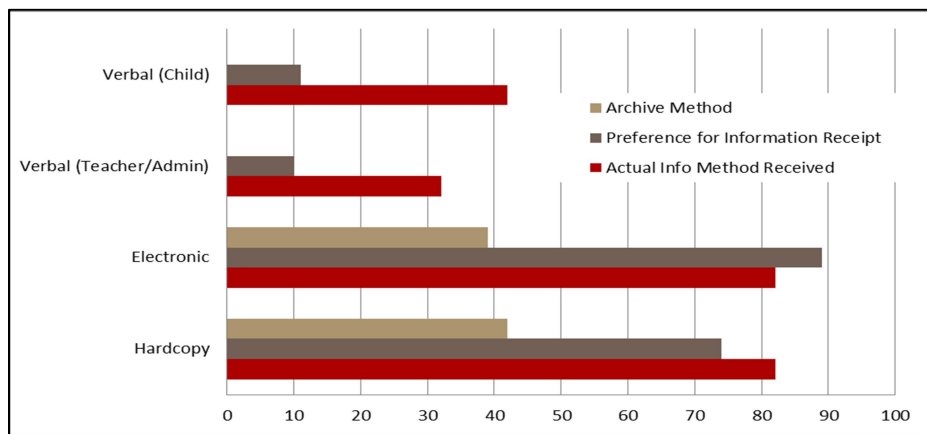


Figure 4-9 Actual and Preferred Methods of Educational Information Receipt and Archive Method of Parents of School-Aged Children

An education management system (ex. ParentCONNECTxp, SchoolMAX, Edline, etc.) is available to approximately 67% of the parents surveyed. The

overwhelming majority, 90%, of parents use the available education management system. When asked what they liked most about the available education management system, 55% of parents stated the availability, 18% liked the ease of use and 14% noted the quality of the content. When asked what they liked least about the available system, 36% reported that there was not anything they did not like. This was the number one response. Other responses indicated that parents perceived that the system was difficult to use (18%), they disliked the login/password requirement (18%) or they were dissatisfied with the quality of the content (14%).

Interestingly, 55% of parents perceive their children's educational information to be very sensitive and should be shared or accessed via secure means by authorized individuals only. However, most respondents (93%) share the information verbally or via email (43%). Most respondents share their children's educational information with family (71.88%) and educators (56.25%) for the purposes of sharing accomplishments (71%) or describing an issue (75%). There is no perceived difficulty in determining what information to share.

When asked what is done with received educational information, parents indicated that in general they either save the information and take additional actions (82%) or provide the requested response (66%). The top four actions taken, as indicated by 60% or more respondents are to contact the educator (82%), provide additional help to the child (80%), reward or reprimand the child (77%) or provide the requested

information or item (61%). Responses to questions regarding the types of information received and retained are summarized in Figure 4-10 and Figure 4-11 below.

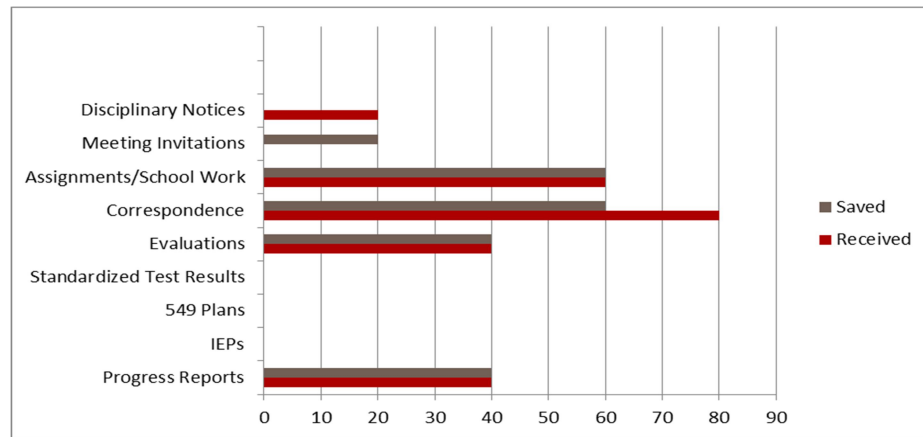


Figure 4-10 Types of Educational Information Received/Retained by Parents of Pre-School-Aged Children

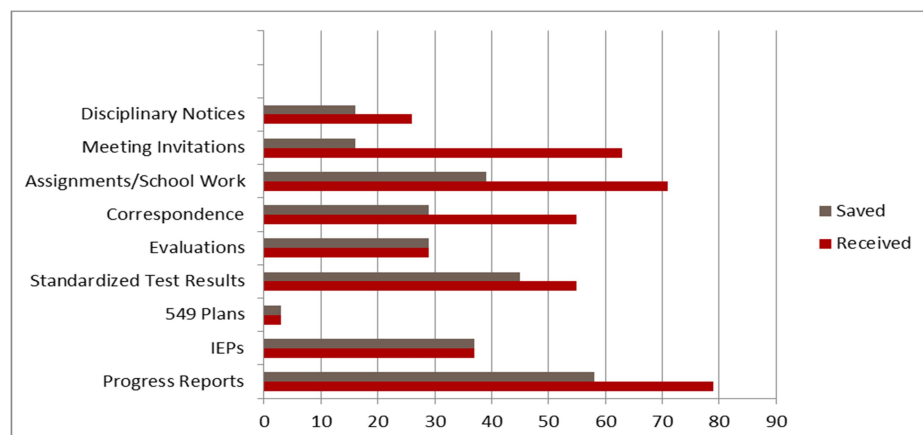


Figure 4-11 Percentage of Educational Information Received/Retained by Parents of School-Aged Children

The most prevalent methods of communicating with their children's schools as indicated by 50% or more respondents are via email (86%), in person (77%), verbally over the phone (68%) or via written notes or letters (57%). The majority of respondents

do not perceive any issues communicating with the school. The top four purposes for which parents save educational information regarding their children as indicated by approximately 50% or more respondents are: use as supporting documentation when communicating with educators or others, to assist child in reviewing/studying material or as a teaching tool, show progress or decline in development and/or skill and as a memento; to remember a child's accomplishments at a particular age or grade.

A set of the survey questions were designed to ascertain the methods used by parents to organize the educational information and the amount of effort parents were willing to dedicate to improving management of their children's educational information. Although the perceived level of difficulty in finding saved educational information when needed was low, less than 10% of parents reported having issues in this area, 90% of parents indicated a willingness to dedicate some amount of time to organizing the educational information in effort to improve effectiveness in finding the information when needed. Of the respondents, 43% are willing or able to dedicate less than one hour per week to organizing the received information, but 48% indicated that they would be willing to dedicate more than one hour per week. Specifically, majority of parents (67%) expressed a willingness to document the following information for each piece of educational information saved; date, source, category and description for items categorized as 'Other'. All survey responses from the second survey are presented in APPENDIX A-6.

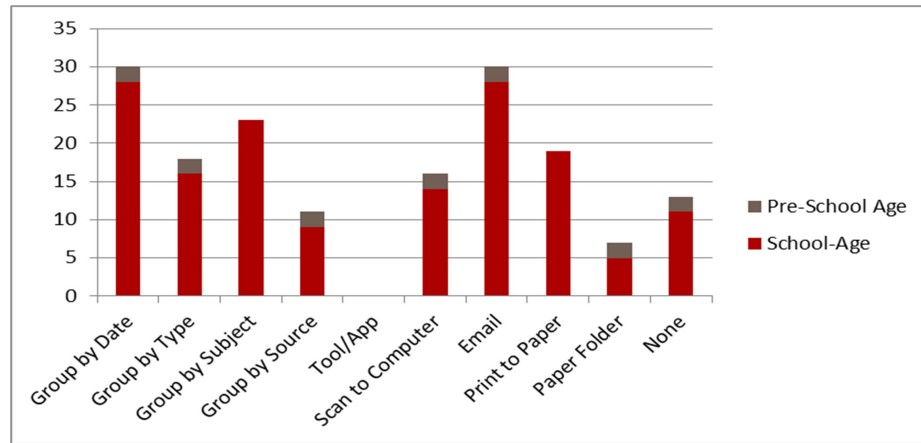


Figure 4-12 Current Organizational Methods of Respondents

4.6 Discussion

The results of the first survey confirm that parents must manage a large volume of information regarding their children. The majority of issues related to this information management are associated with educational and medical information. Overall, parents feel that the information regarding their children that they manage is sensitive, therefore privacy concerns must be considered when designing solutions to assist parents in managing this information. Per the survey results, few information management tools are used to manage the data in its categories.

Per the second survey results, no information management tools, outside of the educational management systems provided by the schools, are used by parents to manage the educational information of their children. Although the perceived difficulty with organizing educational information is low as indicated by survey responses, the willingness of the majority of participants to dedicate time each week to increasing the effectiveness of their current situation indicates that there is room for improvement.

CHAPTER FIVE

Framework

An investigatory review of related theories and approaches were used to meet the third objective; provide a framework to help parents/caregivers better manage children's educational information. Prior research focused on models to assist patients with chronic illnesses in the management of their healthcare. Based on our literature review and prior research, we conclude that it is also important to focus on models to assist parents in the management of information regarding their children's education. Similar to how CCM was used to guide the development of eCCM, the eCCM model has been chosen to guide the development of a new model that is applicable to parental information management; the Parent Information Management Model. Equivalent functional components related to parental management of information regarding their children's education is defined for each functional part of the eCCM (see Table 5-1).

The goal of the Parent Information Management Model is to drive parent activation with respect to their involvement in their children's education. Adapting the description of patient activation, parent activation as it relates to the Parent Information Management Model is the level of skills, knowledge, and confidence that a parent has in managing and influencing his/her child's educational progress.

Table 5-1 Mapping of eCCM Components to Parent Information Management Model Functional Components

eCCM	Parent Information Management Model
Clinical Decision Support	Education Decision Support
Delivery System	Electronic Student Information System
Self-management Support	Student-management Support
eHealth Education	Parental Information System Education

The CIS element of eCCM provides information to providers to ensure that they are able to provide the right care to patients. An equivalent capability in the area of education is the administrator-facing portion of the existing student information systems. Because that functionality does not directly support the parent, it falls outside of the scope of Parent Information Management Model and is not depicted in Table 1. A depiction of the Parent Information Management Model is presented in Figure 5-1. Components that support the education team are grayed out because their use by educators is important, but they are not part of the Parent Information Management Model.

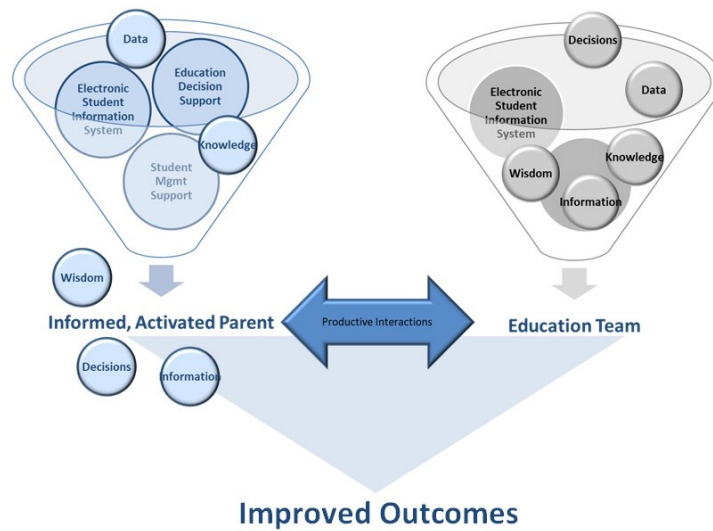


Figure 5-1 The Parental Information Management Model

Education decision support includes reports, graphs, charts and reminders to assist parents in making decisions regarding the student’s education. The reports and graphs are generated based on data regarding the students’ grades. Decision support mitigates issues associated with number confusion that parents may encounter when trying to keep track of grades in tabular form.

The electronic student information system is the system via which most school districts provide grade, attendance and other information relevant to a student’s academic records to parents. Additional data regarding the student’s academic progress is provided in graded assignments that are sent home and other communications with the parent.

Student-management support consists of technologies that enable the parent to prepare for parent-teacher conferences and education program meetings, track grade reports, participate in their child’s learning experience and provide input for courses of

action to address concerns with their child's academic progress. This information is provided to parents in various forms which is why a system to assist parents is necessary.

At a minimum a user guide accompanies most student information systems. However, most parents do not have time to read a manual to understand how to use systems and tools, therefore this area may continue to be a challenge.

CHAPTER SIX

Design of the Portal

Because we want to examine the improvement of parental management of children's educational information using a technology-based information management solution, we developed a web portal called MyStudentScope that attempts to address the needs expressed by parents and recommendations from experts in the field of education. The design and development of MyStudentScope addresses our fourth objective. MyStudentScope functionality falls within the education decision support and student-management support components of the Parental Information Management Model. The web portal was designed using the currently available school websites as a basis. Much of it is modeled after education management systems currently in use in Maryland public schools. SchoolMAX (Prince George's County Public Schools, 2015) used in PGCPs and ParentCONNECTxp (Anne Arundel County Public Schools, 2015) used in AACPS in particular were referenced in the design of the web portal.

The features and functionality that differentiate this web portal from the existing school web-based software applications, however, are the additional pages, graphs and reports that aid parents in saving and retrieving educational information that is not already delivered via the school's website. MyStudentScope is designed to be used in tandem with the current methods and systems via which parents receive information regarding their children's education like existing electronic student information systems. It is designed for personal use and can be accessed via any web browser. Instead of

archiving information using paper, parents will archive the information in MyStudentScope by entering grades their student receives on assignments or in courses and uploading documents including samples of their student's schoolwork. The MyStudentScope user interface was designed to be simple for parents to navigate with very little training or instruction. The portal has four primary functions that map to four of the research questions (see Table 6-1).

Table 6-1 MyStudentScope Function to Research Question Mapping

Function	Research Questions/Hypothesis
<i>Monitoring:</i> Enable the viewing of information provided/uploaded by the parent.	Increased parental effectiveness in monitoring the academic progress of their children.
<i>Retrieving:</i> Retrieve information as needed.	Increased parental effectiveness in retrieving saved educational information.
<i>Communication:</i> Correspond with teachers and educators.	Increased parental effectiveness in communicating with teachers/educators.
<i>Decision Making:</i> Observe trends and anomalies in educational development.	Improve decision making of parents in the area of their children's education.

6.1 Functions

Experts recommended that parents document conversations and appointments with educators. They also recommend that parents save copies of their child's work, report cards, progress reports and major assessments. The purpose of keeping the data is to have evidence of a student's progress or decline. Having the records on hand, empowers parents to approach educators with evidence to support their claims regarding their child's educational behavior.

Expert recommendations were used to define the functions of MyStudentScope. The four primary functions of MyStudentScope as shown in Table 6-1 are: monitoring,

retrieving, communication and decision making. Each function is described in greater detail below.

Monitoring. Because the parent manages MyStudentScope, he/she uploads all of the students' grade information into the system. Regardless of the child's school or school system, the parent is able to view grades associated with the child's full academic career via the monitoring functions available in MyStudentScope. Parents are also able to view information related to their child's extracurricular activities, work samples and notes. All of the data the parent saves regarding his/her child's education is available for review.

Retrieving. Using search mechanisms, parents are able to retrieve previously saved information. In a previous study, the majority of parents surveyed said they would be willing to document the following information for each piece of educational information saved; date, source, category and description for items categorized as 'Other'. MyStudentScope was designed to allow parents to save and then later search and retrieve information based on these details.

Communication. The communication function allows parents to correspond with educators, coaches, and other providers from the tool. Because parents will ideally save important documents like work samples and assessments in the tool, the communication function provides a means for parents to attach these documents to messages with the goal of improving communication.

Decision Making. The decision making function of MyStudentScope is based on the extended data–information–knowledge–wisdom (DIKW) hierarchy as described by Mannion. The DIKW hierarchy is a method for describing how we move from data to information to knowledge to wisdom, but the extension includes decision-making, which reveals what direction to take in the future (Mannion, 2015). Via the decision making function, parents are able to observe trends and detect changes in their child’s academic performance by viewing graphs and/or reports of the educational information stored in MyStudentScope. The graphical presentation of the data mitigates the need for parents to compare number values manually. For example, parents can view their child’s average grades for all courses for all school years. However, if parents want to review numeric scores, they are able to search for them as needed.

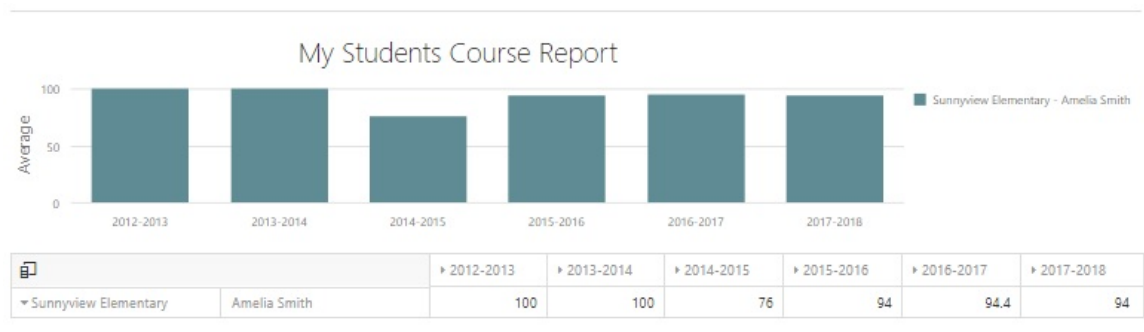


Figure 6-1 Sample MyStudentScope Course Report

6.2 User Interface

The mapping of MyStudentScope functions to the applicable web page is presented in Figure 6-2. Notice, not all MyStudentScope pages are including in the mapping because some pages are needed for standard functions like logging in and do not

map to the four primary areas. Most of the pages support the monitoring function because they provide details in a particular area of the child’s education and in some cases provide summaries of the data saved in the portal. These pages are also critical for the decision making function as it is proposed that the availability of the information and the way it is presented will improve decision making. Although information can be retrieved from most pages, it is assumed that the pages listed below next to the Retrieving function would be most heavily used for data retrieval because these are the pages where parents will view data that they have entered/saved.

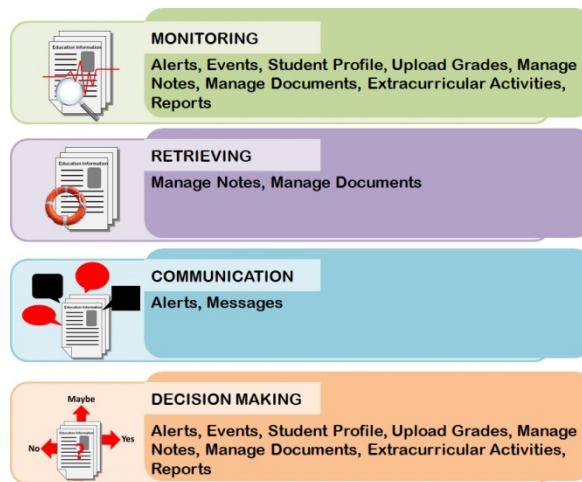


Figure 6-2 Mapping Between MyStudentScope Functions and Pages

The initial design for the portal included approximately 20 pages. They were proposed with the idea that parents would need to replicate all information from their child’s electronic student information system. After further consideration, it was evident that the only data that needed to be replicated to enable the desired functionality was course and assignment grades. Please see details regarding pages that were omitted from the final design in Appendix A-7. Based on feedback received from the review of the

pilot system, a new user interface was designed to improve parents' interaction with the tool. The design premise for the functions remained largely the same, but the look and feel of the tool was modified to make it more user friendly and engaging. The current design includes approximately 10 pages. The site map in Appendix A-8 shows how the pages are connected. Those pages and the functions that can be performed on them are described below.

6.2.1 Homepage

Many parents believe their children's education information is sensitive, therefore, each MyStudentScope account requires a username and password. New users can create an account from this page. Users are able to define their own username and password. MyStudentScope will confirm that the username is available. Once the user has created an account, he/she may log in to the account from the homepage. Upon account creation and initial login, the parent is prompted to add a student for which they would like to manage information.

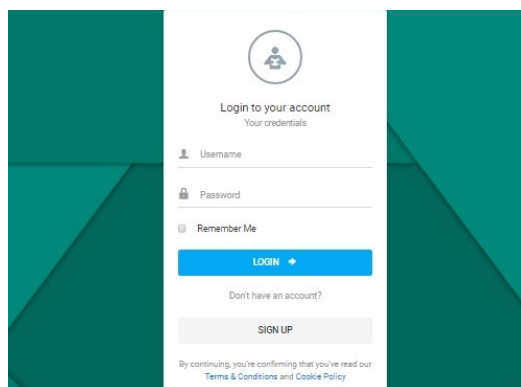


Figure 6-3 MyStudentScope Login Page

There is no limit to the number of students for which a parent may manage information using MyStudentScope. If a parent has added more than one student to the account, he/she may select the student on which they would like to focus. The parent may switch between students in a single login session.

6.2.2 Dashboard Page

Post-Login, MyStudentScope users will be presented with the *Dashboard* page (see Figure 6-4). Users who have not already added at least one student to their account will be prompted to add a student. The *My Students Assignment Report* and the *My Students Course Report* are shown on the *Dashboard* page. Users may navigate back to the *Dashboard* page by clicking on “Dashboard” in the left navigation menu. Clicking “Dashboard” in the menu will also reset any filters that have been applied to the *My Students Assignment Report* and *My Students Course Report*. The pivot tables at the bottom of each graph give the user the calculated average for the grade set they are currently viewing in the graph.

The *My Students Assignment Report* is a graphical representation of the student’s assignment grades that the parent has entered into MyStudentScope. A field chooser is available to that enables parents to modify the data show in the graph. They may, for example, choose the subject area for which they would like to view assignment grades. By default, the graph shows the average of all assignment grades for all courses for most recent/current school year for which data has been entered.

The *My Students Course Report* is a graphical representation of the student's course or report card grades that the parent has entered into MyStudentScope. A field chooser is also available on this graph. By default, the graph shows the average grades across all courses for all school years for which data has been entered. This view allows parents to get a very high-level view of grade trends across all subjects. By applying the subject area filter, for example, a parent can look for trends in that particular area. The view presents the actual grades in a table below the graphs as well as a graphical representation of them so the parent can identify trends and anomalies.

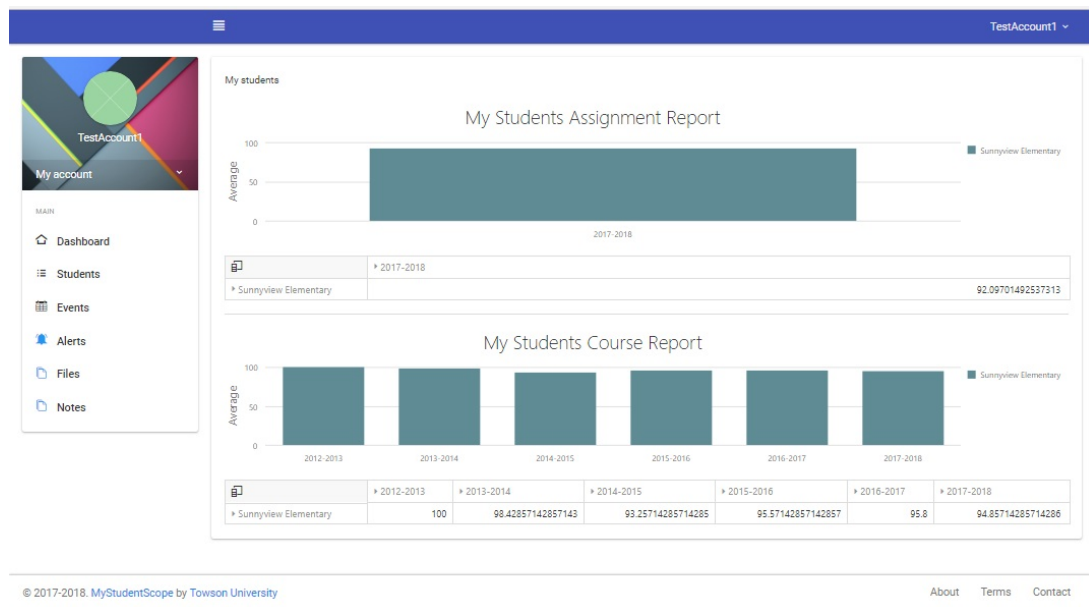


Figure 6-4 MyStudentScope Dashboard

6.2.3 Students Page

All information saved in MyStudentScope is associated with a student or students. After account creation and initial login, the user is prompted to add a student to the account. A parent may add an unlimited number of students to his/her account. This

flexibility allows parents of many children in different school systems to manage all of the information in one place. Users can navigate to the *Students* page by clicking on “Students” in the left navigation menu. If a parent has entered data for more than one student in MyStudentScope, each student will be listed on the Students page (see Figure 6-5). In order for MyStudentScope to generate reports like the graph shown in Figure 6-1, the parent must enter grade information. The parent has the option of uploading course or assignment grades individually or by uploading a comma separated value (.csv) file. From the initial *Students* page, parents may add a new student, upload a .csv file containing assignment grades or upload a .csv file containing course grades. To upload a .csv file containing grades, the user must click on the green *Load Assignment File* or the orange *Load Course Grade File* button. After clicking one of the upload buttons, the user will be presented with the *Upload Grade File Form*. The parent may also choose to view assignment or course details pages for a particular student. The student selection page provides a high-level summary of the profile of each student that includes the name, date of birth, grade level and school. Parents must click on the *Assignment Grade Details* or *Course Grade Details* icons to view non-graphical grade data for a particular student.

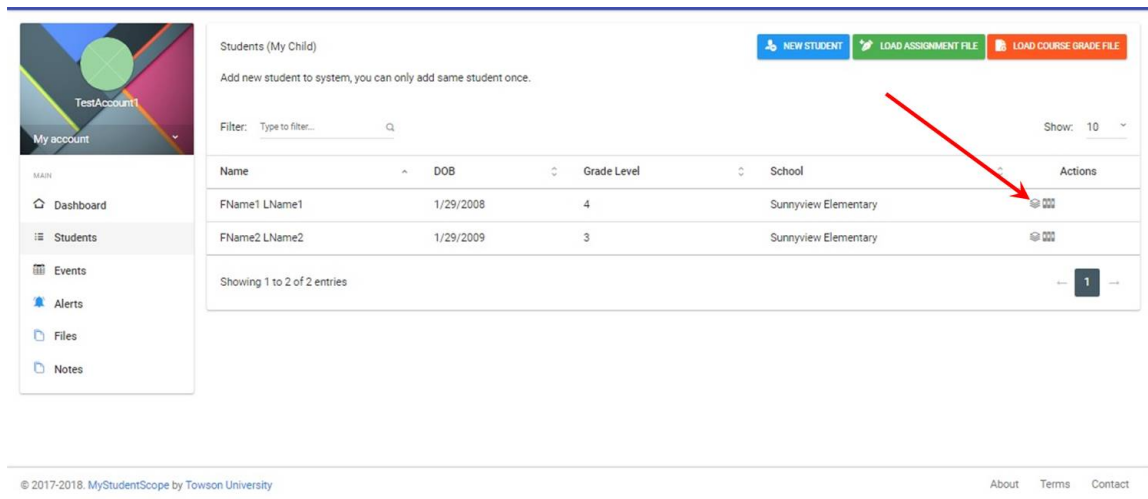


Figure 6-5 MyStudentScope Students Page with Arrow to Detail Icons

6.2.4 Assignment Grade Details Page

Users access the *Assignment Grade Details* page by clicking on the paper stack icon in the *Actions* column on the *Students* page. When a user hovers over the icon, a label that says “Show Assignment Grade Details” appears. Once on the *Assignment Grade Details* page, users can enter an individual assignment grade or select a term for which they would like to view assignment grade details (see Figure 6-6). To view assignment grades for a particular term, the user should click on the clipboard icon in the *Actions* column next to the term of interest. Assignment grades for the selected term are displayed in a window on the *Assignment Grade Details* page (see Figure 6-7). Users are able to filter assignment grades by name, date or grade to narrow their view to the grades in which they are interested.

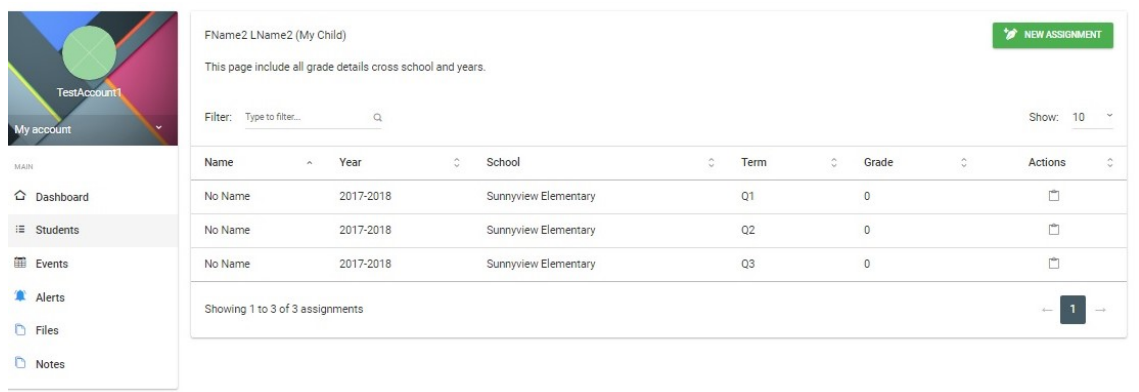


Figure 6-6 MyStudentScope Assignment Grade Details Page

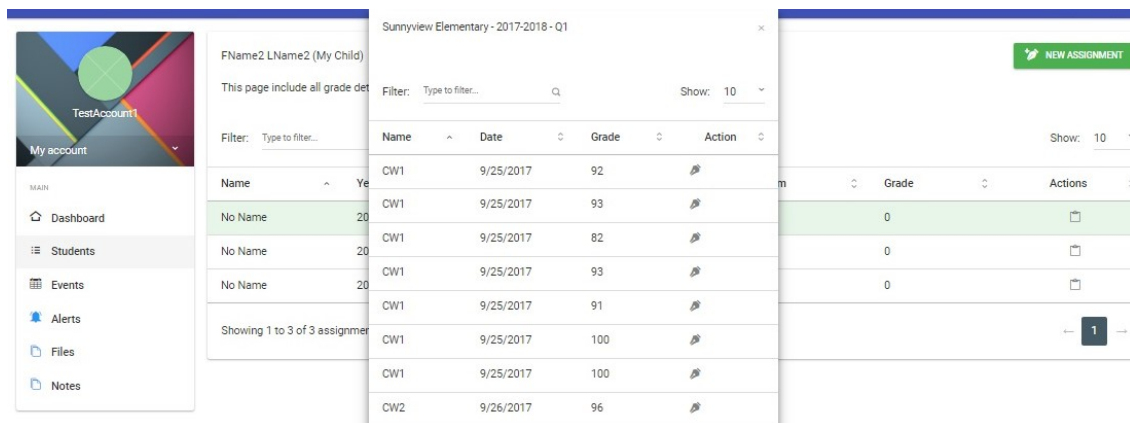


Figure 6-7 MyStudentScope View of Selected Assignment Grade Details

To enter an individual new assignment grade, the user must click the green *New Assignment* button in the top right of the *Show Assignment Grade Details* page. When entering a new assignment, the user is presented with a *Create new assignment form* to complete. The form includes areas for the user to enter the name of the assignment, date, grade received, school, school year, term, course and a description of the entry. The only required fields are assignment name and grade. However, if a parent does not enter the other values, the data cannot be grouped appropriately for the graphical views or filtering.

Figure 6-8 shows how the grade input was improved from the pilot to the current version of the portal.

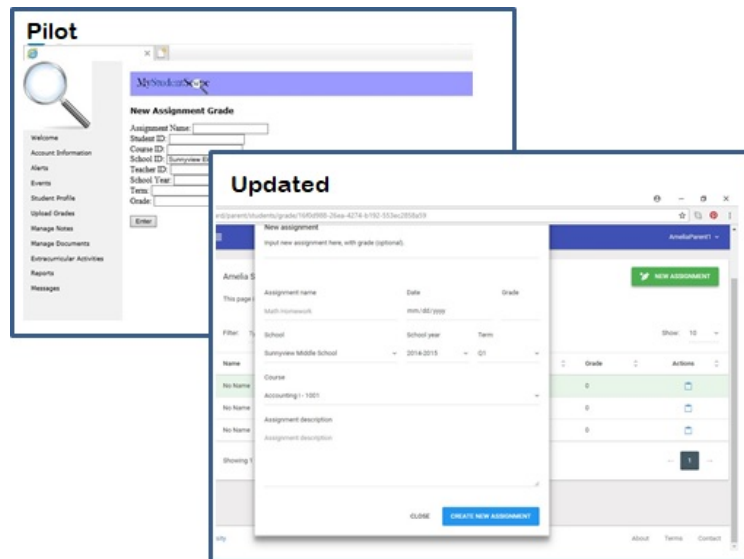


Figure 6-8 Comparison between Assignment Grade Entry Pages

6.2.5 Course Grade Details Page

Users access the *Course Grade Details* page by clicking on the three pillars icon in the *Actions* column on the *Students* page. When a user hovers over the icon, a label that says “Show Course Grade Details” appears. Once on the *Course Grade Details* page, users can enter an individual course grade or select a year and term for which they would like to view course grade details (see Figure 6-9). Course grades are those that usually appear on a student’s report card. To view course grades for a particular term, the user should click on the three pillars icon in the *Actions* column next to the term of interest. Course grades for the selected term are displayed in a window on the *Course Grade Details* page (see Figure 6-10). Users are able to filter assignment grades by course code, course name, or grade to narrow their view to the grades in which they are interested.

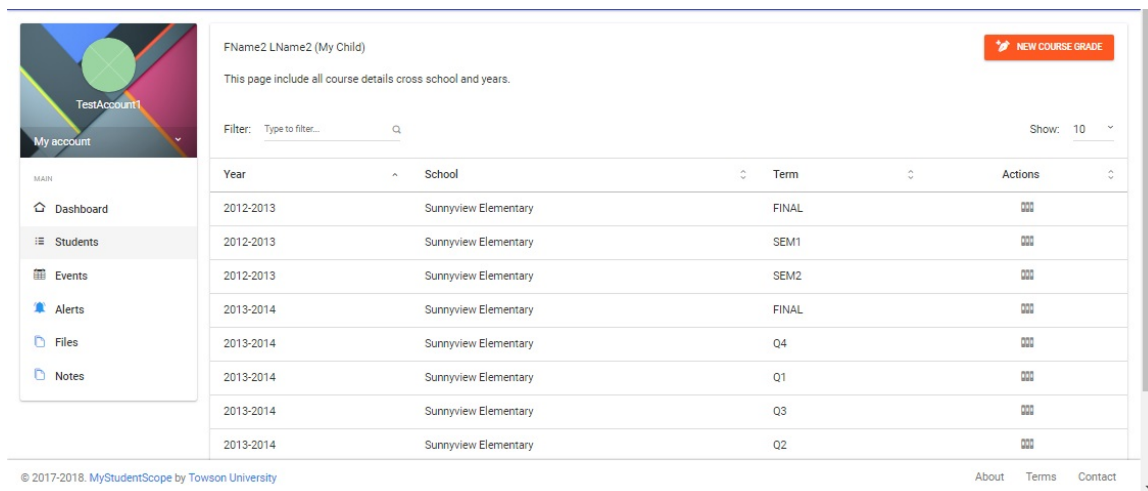


Figure 6-9 MyStudentScope Course Grade Details Page

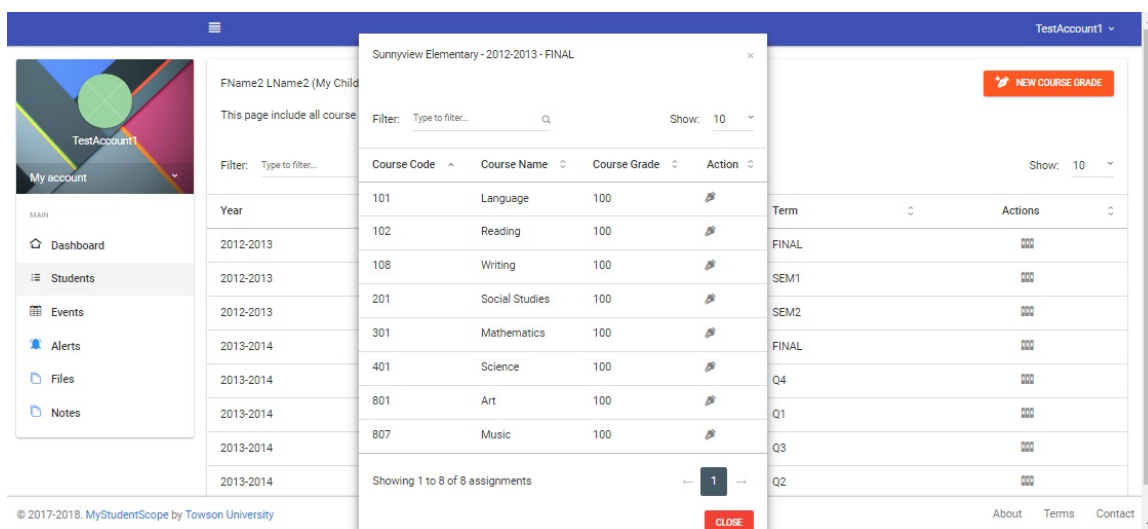


Figure 6-10 MyStudentScope View of Selected Course Grade Details

To enter an individual new course grade, the user must click the orange *New Course Grade* button in the top right of the *Show Course Grade Details* page. When entering a new course grade, the user is presented with an *Add new course grade form* to complete (see Figure 6-11). The form includes areas for the user to enter the name of the school, school year, term, course and the grade received.

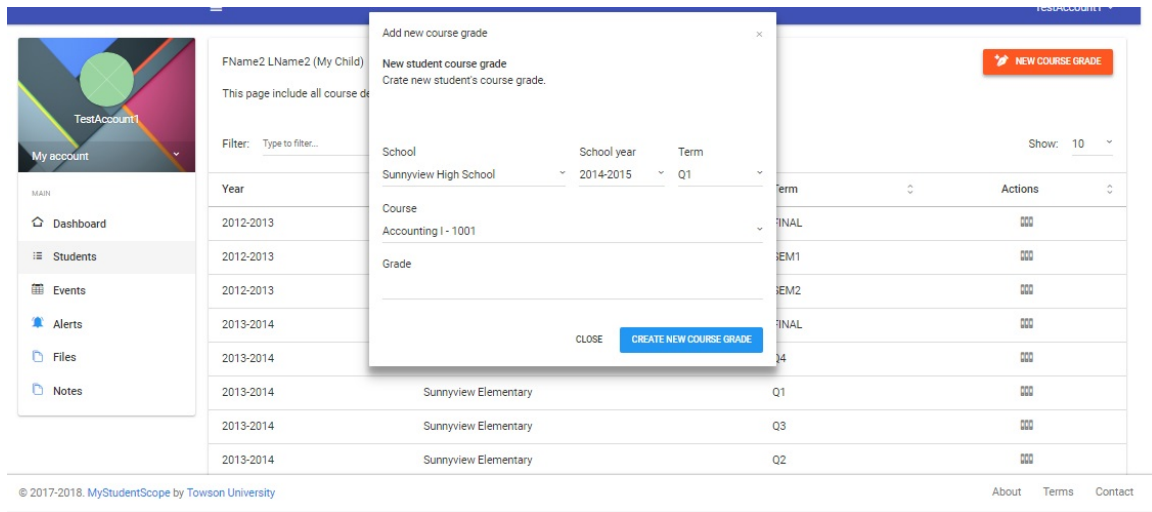


Figure 6-11 MyStudentScope Add New Course Grade Form

6.2.6 Events Page

Users can navigate to the *Events* page by clicking on “Events” in the left navigation menu. By default, parents are presented with a calendar view on the *Events* page, which displays the current month and events scheduled for the current month. The user can change to a work week view or a day view. Parents can enter school event information, assignment due dates, extracurricular activity dates, etc. in the calendar. Parents are able to scroll to different months to see upcoming or past events. This page allows parents to schedule reminders for upcoming events and detect potential schedule conflicts.

Other improvements were made to the Events section of the portal. In the pilot, it was challenging for users to see details regarding events that had been added. The portal was therefore modified to give the user month, weekly and daily view options (see Figure 6-12). By default, the user is still initially presented with the month view. The user is

permitted to schedule more than one event at the same time, but the conflict is visible to them.

To add a new event to the calendar, the user must double-click a date box on the calendar. The *Event Entry Form* will appear (see Figure 6-13). Users may enter recurring or one-time events. The *Event Entry Form* includes areas for the user to enter the subject or name of the event, indicate whether or not it is an all-day event, start date/time, end date/time, description and recurrence schedule if necessary. Because a parent may be using MyStudentScope to track data regarding more than one student, the user must also select a participant for each new event.

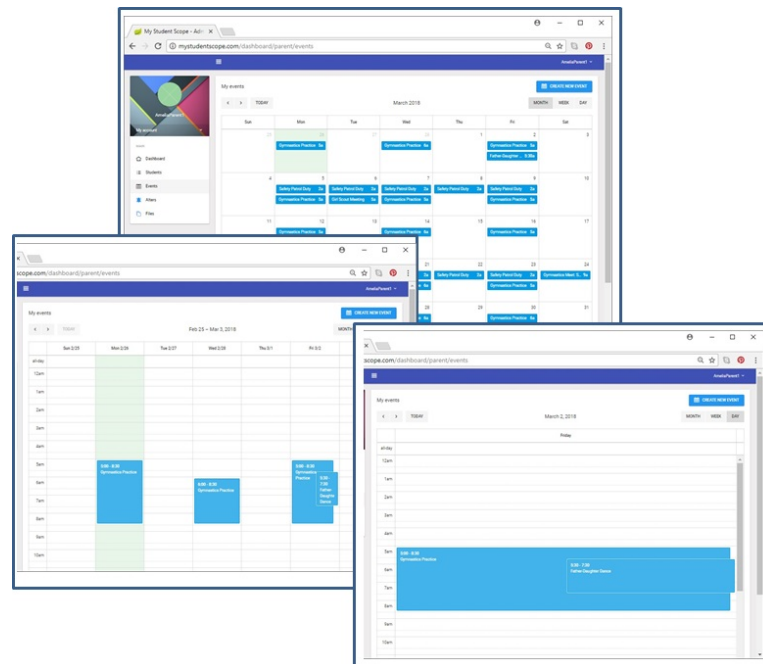


Figure 6-12 MyStudentScope Event Page Viewing Options

The screenshot displays the 'My events' interface within the MyStudentScope application. A modal form for creating a new event is centered on the screen. The form includes the following fields:

- Subject:** Test Future Event
- All day:** ☐ (checked)
- Start Date:** 4/11/2018, 9:00 AM
- End Date:** 4/11/2018, 7:00 PM
- Description:** Test Future Event
- Repeat:** ☐ (checked)
- Participants:** FName2 LName2

At the bottom of the modal are 'Done' and 'Cancel' buttons. The background shows a calendar for April 2018 with a sidebar menu on the left containing options like Dashboard, Students, Events, Alerts, Files, and Notes. The footer includes copyright information for 2017-2018 MyStudentScope by Towson University and links for About, Terms, and Contact.

Figure 6-13 MyStudentScope Event Entry Form

6.2.7 Alerts Page

Users can navigate to the *Alerts* page by clicking on “Alerts” in the left navigation menu. On the *Alerts* page, parents are able to view the criteria for alerts they have already set up and they may create new alerts (see Figure). To enter new alert, the user must click the green *New Alert* button in the top right of the *Alerts* page. Parents are able to enter two types of alerts; grade alerts or schedule alerts. Parents can choose to be notified if the student receives grades above or below a specified value. Or, parents can choose to be notified if several events are scheduled for the upcoming week. Alerts can be configured to send notifications to parents via email or Short Message Service (SMS).

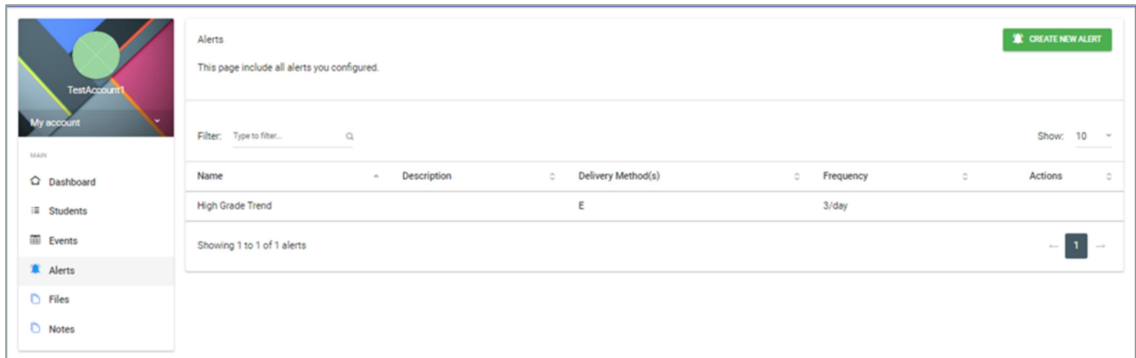


Figure 6-14 MyStudentScope Alerts Page

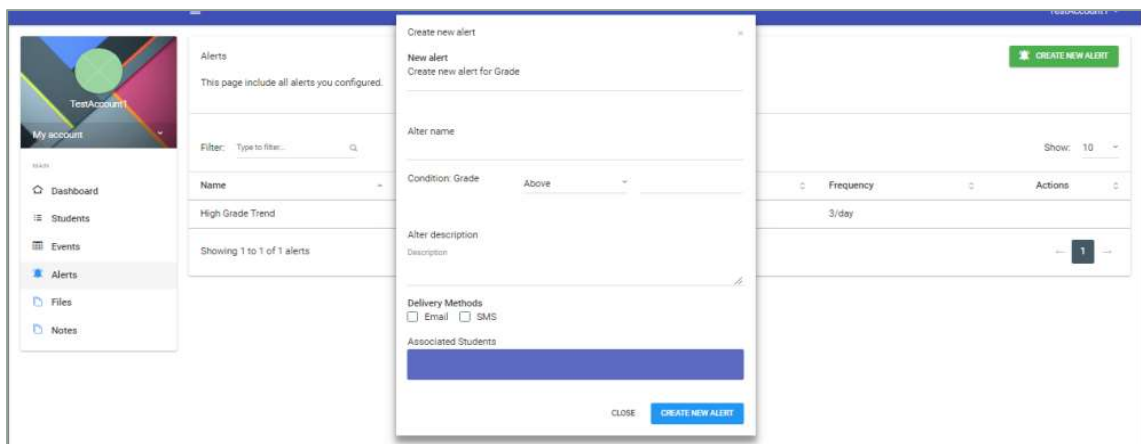


Figure 6-15 MyStudentScope Create New Alert Form

6.2.8 Files Page

On the *Files* page, parents are able to view any documents that they have uploaded or save additional resources (see Figure 6-16). Users can navigate to the *Files* page by clicking on “Files” in the left navigation menu. Parents are able to upload documents, including but not limited to images, scanned documents, samples of their children’s school work or information regarding the student’s extracurricular activities. Parents may retrieve previously uploaded documents. This will enable parents to review

samples of their children's work to observe progress. Using samples of a child's work to gauge progress is particularly important from Kindergarten through second grade.

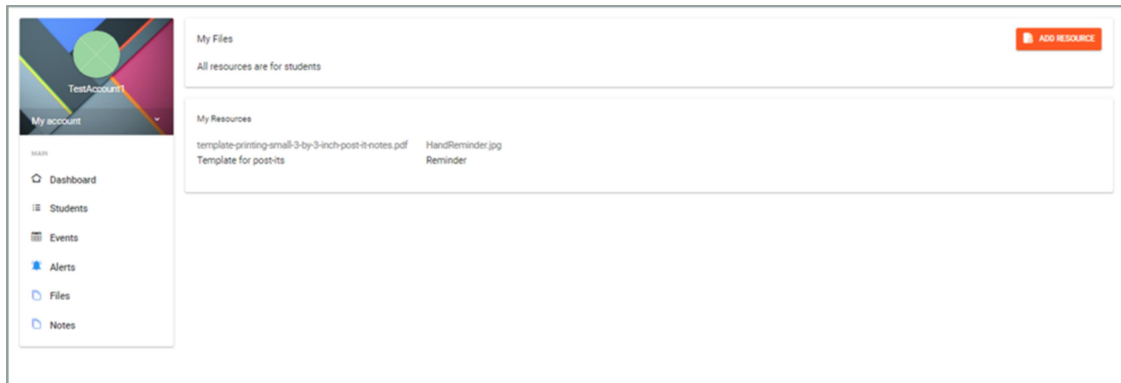


Figure 6-16 MyStudentScope Files Page

To upload a new file or resource, the user must click the orange *Add Resource* button in the top right of the *Files* page. The user is presented with an *Upload Student Files form* to complete (see Figure 6-17). The following information may be entered for each uploaded resource: name, school year, term, course and description. The information is not required, but will aid the parent in searching for the uploaded files in the future.

Figure 6-17 MyStudentScope Upload Student Files Form

6.2.9 Notes Page

The Notes page is the knowledge codification portion of the tool. Here, parents can record notes or observations regarding an event or activity related to their child's education that they wish to remember. Users can navigate to the *Notes* page by clicking on "Notes" in the left navigation menu. On the *Notes* page, parents are able to view any previously entered notes or add a new note (see Figure 6-18).

To add a new note, the user must click the orange *Add Note* button in the top right of the *Notes* page. The user is presented with a *Create New Note form* to complete (see Figure 6-19). The note entry is completely free-form text. Parents, however, are encouraged to enter details like date, involved parties, subject area/topic and indication of whether this is a positive, negative or neutral entry. Although not required by the tool, the information will aid the parent in retrieving the notes in the future. The note may be positive, for example to record the receipt of an award or special recognition that is not

reflected in the grade reports. Or the note may capture a negative event such as an encounter with another student.

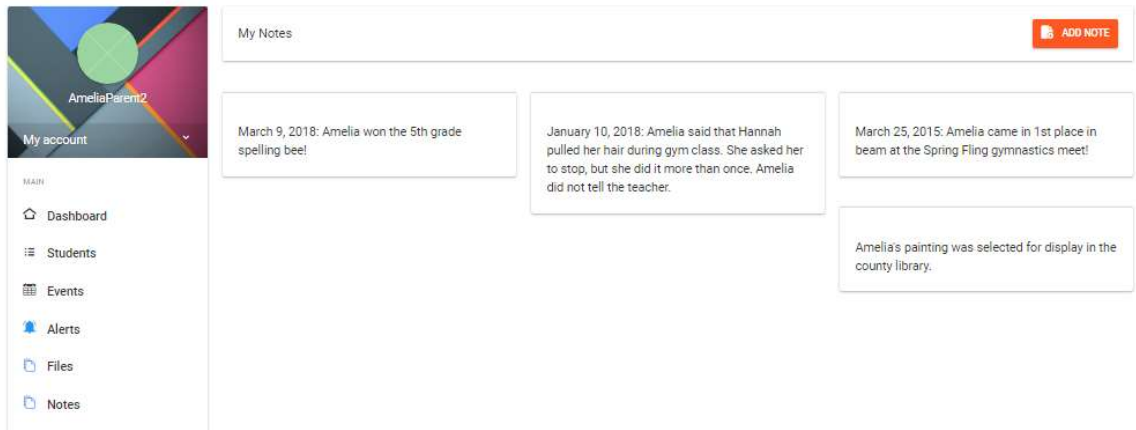


Figure 6-18 MyStudentScope Notes Page

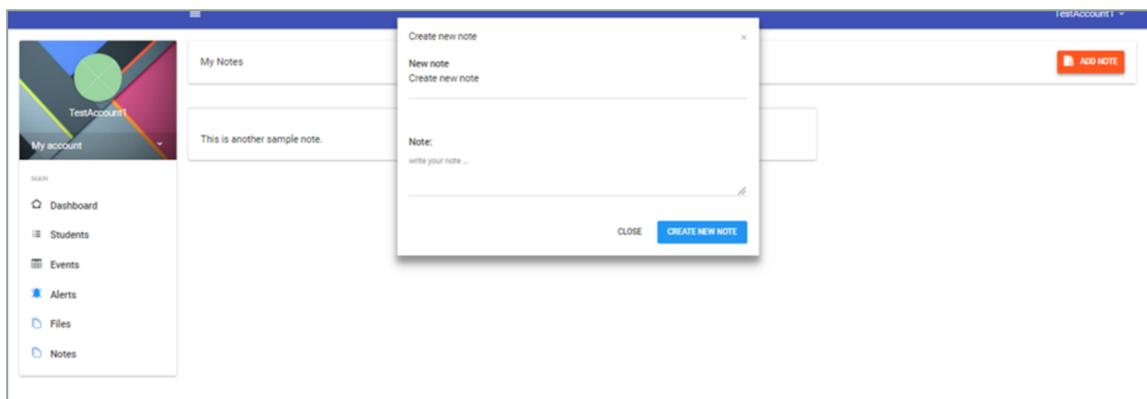


Figure 6-19 MyStudentScope Create New Note Form

6.2.10 Messages Page

The *Messages* page was designed to have the look and feel of an email inbox. Parents are able to send and receive messages to teachers and/or administrators as well as save and search for messages. Parents are able to save messages they have received on

their personal email accounts on this page. Due to unresolved errors, the Messages page was not included in the version of MyStudentScope evaluated during this research.

CHAPTER SEVEN

Preliminary Studies

We conducted two preliminary studies to collect early user feedback on MyStudentScope functionality and user perception of the interface. The first study was a pilot based on a prototype with basic functionality. The second study was based the initial version of the MyStudentScope portal.

7.1 Pilot Study

A pilot study was conducted to compare the efficiency and effectiveness of task completion through use of the web portal versus paper-based methods by simulating situations parents/caregivers may encounter related to their children's education and extracurricular activities. The goal of the pilot study was to collect preliminary feedback on MyStudentScope functionality and to improve the clarity of questions and tasks used to exercise MyStudentScope to be used in a later formal user study.

7.1.1 Experimental Setup

The typical user of the web portal would be anyone of various capabilities who is the parent or guardian of or who is responsible for a school-aged child in grades Kindergarten through 12th grade. For the pilot study, target participants were comprised of four parents of students in grades K – 12 who may or may not currently use a school-provided student information system. Each participant completed similar tasks under two conditions; paper and using a web portal prototype. The order of conditions was balanced to control the learning effect. Two users completed the paper condition first and two

users completed the web portal condition first. Each user was given a brief demo of web portal prior to starting the web portal condition.

7.1.2 Method

The participants completed a pre-test questionnaire to provide information regarding their demographics, computer and information management experience. For each condition, participants were presented with a description of a student that included the student's name, school, grade, gender and a summary of the student's extracurricular activities. For the paper condition, participants were asked to complete the tasks listed below using collection of student data including report cards, interim reports, assignment samples, school newsletters, extracurricular activity schedules and other announcements from school (see Fig. 8). Upon completion of the paper condition, participants completed a questionnaire regarding their experience.

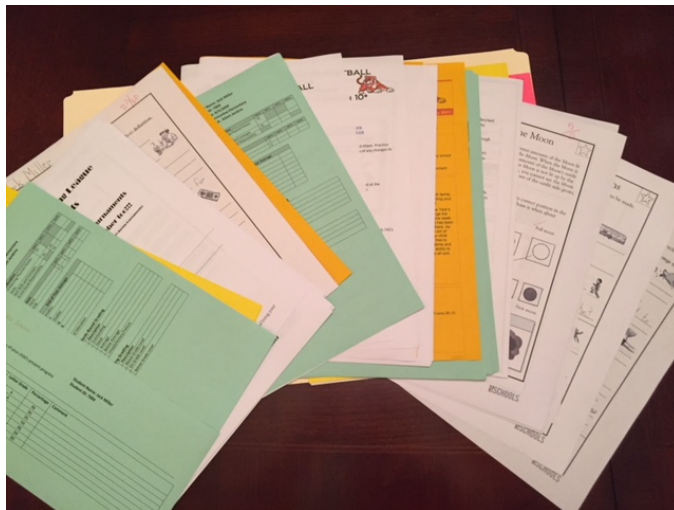


Figure 7-1 Folder for Pilot Test Paper Condition

Paper-Based Tasks

1. Determine the student's approximate average grade in a specified subject for the duration of the student's school career
2. Determine the student's grade in a specified subject for a specified grade-level and term
3. Determine if the student has any conflicts that will interfere with his/her ability to attend an event on a specified date/time
4. Determine if a grade received on a current assignment/test is normal for the student
5. Based on recently received assignment grades, compose a message to one of the student's teachers regarding a concern (positive or negative). Attach or included references any supporting facts.
6. When an incident has been reported by the student, determine if it is the first of its kind or has occurred before.

For the web portal condition, parents were asked to complete the same tasks using web portal. Some report card grades, assignment grades and calendar events were pre-loaded into the system. In addition to the Paper-Based Tasks, users were also asked to complete the tasks listed below for the web portal condition. Upon completion of the web portal condition, participants completed a questionnaire regarding their experience. Upon completion of all conditions, participants completed a questionnaire to compare their paper condition experience to their web portal experience.

Additional MyStudentScope Tasks

1. Enter individual assignment grade
2. Upload a file
3. Retrieve uploaded file

7.1.3 Results

As previously stated there were three objectives associated with the pilot study; obtain preliminary web portal feedback, improve clarity of questions and improve clarity of tasks. Three of the four pilot users agreed that using web portal was easier than paper for the requested tasks. They also responded that they believe they could be more productive in the management of their children's information if they used web portal. One of the pilot users felt that it was easier to use paper. In her opinion, ease of data retrieval and graphical representation did not outweigh the burden of entering information into web portal.

All participants understood the tasks as written. Most participants were able to navigate to the relevant web portal page to accomplish the requested tasks. One user failed to complete one task, but all other tasks were completed. It was not intuitive to three out of four participants that they should refer to the Notes page to determine whether an incident had occurred previously. The three users in question expected to find the incident information on the Messages page. Most of the users seemed tired after completing the test and were therefore not inclined to add many comments to the post-test questionnaires.

7.2 User Study 1

We conducted a user study to evaluate the efficacy of the initial design of the MyStudentScope portal as compared to traditional paper-based methods. We simulated situations parents/caregivers may encounter related to their children's education and extracurricular activities. The goals of the evaluation study are:

- To evaluate the overall functionality and interface design of MyStudentScope
- Collect user feedback on additional functions to implement in the portal
- Collect user feedback on future communication functions

Regarding the third goal, we would like to collect information regarding how users currently and /or would like to record information regarding positive and negative events related to their children's education that they would like to or may need to recall later. This is particularly relevant to information that is not received in written or electronic form.

7.2.1 Participants

The typical user of MyStudentScope is a parent or guardian who is responsible for a school-aged child in grades Kindergarten through 12th grade. Eight parents (4 males) with at least one child in Kindergarten through 12th grade participated in the study. Six out of the eight participants were between the ages of 41-50 (average: 45, stdev: 5.41). All participants have been using a computer, smart phone or tablet daily for more than ten years. Seven of the participants have an education management system available to them

via their child's school. They all indicate that they accessed the system at least quarterly. Most access the system more frequently.

7.2.2 Tasks and Procedures

The user study consists of two conditions. In both conditions, the participants completed tasks requiring them to interact with information regarding their children's education. In one condition, they used paper resources to complete the tasks in the other condition they used data stored in MyStudentScope to complete the tasks.

The folder for the paper condition contained approximately 125 documents. The documents included report cards, interim reports, sample assignments, extracurricular schedules and sign-ups for the current school year and school newsletters for the current school year. For six of the eight participants, the documents were organized chronologically with the most recent documents on top. For two of the users the documents were further sorted by type. Data equivalent to the data in the paper folder was pre-loaded into MyStudentScope.

The order of conditions was balanced to control the learning effect. Four users completed the paper condition first and four users completed the MyStudentScope condition first. Each user was given a brief demo of MyStudentScope prior to starting the MyStudentScope condition. For each condition, the participant was given a different sample student data set so the task results for both conditions would not be the same. The participants were not given any time constraints for task completion. If the participant asked for help or if we observed that the participant was not making progress toward task

completion we would provide clarification on the task or guide the user to how they could solve the task. The paper condition consisted of 8 tasks. The MyStudentScope condition consisted of 11 tasks. The mapping of the comparable MyStudentScope and paper tasks to monitoring, communication, recovery and decision making functions is presented in Table 7-1. The additional paper tasks were to gather information about how parents currently complete certain tasks in attempt to identify additional opportunities to expand MyStudentScope functionality (see Table 7-2). The additional MyStudentScope tasks are related to portal functionality. The additional tasks completed in the MyStudentScope condition map to the monitoring function (see Table 7-3).

Table 7-1 Function to Task Mapping for Study Conditions




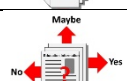






Function	Paired Task	MSS Task Number	Paper Task Number	Task Descriptions
	2	5	1	Determine average grade for specified subject area for school career (all years)
	3	6	2	Determine grade for specified grade level and marking period
	4	7	3	Determine if there are schedule conflicts for specific date
	5	9	4	Determine if recent grade is normal for student
	6	10	5	Identify data in MSS/folder used to determine if the student's recent grades are normal, above average or below average based on his/her usual performance
	7	11	6	Document trends about the student's grades from K through the current year
				
Monitoring		Communication	Recovery	Decision Making

Table 7-2 Function to Task Mapping for Additional Paper Tasks












Function	Paper Task Number	Task Descriptions	
	7	Describe method for remembering accomplishment.	
	8	Describe method for recalling whether an incident occurred in the past.	
			
Monitoring	Communication	Recovery	Decision Making

Table 7-3 Function to Task Mapping for Additional MyStudentScope Tasks


Function	MSS Task Number	Task Descriptions
N/A	1	Login to MyStudentScope
	2	Enter an assignment grade in MyStudentScope
	3	Save/upload a file to MyStudentScope
	8	Add a new event to the MyStudentScope calendar



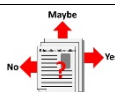
Monitoring



Communication



Recovery



Decision Making

At the end of each test condition, the participants completed a questionnaire to provide feedback on their experience. After completing both conditions, participants completed a survey comparing their experiences, reporting challenges and recommendations for changes or additional functions.

7.2.3 Results

The user feedback indicates that MyStudentScope has great potential for improving how parents use the information they receive regarding their children's information. Most participants were able to complete tasks using MyStudentScope after only a brief demonstration of the tool. With more use and with more instructive on-screen documentation and prompts, we expect the benefits of using MyStudentScope to surpass the use of paper.

The task listing and task completion times are reported in Table 7-4. A paired samples t test suggests that there is a significant difference between the MyStudentScope

condition and the paper condition in the time it took to determine whether there are schedule conflicts ($t(7) = -3.45, p < 0.05$) (Task 3). Participants took significantly shorter time to complete the task in the MyStudentScope condition than the paper condition. Paired samples t tests find no significant difference between the MyStudentScope condition and the paper condition in the time it took to complete the other tasks (Task 1: $t(7) = -1.53, n. s.$; Task 2: $t(7) = -0.91, n. s.$; Task 4: $t(7) = -0.14, n. s.$; Task 5: $t(7) = -0.94, n. s.$).

Table 7-4 Tasks with Completion Times (seconds) for Each Condition

ID	1. Determine the student's average grade in a specified subject area		2. Determine grade for specified grade level and marking period		3. Determine if there are schedule conflicts for specific date		4. Determine if recent grade is normal for student		5. State information used to determine if recent grades are normal	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	159	46	47	79	30	65	56	125	41	44
P2	34	101	74	203	35	106	55	35	96	159
P3	171	352	160	56	42	375	56	140	68	69
P4	156	206	66	26	25	180	36	25	37	22
P5	136	357	170	224	21	236	253	90	67	48
P6	544	641	366	95	59	168	83	94	115	126
P7	120	300	60	60	60	180	60	120	60	180
P8	240	120	240	120	60	60	60	60	60	30

To understand the participants' preference for managing information and technology experience, each participant completed a questionnaire before the test. Responses to Likert scale questions from the pre-test questionnaire are summarized in Table 7-5 Summary of Answers to Pre-Test Questionnaire Likert Scale Questions. A five-level Likert scale was used where 1 = Strongly Disagree and 5 = Strongly Agree.

Similar to results seen in prior studies, most parents indicated that they use both paper and technology to manage information. Three participants disagreed or strongly disagreed that they have a tendency to use paper-based methods to organize information. All participants began the study with a positive opinion of the ease with which technology can be used to manage their children's educational information.

Table 7-5 Summary of Answers to Pre-Test Questionnaire Likert Scale Questions (1 = Strongly Disagree, 5 = Strongly Agree)

ID	1.Tend to use paper to organize	2.Tend to use technology to organize	3.Manage education info like other info	4.Managing education info is important	5.Using technology to manage education info is easy
P1	2	5	4	5	5
P2	4	4	4	5	4
P3	1	5	5	5	4
P4	4	4	4	5	4
P5	1	4	4	5	5
P6	4	4	4	5	4
P7	3	4	4	4	4
P8	3	5	4	5	4

All participants answered a questionnaire after each test condition to evaluate their experience. The questionnaire after the MyStudentScope condition also asked participants to provide suggestions for improving the portal. The majority of the participant feedback was positive in favor of MyStudentScope. As shown in Table 7-6. Summary of Answers to MyStudentScope v. Paper Post-Test Comparison Questionnaire Likert Scale Questions, all but one participant strongly agreed or agreed that using MyStudentScope to perform tasks was easier than using paper-based methods.

Table 7-6. Summary of Answers to MyStudentScope v. Paper Post-Test Comparison Questionnaire Likert Scale Questions (1 = Strongly Disagree, 5 = Strongly Agree)

ID	1. MSS was easier to use than paper.	2. Completed task more quickly with paper.	3. More productive with MSS than paper.	4. Recovered from errors faster with paper.	5. Easier to find information with MSS.	6. More frustration using MSS than paper
P1	5	1	5	1	5	1
P2	2	2	2	4	2	4
P3	5	1	5	1	5	1
P4	5	2	5	2	5	1
P5	5	2	4	2	4	2
P6	4	2	4	2	4	2
P7	5	2	5	2	5	2
P8	5	4	5	2	5	2

Participants also provided some recommendations for improving MyStudentScope. Some of the recommendations are already in development (e.g. communication function). Others were new. One participant recommended that parents be able to link to the school website from MyStudentScope. Another parent suggested that MyStudentScope have a designated place for IEP data.

7.3 Summary

The results of the pilot show that a tool designed for parents to manage their children's information could be useful and confirmed that it was worthwhile to pursue designing and developing such a tool. Based on user responses, the functionality proposed in the prototype is what parents would expect to have available to them in such a tool. These results motivated us to develop the MyStudentScope portal.

From User Study 1 we gained insights on how to make MyStudentScope more user friendly. For example, while participants were completing the task that required them to compare grades over several school years, most attempted to expand the graph details for the school years on the Dashboard. Unfortunately, the graph view was not large enough to display the data for all years when expanded in this way. The ability to scroll to view the rest of the data was also not available. Users had no choice but to minimize some of the data to view additional details. This made comparing data across the school years using the Dashboard challenging. When entering assignment grades, participants faced challenges selecting the appropriate course name for the entry. They were presented with a list of all K-12 courses, but the list was not organized by grade-level. Most participants guessed at the appropriate course entry to complete the task.

The most prevalent complaint regarding MyStudentScope in both the pilot study and User Study 1 was that participants felt that they needed more time to become acclimated to the portal. Based on post-test survey responses from User Study1, the majority of participants were of the opinion that they could be more productive using MyStudentScope than paper, if they knew how to use MyStudentScope better. This feedback motivated us to write a MyStudentScope user guide. The guide contained instructions that could be used to complete the tasks that we anticipated to be most popular including, but not limited to, using filters to modify the Dashboard view, adding assignment grades, adding calendar events and uploading files.

The results of the preliminary studies also prompted us to make changes to the design of the user study. In the preliminary studies, participants completed all pre and post-test surveys by hand on paper. This was in addition to recording their answers to MyStudentScope and paper tasks. We observed that by the time participants were asked to complete the final questionnaire where we asked them to compare their experience using MyStudentScope to their experience using paper, they were tired of writing and therefore not inclined to provide much feedback.

CHAPTER EIGHT

Comprehensive User Evaluation of MyStudentScope

Researchers have explored the use of paper in work practices where complexity made the transition to or the use of technology difficult. Extensive research also exists in the area of information management. No previous research, aside from our prior user study, has been conducted to empirically investigate the use of technology versus paper when managing children's educational information. Although the small group of participants from the first user study provided an indication of the effectiveness of MyStudentScope versus paper, a study with a larger group of users was needed to further validate the results. For this reason, we decided to conduct another study based on the lessons learned from our prior user study with a larger sample size.

We once again conducted an empirical study to investigate whether a technology-based solution, MyStudentScope, can improve parental management and use of information regarding their children's education. This time the design of the study was modified to address challenges that may have negatively impacted prior results. The Dashboard limitations were corrected and the scrolling capability was functional during this test. The portal was also modified such that whenever the participant needed to select a course for an entry, like adding an assignment or course grade or uploading a document, he/she could select the applicable grade level and then choose the course from a list filtered to only the courses applicable to the selected grade-level.

The pre and post-test questionnaires that had been completed on paper during the preliminary studies were converted into four online surveys created through the Baseline – Campus Labs site used for Survey 1 and Survey 2. Instead of writing their answers, users were able to select or type their responses. Some of the tasks were also modified to reduce the amount of writing required by the participant to express his/her answers. The motivation for these changes was to decrease participant's fatigue due to writing while completing the test, so that he/she would be willing to provide more complete and informative feedback to the survey questions.

Participants were identified based on their willingness to participate in further research as indicated by their response to the early surveys conducted online to gain information regarding how parents currently manage their children's information. Parents were invited to participate in the study via email. In the invitation parents were encouraged to forward the invitation to other parents. Twenty-three (23) parents each having at least one child in Kindergarten through 12th grade participated in the study. The study examined the challenges parents faced when attempting to complete tasks using paper-based methods and MyStudentScope as well as their preferences using the MyStudentScope web portal.

8.1 Research Questions

A user study was conducted to evaluate the effectiveness of educational information management through the use of the MyStudentScope portal as compared to traditional paper-based methods. As in the pilot study and Study 1, scenarios parents may

encounter related to their children's education and extracurricular activities were simulated and parents were asked to respond. The following research questions are investigated:

- Are parents able to complete information retrieval tasks more quickly using paper-based methods or MyStudentScope?
- Are parents more frustrated completing information retrieval task using paper-based methods or MyStudentScope?
- Are parents able to make decisions more effectively using paper-based methods or MyStudentScope?
- What are the challenges for parents when using MyStudentScope to complete tasks?
- How can we improve the design of MyStudentScope to better meet the needs of parents?

8.2 Method

8.2.1 Participants

Participants include 1) parents of students in grades Kindergarten through 12 that currently use a school-provided electronic student information system, 2) parents having children in grades Pre-Kindergarten through 12 and older children who have used a school-provided electronic student information system in the past and 3) parents of young children who may use a school-provided electronic student information system in the future. Overall, 23 parents having at least one child between the ages of 0 –18

participated in the study (7 males and 16 females). Some of the participants also had children over the age of 18. Thirteen (13) of the participants were between the ages of 31 and 40 (average: 41, stdev: 8.01). The majority of participants have more than one child (95.45%). Figure 8-1 reflects the grade level distribution of the children of the participants. Four parents who participated in study 1 also participated in this usability study.

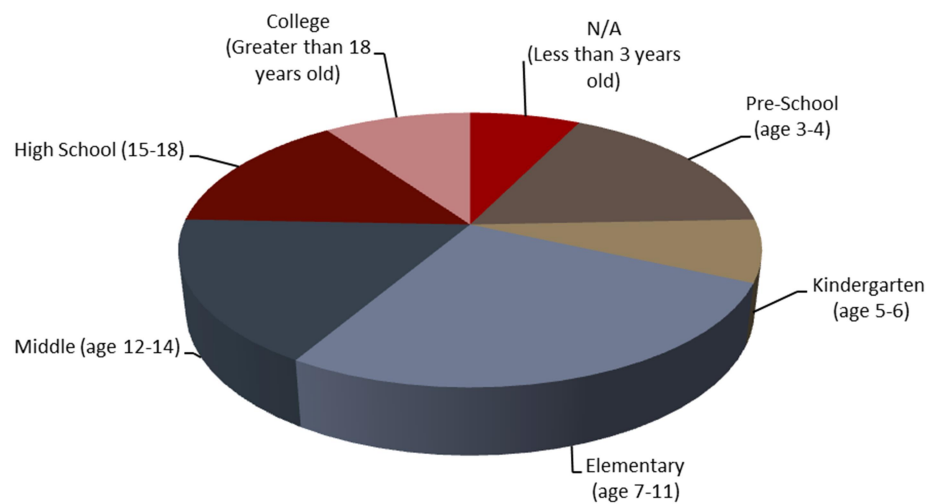


Figure 8-1 Grade Level Distribution of the Children of Study Participants

All participants have been using a computer, smart phone or tablet daily for more than ten years. Sixteen (16) of the participants have a school system-provided education management system available to them. The majority (13) of those with access to an education management system access the system at least once per quarter. Three of the respondents with access to a system do not access it. Table 8-1 shows the general demographic information for each participant. It includes answers questions of whether

or not an education management system is available to the parents through their child's school and available is it used by the parent.

Table 8-1 General Demographic Information for Participants

ID	Gender	Age	Number of Children	Availability of Education Management System	Education Management System In Use
P1	F	31 - 40	3	Yes	No
P2	M	31 - 40	3	Yes	No
P3	F	31 - 40	3	Yes	No
P4	F	31 - 40	3	Yes	Yes
P5	M	51 - 60	4	Yes	Yes
P6	F	41 - 50	4	Yes	Yes
P7	F	31 - 40	3	No	N/A
P8	F	41 - 50	5	Yes	Yes
P9	M	41 - 50	3	No	N/A
P10	F	41 - 50	3	Yes	Yes
P11	F	31 - 40	3	Yes	Yes
P12	F	51 - 60	5	Yes	Yes
P13	M	31 - 40	3	No	N/A
P14	F	41 - 50	3	Yes	Yes
P16	F	31 - 40	3	N/A	N/A
P17	F	41 - 50	3	Yes	Yes
P18	F	31 - 40	4	N/A	N/A
P19	F	31 - 40	2	Yes	Yes
P20	F	31 - 40	3	Yes	Yes
P21	M	51 - 60	3	Yes	Yes
P22	F	31 - 40	4	Yes	Yes
P23	M	31 - 40	3	No	No

8.2.2 Experiment Design and Procedure

A within-group design was adopted for this study. Each participant completed similar tasks related to the management and use of educational information for two students under two conditions: paper-based condition and MyStudentScope condition.

The order of conditions was balanced to control the learning effect. 11 of the participants

completed the tasks under the paper condition first and 12 completed the study under the MyStudentScope condition.

During the formal study, participants completed a total of 24 tasks; 14 using MyStudentScope and 10 using paper. At the beginning of the MyStudentScope condition, each user was given a brief demo of the MyStudentScope web portal. A MyStudentScope user guide was also available to participants as a reference during the test. Upon completion of tasks for each condition, the participant was asked to complete a questionnaire regarding their satisfaction and frustration. Upon completion of all tasks participants were asked to complete a questionnaire comparing their experience using paper to MyStudentScope. All participants completed the tasks; however pre and post-test survey responses were only recorded for 22 participants.

To avoid privacy concerns, four fictional student data sets were created for the study: Amelia, Jack, Emily and Oliver. Two of the test data sets represented high performing elementary school students; one female and one male (Amelia and Jack). The other two test data sets represented average performing elementary school students; one female and one male (Emily and Oliver). Each test data set included assignment grades; course/report card grades; samples of the student's work; and communications, schedules and notices from the school and extracurricular programs. The data was organized in a paper folder and in MyStudentScope for each data set. Depending on the test data set, the paper folder contained between 105 and 140 pages. The documents included report cards, interim reports, sample assignments, extracurricular schedules and sign-ups for the

current school year and school newsletters for the current school year. The documents were organized chronologically with the most recent documents on top. The electronic equivalents of the documents and/or information reflected in the paper documents were uploaded into MyStudentScope for each test data set. Please see test data set student profiles that were provided to participants in Appendix A-10.

Experiment Environment

The study was conducted in participants' homes. This experiment is conducted using the MyStudentScope web portal we developed. The details of the portal are described in chapter six. The URL of the MyStudentScope homepage is <http://mystudentscope.com/login>. The website was hosted on a DigitalOcean cloud server. Participants used laptop computers owned by the test facilitators and the Google chrome browser to perform pre and post-test questionnaires and MyStudentScope tasks.








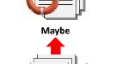
8.2.3 Tasks


A within-subject design method is adopted and each participant completed tasks under both the paper and MyStudentScope conditions. Each participant completed tasks using paper-based methods, tasks using MyStudentScope and four questionnaires; pre-test, post paper-condition, post MyStudentScope condition and a comparison questionnaire. The participants completed a pre-test questionnaire to provide information regarding their demographics, computer and information management experience and preferences. Please see the pre-test questionnaire that was presented in Appendix A-9. In the paper and MyStudentScope conditions, participants completed tasks requiring them to

interact with information regarding a child's education. Participants completed all four questionnaires and tasks under both conditions in a single session. In general, each session lasted approximately 1 ½ to 2 hours.


The paper condition consisted of 10 tasks. The MyStudentScope condition had 14 tasks. The mapping of MyStudentScope and paper tasks to monitoring, communication, recovery and decision making functions is presented in Table 8-2. The additional MyStudentScope tasks are related to portal functionality. Other tasks completed in MyStudentScope map to the monitoring function (see Table 8-3).

Table 8-2 Function to Task Mapping for Study Conditions


Function	Paired Task	MSS Task Number	Paper Task Number	Task Descriptions
	1	4	1 and 2	Identify facts to support belief regarding child's performance
	2	5	3	Determine average grade for specified subject area for school career (all years)
	3	6	4	Determine grade for specified grade level and marking period
	4	7	5	Determine if there are schedule conflicts for specific date
	5	9	6	Determine if recent grade is normal for student
	6	10	7	Identify data in MSS/folder used to determine if the student's recent grades are normal, above average or below average based on his/her usual performance
	7	11	8	Document trends about the student's grades from K through the current year
	8	13	9	Determine if a similar incident has occurred in the past




Monitoring



Communication









Recovery



Decision Making

Table 8-3 Function to Task Mapping for Additional MyStudentScope Tasks

Function	MSS Task Number	Task Descriptions
N/A	1	Login to MyStudentScope
	2	Enter an assignment grade in MyStudentScope
	3	Save/upload a file to MyStudentScope
	8	Add a new event to the MyStudentScope calendar
	12	Record an entry about a student accomplishment in MyStudentScope
	14	Add a grade alert in MyStudentScope
		
Monitoring	Communication	Recovery
		Decision Making

The tasks were presented as scenarios parents may face while their children are in school or participate in extracurricular activities. For MyStudentScope task 1, and corresponding paper tasks 1 and 2, a participant using the Emily test data set would be presented with the following task:

Emily's teacher, Mrs. Keller, sent you the following message:

Dear Emily's Parent,

The quality of Emily's handwriting is poor. At times it is difficult for me to read the answers on her assignments. Please work with Emily to improve her penmanship.

Sincerely,

Mrs. Keller

You believe Emily's teacher is mistaken. Show the test facilitator evidence in MyStudentScope/the folder that you could use to support your belief that Emily's teacher is mistaken.

The full task list for the MyStudentScope condition for one of the test data sets is presented in Appendix A-11. The full task list for the paper condition for another test data

set is presented in Appendix A-12. At the end of each test condition, the participants completed a questionnaire to provide feedback on his/her experience. After completing both conditions, participants completed a survey comparing their experiences, reporting challenges and recommendations for changes or additional functions. The post-paper condition, post-MyStudentScope condition and post-test comparison questionnaires that were presented are in Appendix A-13, Appendix A-14 and Appendix A-15 respectively.

8.3 Results

Twenty-three participants completed the study. All participants conducted 14 tasks under the MyStudentScope condition and 10 tasks under the paper condition. Task performance was measured through 3 variables: the time spent completing a task, the success rate, and the total number of pages visited to complete a specific task. Comparing the total number of pages visited with the minimum number of pages needed to complete a task can provide insight about the efficacy of the navigation design of the MSS web portal.

8.3.1 Task Completion Time

The task listing and task completion times for the MyStudentScope tasks with equivalent paper tasks are reported in Table 8-4 and Table 8-5. Among parents who participated in the final study ($N = 23$), a paired samples t test suggests that there is a significant difference between the MyStudentScope condition and the paper condition in paired tasks 3, 4, 7 and 8; the time it took to determine grade for specified grade level and marking period ($t(8) = 5.36, p < 0.05$) (Task 3), determine if there are schedule conflicts

for specific date ($t(8) = -4.73, p < 0.05$) (Task 4), determine trends in student grades ($t(8) = -2.10, p < 0.05$) (Task 7) and determining if a similar incident occurred in the past ($t(8) = -6.28, p < 0.05$) (Task 8).

Table 8-4 Tasks with Completion Times (seconds) for Each Condition (Pairs 1-4)

ID	1. Identify facts to support belief regarding child's performance		2. Determine average grade for specified subject area for school career (all years)		3. Determine grade for specified grade level and marking period		4. Determine if there are schedule conflicts for specific date	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	345	86	362	220	452	29	42	360
P2	111	157	84	226	164	33	30	42
P3	123	276	121	344	150	39	45	396
P4	152	127	146	139	214	58	36	106
P5	161	92	309	138	270	109	63	128
P6	144	191	81	91	83	38	26	84
P7	231	272	186	98	111	5	24	67
P8	65	168	225	93	168	53	45	55
P9	70	176	80	159	67	45	61	233
P10	242	126	176	60	190	15	62	75
P11	65	62	125	78	78	27	43	34
P12	62	217	67	165	180	36	22	148
P13	68	487	168	405	420	44	54	186
P14	111	73	374	119	50	43	28	143
P15	51	59	202	219	74	40	71	136
P16	56	127	224	400	17	61	39	86
P17	162	72	154	118	50	22	30	137
P18	165	131	107	190	101	46	35	47
P19	39	52	54	180	108	30	26	67
P20	53	121	269	209	188	49	47	370
P21	190	93	398	292	206	40	56	241
P22	151	132	171	436	166	48	40	234
P23	187	190	226	264	229	97	62	47
Mean	130.61	151.61	187.35	201.87	162.43	43.78	42.91	148.78
SD	74.41	94.32	97.75	107.32	106.09	22.34	14.18	106.84

Table 8-5 Tasks with Completion Times (seconds) for Each Condition (Pairs 5-8)

ID	5. Determine if recent grade is normal for student		6. Identify data in MSS/folder used to determine if the student's recent grades are normal, above average or below average based on his/her usual performance		7. Document trends about the student's grades from K through the current year		8. Determine if a similar incident has occurred in the past	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	233	667	55	29	274	139	45	393
P2	131	6	75	69	52	74	51	170
P3	68	59	61	84	117	347	48	169
P4	84	97	94	144	69	173	103	168
P5	150	67	111	55	47	128	39	72
P6	103	36	79	91	119	206	51	86
P7	87	101	51	82	129	91	70	120
P8	78	73	142	73	210	124	55	326
P9	82	102	74	34	77	152	53	118
P10	70	46	32	66	190	80	49	91
P11	66	7	22	18	29	56	59	76
P12	67	22	41	62	85	200	19	144
P13	59	65	75	29	50	93	65	363
P14	67	45	20	75	52	376	30	100
P15	41	41	43	54	150	154	65	312
P16	43	59	103	161	208	256	19	373
P17	124	48	109	38	238	85	63	156
P18	28	9	52	22	81	33	38	92
P19	45	48	38	27	39	139	30	161
P20	33	64	45	88	66	221	48	398
P21	202	109	219	89	59	149	71	244
P22	127	202	356	87	141	211	39	325
P23	136	48	215	114	93	222	189	300
Mean	92.35	87.87	91.83	69.17	111.96	161.26	56.48	206.83
SD	51.25	130.18	76.53	36.46	68.27	84.41	33.55	112.05

The comparison between the times to complete paired tasks 3, 4, 7, and 8 using

MyStudentScope and paper are presented in the graphs below (see Figure 8-2, Figure 8-3,

Figure 8-4 and Figure 8-5). With the exception one participant's completion time for

paired task 4, all participants completed paired tasks 3, 4 and 8 in less time using MyStudentScope than paper. Paired samples t tests find no significant difference between the MyStudentScope condition and the paper condition in the time it took to complete the other tasks (Task 1: $t(8) = -.79$, n. s.; Task 2: $t(8) = -.50$, n. s.; Task 5: $t(8) = .20$, n. s.; Task 6: $t(8) = 1.47$, n. s.).

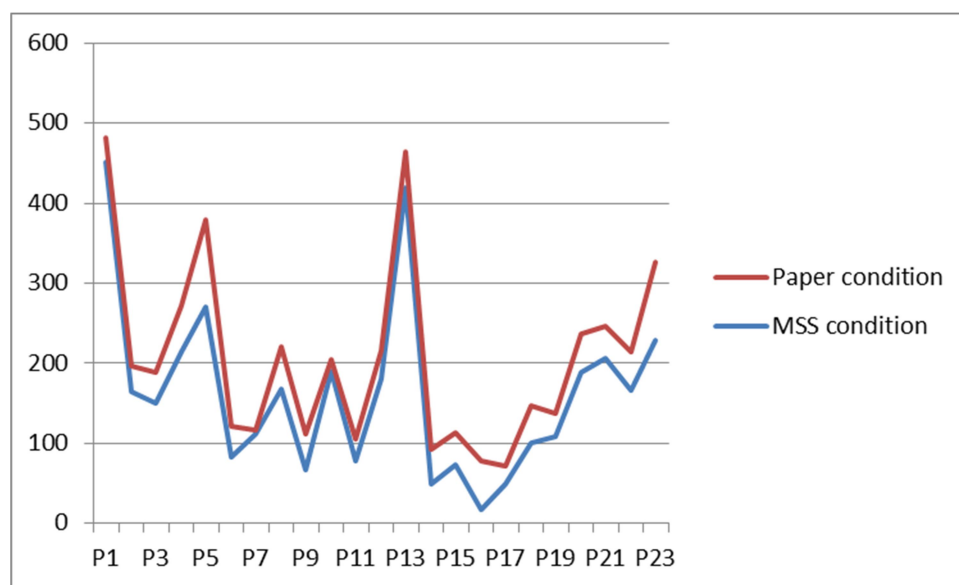


Figure 8-2 Completion Times (seconds) for Paired Task 3 - Determine Grade for Specified Grade Level and Marking Period

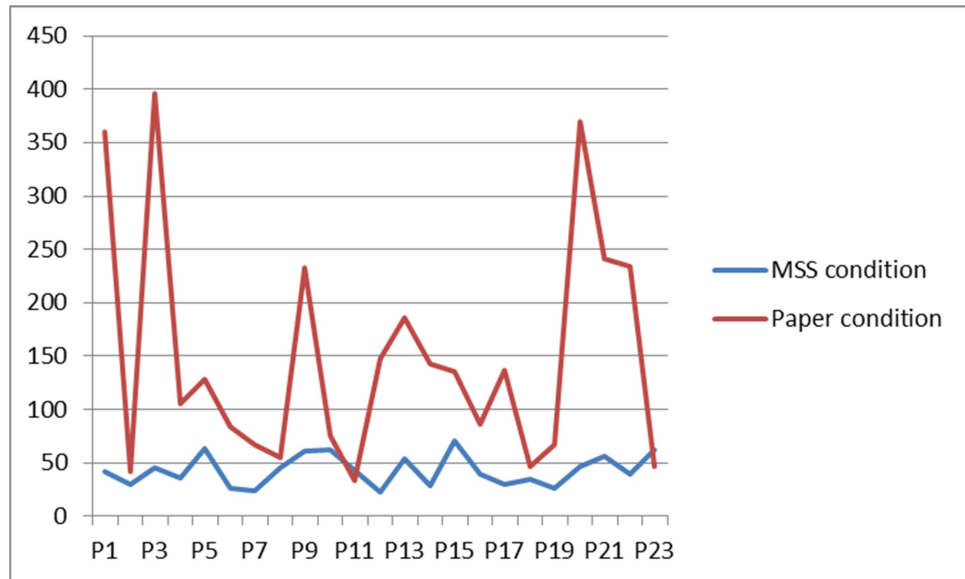


Figure 8-3 Completion Times (seconds) for Paired Task 4 - Determine if There are Schedule Conflicts for Specific Date

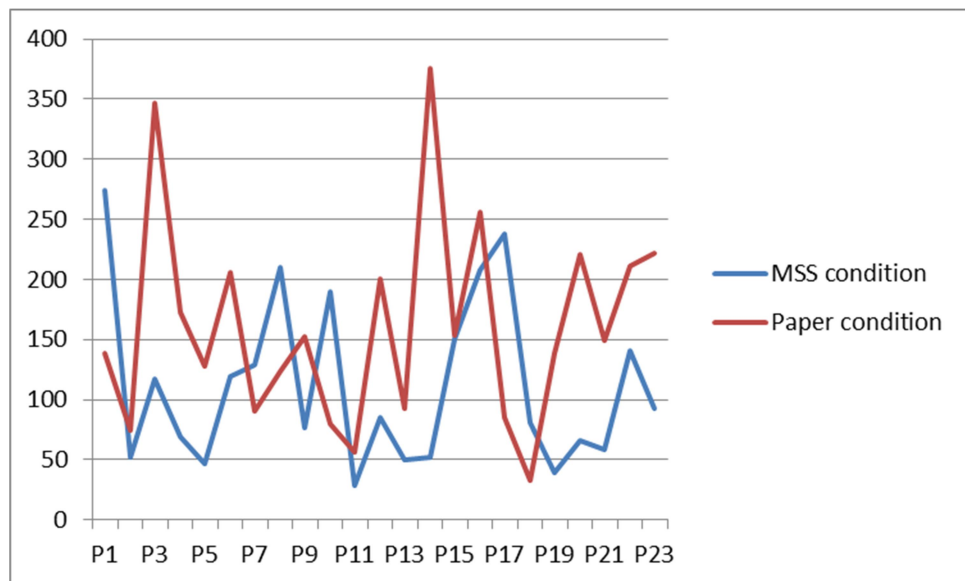


Figure 8-4 Completion Times (seconds) for Paired Task 7 - Document trends about the student's grades from K through the current year

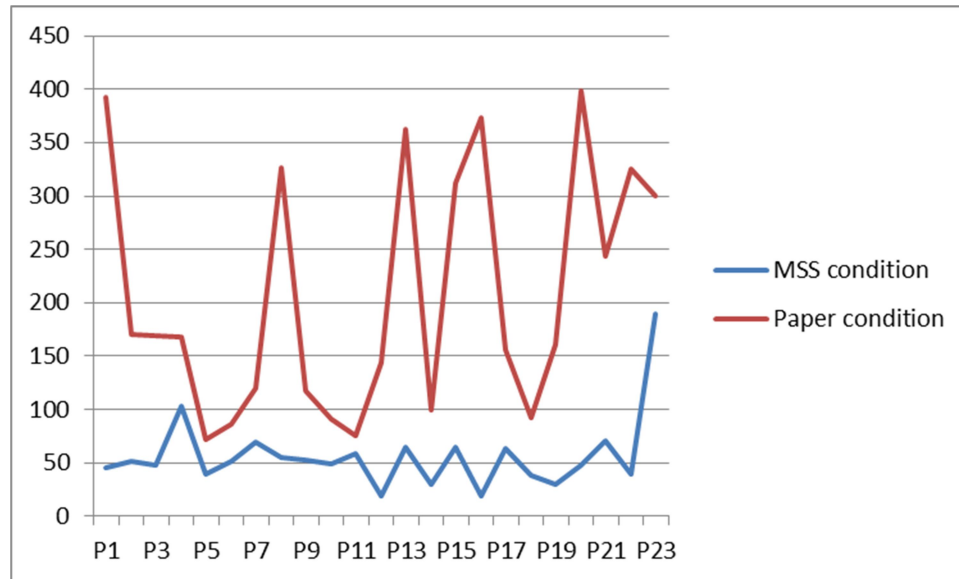


Figure 8-5 Completion Times (seconds) for Paired Task 8 - Determine if a Similar Incident Occurred in the Past

8.3.2 Success Rate

An indicator of the efficacy of using MyStudentScope to complete tasks versus paper is the rate with which participants completed paired tasks successfully under each condition. The success rate for the completion of each task is presented in tables. A successful entry indicates that the participant was able to find the desired information and/or complete the required action. Failure means the participant found incorrect information, failed to complete the required action or indicated by task response that he/she was unable to determine the answer to the task.

Table 8-6 Success and Failure Results Each Condition (Paired Tasks 1-4)

ID	1. Identify facts to support belief regarding child's performance		2. Determine average grade for specified subject area for school career (all years)		3. Determine grade for specified grade level and marking period		4. Determine if there are schedule conflicts for specific date	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	Success	Success	Success	Success	Success	Success	Success	Failure
P2	Success	Success	Success	Success	Success	Success	Success	Success
P3	Success	Success	Success	Success	Success	Success	Success	Success
P4	Success	Success	Success	Success	Success	Success	Success	Success
P5	Success	Success	Success	Success	Success	Success	Success	Success
P6	Success	Success	Success	Success	Success	Success	Success	Failure
P7	Success	Success	Success	Success	Success	Success	Success	Failure
P8	Success	Success	Success	Success	Success	Success	Success	Success
P9	Success	Success	Success	Success	Success	Success	Success	Failure
P10	Success	Success	Success	Success	Success	Success	Success	Success
P11	Success	Success	Success	Success	Success	Success	Success	Success
P12	Success	Success	Success	Success	Success	Success	Success	Success
P13	Success	Failure	Success	Success	Success	Success	Success	Failure
P14	Success	Success	Success	Failure	Success	Success	Failure	Failure
P15	Success	Success	Success	Success	Success	Success	Success	Success
P16	Success	Success	Success	Success	Success	Success	Success	Failure
P17	Success	Success	Success	Success	Success	Success	Success	Success
P18	Success	Success	Success	Success	Success	Success	Success	Failure
P19	Success	Success	Success	Success	Success	Success	Success	Success
P20	Success	Success	Success	Success	Success	Success	Success	Success
P21	Success	Success	Success	Success	Success	Success	Success	Success
P22	Success	Success	Success	Success	Success	Success	Success	Failure
P23	Success	Success	Success	Success	Success	Success	Success	Success
S	23	22	23	22	23	23	22	14
F	0	1	0	1	0	0	1	8

Table 8-7 Success and Failure Results Each Condition (Paired Tasks 5-8)

ID	5. Determine if recent grade is normal for student		6. Identify data in MSS/folder used to determine if the student's recent grades are normal, above average or below average based on his/her usual performance		7. Document trends about the student's grades from K through the current year		8. Determine if a similar incident has occurred in the past	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	Success	Success	Success	Success	Success	Success	Success	Failure
P2	Success	Success	Success	Success	Success	Success	Success	Success
P3	Success	Success	Success	Success	Success	Success	Success	Success
P4	Success	Success	Success	Success	Success	Success	Success	Success
P5	Success	Success	Success	Success	Success	Success	Success	Failure
P6	Success	Success	Success	Success	Success	Success	Success	Success
P7	Success	Success	Success	Success	Success	Success	Success	Failure
P8	Success	Success	Success	Success	Success	Success	Success	Success
P9	Success	Success	Success	Success	Success	Success	Success	Failure
P10	Success	Success	Success	Success	Success	Success	Success	Success
P11	Success	Success	Success	Success	Success	Success	Success	Failure
P12	Success	Success	Success	Success	Success	Success	Success	Success
P13	Success	Success	Success	Success	Success	Success	Success	Failure
P14	Success	Success	Success	Success	Success	Success	Success	Failure
P15	Success	Success	Success	Success	Success	Success	Success	Failure
P16	Success	Success	Success	Success	Success	Success	Success	Failure
P17	Success	Success	Success	Success	Success	Success	Success	Failure
P18	Success	Success	Success	Success	Success	Success	Success	Failure
P19	Success	Success	Success	Success	Success	Success	Success	Failure
P20	Success	Success	Success	Success	Success	Success	Success	Success
P21	Success	Success	Success	Success	Success	Success	Success	Success
P22	Success	Success	Success	Success	Success	Success	Success	Failure
P23	Success	Success	Success	Success	Success	Success	Success	Success
S	23	23	23	23	23	23	23	10
F	0	0	0	0	0	0	0	12

The majority of the failures were observed when users attempted to determine if there are schedule conflicts for specific date and determine if a similar incident had

occurred in the past using paper. Only one participant failed to complete one of those tasks using MyStudentScope. For all but that single instance, participants were able to successfully complete each task using MyStudentScope.

8.3.3 Pages Visited

An indicator of the efficiency of using MyStudentScope to complete tasks is the number of pages visited to perform each activity. In general, more pages visited indicate that the user did not know how to use the tool and was searching for the means to complete the task. In most cases this resulted in more time spent and therefore lower efficiency. An optimal path was defined for each MyStudentScope task. The optimal path consists of the minimum number of pages necessary to complete each task accurately.

The ratio between the number of actual pages visited and the optimal pages needed is an indicator of how effective the task is completed. Higher ratio indicates that users are substantially deviated from the optimal path. The lowest ratios were observed on three tasks: (a) determining if there were schedule conflicts for specific date for identifying (1.05), (b) recording an accomplishment (1.05), and (c) adding a new event to MyStudentScope (1.07). Most users navigated to the Events page and completed the task easily without any error. The highest ratio was observed on identifying and documenting trends in the student's academic performance (3.05). Users should have been able to complete the task by visiting the Dashboard only, but some participants visited as many as 11 pages before completing the task.

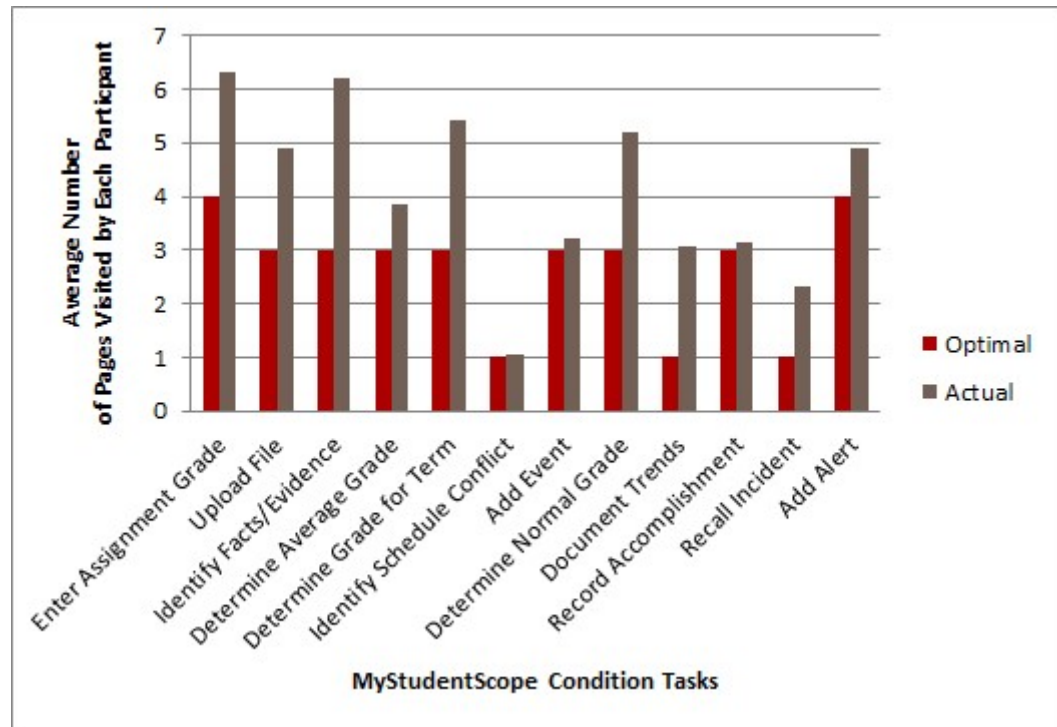


Figure 8-6 Optimal and Actual Pages Visited on average for Each MyStudentScope Condition Task

8.3.4 Observed User Frustration

Observed user frustration was measured by comments made by the participant while completing each task as well as the participant's body language. Non-verbal signs that signaled facilitators that participants were frustrated included changes in breathing like sighing or long exhales, rubbing the back of the neck or shaking the head. Time taken to complete a task was not automatically assumed to factor in to a participant's level of frustration because overall, they were very patient with completing task under both conditions.

The observed levels of user frustration and task completion times for the MyStudentScope tasks with equivalent paper tasks are reported in Table 8-8 and Table 8-

9. Based on observed behavior, the two most frustrating tasks were determining if there are schedule conflicts for specific date (Task 4) and determining if a similar incident has occurred in the past (Task 8) using paper. For these two tasks, 13 out of 23 participants had a high or very high observed level of frustration. This drastically contrasts with the fact that no participants experienced frustration at any level while completing paired task 4 using MyStudentScope. When completing the tasks, users made comments like, “I cannot figure out how to answer this!”, “[There are] a lot of paper to look through. This is a pain!” and “This is why we are stressed, right?”

Table 8-8 Observed Level of User Frustration (Pairs 1-4)

ID	1. Identify facts to support belief regarding child's performance		2. Determine average grade for specified subject area for school career (all years)		3. Determine grade for specified grade level and marking period		4. Determine if there are schedule conflicts for specific date	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	Low	None	High	High	High	None	None	High
P2	None	None	None	High	None	None	None	None
P3	Low	Low	None	High	High	None	None	High
P4	None	None	None	None	None	None	None	High
P5	None	None	Low	None	Low	None	None	None
P6	None	none	None	None	Low	none	None	None
P7	Low	High	Low	Low	None	None	None	High
P8	None	None	Low	None	Low	None	None	None
P9	None	None	Low	None	None	None	None	High
P10	None	None	Low	None	Low	None	None	None
P11	None	None	None	None	None	None	None	None
P12	None	None	None	High	Low	None	None	High
P13	None	High	None	Low	High	None	None	High
P14	Low	None	Low	High	None	None	None	High
P15	None	None	Low	Low	None	None	None	Low
P16	None	Low	Low	High	None	None	None	Low
P17	None	None	Low	High	None	None	None	High
P18	None	None	Low	None	None	None	None	None
P19	None	None	None	Low	None	None	None	High
P20	None	None	Low	Low	Low	None	None	High
P21	None	None	Low	High	Low	None	None	High
P22	None	None	None	High	Low	None	None	High
P23	None	None	None	High	None	None	None	None

Table 8-9 Observed Level of User Frustration (Pairs 5-8)

ID	5. Determine if recent grade is normal for student		6. Identify data in MSS/folder used to determine if the student's recent grades are normal, above average or below average based on his/her usual performance		7. Document trends about the student's grades from K through the current year		8. Determine if a similar incident has occurred in the past	
	MSS	Paper	MSS	Paper	MSS	Paper	MSS	Paper
P1	Low	High	None	None	High	None	None	High
P2	None	None	None	None	None	None	None	High
P3	None	None	None	None	None	High	None	High
P4	None	None	None	None	None	None	None	High
P5	None	None	None	None	None	None	None	None
P6	None	None	None	None	None	None	None	None
P7	None	None	None	None	Low	None	None	None
P8	None	None	None	None	None	None	None	Low
P9	None	None	None	None	None	High	None	Low
P10	None	None	None	None	Low	None	None	None
P11	None	None	None	None	None	None	None	None
P12	None	None	None	None	None	High	None	High
P13	None	None	None	None	None	None	None	High
P14	None	Low	None	None	None	Low	None	High
P15	None	None	None	None	None	Low	Low	High
P16	None	None	None	Low	Low	Low	None	High
P17	None	None	None	None	Low	Low	None	High
P18	None	None	None	None	None	None	None	None
P19	None	None	None	None	None	None	None	Very High
P20	None	None	None	None	None	High	None	Very High
P21	None	High	Low	None	None	High	None	High
P22	None	High	None	None	None	None	None	High
P23	None	None	None	None	None	None	Low	None

Figure 8-7 is a depiction of the observed user frustration during the study. The width of the red lines indicates the number times the level of frustration was observed. Red lines in the lower left quadrant (unshaded area) indicate that participants showed low or no frustration completing tasks using MyStudentScope and paper. Red lines in the upper left quadrant (blue shaded area) indicate that participants showed more frustration using paper than MyStudentScope. Red lines in the upper right quadrant (unshaded area) indicate that participants showed high or very high levels of frustration under both conditions. Red lines in the lower right quadrant (gray shaded area) indicate that participants showed more frustration using MyStudentScope than paper. The very wide red line in the lower left-most box indicates that there were nearly 100 tasks for which no frustration was observed in the paper and MyStudentScope condition. The thin red line in the gray shaded area indicates that there were a few incidents where completing tasks using MyStudentScope was observed to be more frustrating than paper. The thickness and number of lines in the blue shaded area compared with those in the gray shaded area show that overall, using paper was more frustrating to user than using MyStudentScope.

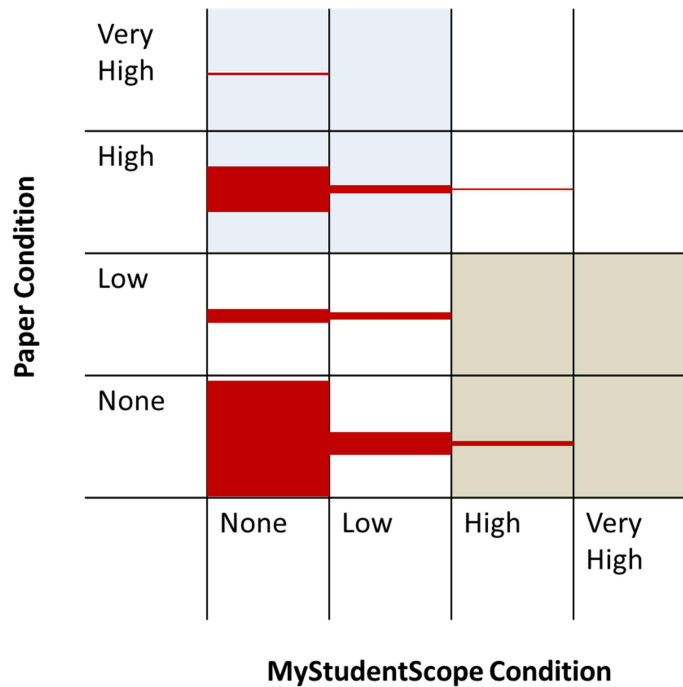


Figure 8-7 Observed Levels of User Frustration

8.3.5 Preferences Based on Survey Responses

To understand the participants’ preference for managing information and technology experience, each participant completed a questionnaire before the test. Full responses to the pre and post-test questionnaires are in Appendix A-16 – A-19. Responses to Likert scale questions from the pre-test questionnaire are summarized in Table 8-10. Most parents indicated that they use both paper and technology to manage information. All participants agreed that managing information regarding their children’s education is important (Question 4). All also began the study with a positive opinion of the ease with which technology can be used to manage their children’s educational information (Question 5).

Table 8-10 Summary of Answers to Pre-Test Questionnaire Likert Scale Questions (1 = Strongly Disagree, 5 = Strongly Agree)

ID	1.Tend to use paper to organize	2.Tend to use technology to organize	3.Manage education info like other info	4.Managing education info is important	5.Using technology to manage education info is easy
P1	4	3	4	4	4
P2	3	5	5	5	4
P3	3	4	3	3	3
P4	3	4	3	5	5
P5	1	5	5	5	5
P6	4	4	4	4	3
P7	4	5	5	5	4
P8	1	5	5	5	5
P9	4	2	4	4	3
P10	5	5	4	5	4
P11	3	4	4	5	4
P12	4	3	4	5	2
P13	1	5	3	5	5
P14	3	4	4	5	4
P16	4	4	4	3	3
P17	4	3	4	5	5
P18	4	2	3	4	3
P19	4	5	5	5	5
P20	4	4	4	5	3
P21	2	4	4	5	4
P22	3	5	4	4	3
P23	4	2	4	4	3

All participants answered a questionnaire after each test condition to evaluate

their experience. Although users experienced some frustration with MyStudentScope due to their lack of familiarity with it, the majority of the participant feedback was positive in favor of the portal. As shown in Table 8-11, by the responses to Question 1 the majority of participants, 19, agreed or strongly agreed that it was easier to use MyStudentScope than paper. The majority of participants, 20, also agreed or strongly agreed that they could be more productive using MyStudentScope than paper per response to Question 3.

Table 8-11. Summary of Answers to MyStudentScope v. Paper Post-Test Comparison Questionnaire Likert Scale Questions (1 = Strongly Disagree, 5 = Strongly Agree)

ID	1. MSS was easier to use than paper.	2. Completed task more quickly with paper.	3. More productive with MSS than paper.	4. Recovered from errors faster with paper.	5. Easier to find information with MSS.	6. More frustration using MSS than paper
P1	3	5	3	5	2	4
P2	5	2	4	2	4	2
P3	5	3	4	2	5	2
P4	3	3	4	4	4	4
P5	5	4	5	5	5	2
P6	5	1	5	1	5	1
P7	5	2	4	2	4	2
P8	5	2	4	2	5	1
P9	5	5	4	4	4	3
P10	4	2	4	2	4	2
P11	3	3	3	3	2	4
P12	5	1	5	1	5	1
P13	5	5	5	5	5	1
P14	5	1	4	4	5	1
P15	4	4	4	4	5	2
P16	5	2	5	1	5	1
P17	4	3	4	4	3	2
P18	5	5	5	1	5	1
P19	4	2	4	2	4	2
P20	4	3	4	2	4	4
P21	5	1	5	1	5	1
P22	4	2	4	2	4	2
P23	3	5	3	5	2	4

8.4 Summary

The results of the comprehensive study are consistent with the results of the preliminary studies in demonstrating that MyStudentScope is a viable solution for improving the efficiency and efficacy of parental management and use of their children's educational information. A significant difference in completion time was only realized

for half of the paired tasks completed using MyStudentScope and paper. However user responses in post-test questionnaires, observed levels of user frustration and the success rates all show that using MyStudentScope is generally less frustrating and more effective. The results of the comprehensive and other studies are discussed further in the following chapters.

CHAPTER NINE

Discussions and Implications

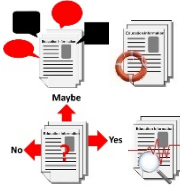
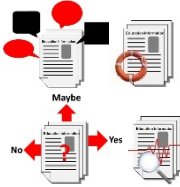
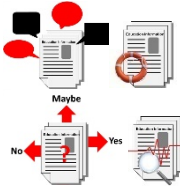
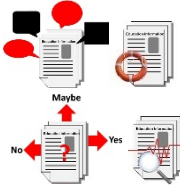

The previous chapters present the interviews and surveys to understand the challenges parents face when managing their children's educational information, the design and implementation of a web portal, MyStudentScope, to address those challenges, and the controlled experiments that examine the efficacy of the MyStudentScope web portal as compared to the traditional paper-based approach. Through the studies we collected data from participants regarding efficiency, user satisfaction, frustration and preference. Statistically significant differences were observed in task completion time between the MyStudentScope condition and the paper-based condition. The findings shed light on our understanding of how a technology solution could improve parental management of information regarding their children's education. They also provide implications for the design of technology solution to assist parents in the management of their children's information. This chapter discusses the implications of the results on various perspectives, the limitations of the research approach, and future research.




9.1 Summary of Results

The purpose of the research is to identify how parents are currently managing their children's information (Objective 1), identify challenges with the way parents currently manage and use information regarding their children's education (Objective 2), introduce a framework to help parents better manage children's educational information

(Objective 3), design and implement a technology-based solution in the form of a web portal aiming to mitigate those challenges, and compare and evaluate the efficiency of the web portal as compared to the traditional paper-based approach (Objective 4). Five hypotheses related to the objectives were defined and explored in this research. The mapping of the objectives to the hypotheses, functions and related research conducted is summarized in Table 9-1.

Table 9-1 Objective to Hypothesis to Function to Research Mapping

Research Objective	Hypothesis	Function	Research methods
Objective 1: Identify how parents are currently managing their children's educational information	H1: Most parents do not use any structured method to organize their child's educational information as a whole.		Surveys 1 and 2 Expert Interviews
Objective 2: Identify areas where challenges are perceived and/or realized for parents managing information regarding their children's education			Surveys 1 and 2 Expert Interviews
Objective 3: Introduce a framework to help parents better manage children's educational information			Literature Review/ Results from surveys and interviews
Objective 4a: Design and develop a web portal to aid parents in organizing educational information regarding their children	H2-H5: A technology-based educational information management solution tailored to parental needs will improve parents' use of the information.		Surveys 1 and 2 Literature Review Expert Interviews Pilot Study Study 1
Objective 4b: Evaluate the web portal to determine the level of effectiveness compared to current methods for parental management of information	H2: A technology-based educational information management solution tailored to parental needs will improve parents' ability to monitor their child's academic progress.		User Evaluation of MyStudentScope versus Paper Paired Tasks 2 and 3

Research Objective	Hypothesis	Function	Research methods
regarding their children's education	H3: A technology-based educational information management solution tailored to parental needs will improve parents' ability to retrieve or locate saved educational information regarding their child.		User Evaluation of MyStudentScope versus Paper Paired Tasks 1, 2, 3, 7 and 8.
	H4: A technology-based educational information management solution tailored to parental needs will improve parents' ability to reference examples when communicating or highlighting an achievement or concern that has been observed over time.		User Evaluation of MyStudentScope versus Paper Paired Task 1
	H5: A technology-based educational information management solution tailored to parental needs will improve parents' ability to compare educational information regarding their child and make informed decisions.		User Evaluation of MyStudentScope versus Paper Paired Tasks 4, 5, 6 and 7

9.1.1 Methods for Managing Children's Educational Information

Analysis of responses to Surveys 1 and 2 support the hypothesis that most parents do not use any structured methods to organize their child's educational information as a

whole. Survey 1 was developed to collect feedback from parents on challenges with managing their children's educational, financial, medical, social, recreational, extracurricular and other information. Survey 2 was developed to further investigate issues and challenges parents face in the management of information regarding their children's education in particular. In both surveys parents were asked, "What methods do you use to organize the items you keep?" In Survey 1, this was Question 6 of the Education Section. In Survey 2 this was Question 34. Parents were to check all applicable methods. Choices included, grouping the data by date, type, subject or source, information management tool, scanning documents to computer, email, printing to paper, none or other. Of the 81 responses received to the question, 39 from Survey 1 and 42 from Survey 2, none of the participants indicated that they use an information management tool to manage information regarding their children's education.

Because one of the fundamental ideas of improving information management from a PIM perspective is to centralize the data and/or organize it into a single library, we were interested in learning whether parents were attempting to do this. In Survey 2 Question 37 parents were asked, "What attempts have you made at combining the different types of data you receive?" Choices included scanning paper documents and filing them with electronic documents, printing electronic documents and filing them with paper documents, taking pictures of paper documents and filing them with electronic documents and other. Parents were once again able to select all applicable choices. 43% of the respondents indicated that they print electronic reports and file them with paper documents. In Question 41 parents were asked how often they review the archives to

determine if the information is still relevant or useful. Results indicated that information review for relevance is an issue because less than 40% of respondents review the data for relevancy at least once per year. In responses to another question in Survey 2, 43% of the respondents indicated that they save the education information they choose to keep for an indefinite period of time; while 24% keep the data for up to 5 years. The combination of the responses to the survey questions supports the hypothesis that most parents do not use any structured methods to organize their child's educational information as a whole.

9.1.2 Monitoring Children's Academic Progress

Two paired tasks were evaluated to test the hypothesis that a technology-based educational information management solution tailored to parental needs will improve parents' ability to monitor their child's academic progress. A statistically significant difference between task completion times using MyStudentScope and paper was only observed for one of the tasks: determining grade for specified grade level and marking period.

A high level of frustration, however, was observed for 2 participants while completing the task using MyStudentScope compared to no participants with high levels of frustration using paper. The majority of frustration with MyStudentScope was due to lack of experience with the MyStudentScope portal. Many turned to the user guide for assistance completing this task. No significant difference was observed between the MyStudentScope condition and the paper condition in the time it took to determine the average grade for a specified subject for all school years. The paper condition, however,

seemed to be more frustrating to users with 9 instances of high-level of frustration observed compared to none using MyStudentScope. Based on this research and analysis, we are not able to determine if monitoring a child's academic progress using MyStudentScope is more effective than paper.

9.1.3 Retrieving Children's Educational Information

Information retrieval using MyStudentScope is more effective than paper. There was a statistically significant difference in the time it took parents to complete three out of five information retrieval tasks between the MyStudentScope condition and the paper condition. As shown in Figure 8-2 and Figure 8-5, the task completion times determining grade for specified grade level and marking period and the time it took to determine if a similar incident occurred in the past was significantly shorter using MyStudentScope for all participants.

When designing the task to determine if a similar incident occurred previously for the MyStudentScope condition, we anticipated that participants would review information available on the Notes page to complete the task. Although the majority of participants completed the task as expected, four users looked for the information on the Events page. This behavior provided a different perspective regarding how parents may want to save and retrieve information regarding incidents and accomplishments that may or may not be related to a grade report.

The current implementation of the MyStudentScope Notes page allows parents to record an entry in a freeform text field. A new record is created for each entry. When a

user has a small number of entries, he/she is able to view them all at once on the Notes page. However, after a user has been using MyStudentScope for months or years, the entries may not be viewable on a single page. The Notes capability may be modified such that in addition to entering a freeform text, the user must also enter some metadata regarding the entry like subject, participants, or specific pre-defined tags. A search function can then be added that will allow the user to search for and retrieve previously entered notes based on the associated metadata tags.

Further, using MyStudentScope to retrieve or locate saved information regarding a child's education is less frustrating than using paper. Two (2) instances of high levels of frustration were observed while participants completed information retrieval tasks using MyStudentScope. This, however, is significantly less than the 18 instances of high or very high levels of frustration observed while participants completed the same tasks using paper. The hypothesis that a technology-based educational information management solution tailored to parental needs will improve parents' ability to retrieve or locate saved educational information regarding their child is supported.

9.1.4 Communication between Parents and Educators

No significant improvement in parental communication with educators was observed with the use of MyStudentScope. The difference in the time it took for parents to identify evidence to support their belief that a teacher's opinion of their child's penmanship was not accurate using MyStudentScope and paper was minimal. The hypothesis that a technology-based educational information management solution tailored

to parental needs will improve parents' ability to reference examples when communicating or highlighting an achievement or concern that has been observed over time was not supported by this research. The communication functionality in MyStudentScope needs to be expanded or refined in order to improve parents' communication with educators.

9.1.5 Decision Making Using Educational Information

Decision making using MyStudentScope is more efficient than paper. A statistical difference was observed in the time it took parents to complete two out of five information decision making tasks between MyStudentScope and paper. Determining if there are schedule conflicts for specific date and determining trends in student grades were the tasks for which significant differences in completion times were observed. The times to determine the schedule conflict using both methods are presented in Figure 8-3. As shown in the figure, the time it took participants to complete the task using paper was significantly higher than the time it took for MyStudentScope for the majority of the participants.

The highest level of user frustration was observed for users completing the decision making tasks using paper. Of the 23 participants, 12 experienced high levels of frustration while completing the task. No participants experienced frustration at any level while completing the same task using MyStudentScope. The hypothesis that a technology-based educational information management solution tailored to parental

needs will improve parents' ability to compare educational information regarding their child and make informed decisions is therefore supported.

9.2 Implications

The knowledge of the needs and preferences of parents when managing and using information regarding their children's education can help designers create more functional information management tools to support them. This knowledge could also be applied to the design of electronic student information systems available in most school systems, thereby extending their functionality to support both the needs of parents and educators. When designing these tools, developers should keep the recommendations of experts in education in mind. Per the experts, parents need to document teacher phone calls, keep records of requests for appointments by the parent or teacher, keep copies of school work/assignments especially those with which that parent or teacher has expressed concern, keep copies of any official reports that have been signed and dated, keep children's pre-school portfolio and retain baseline assessment results. Therefore any system built for parents should have a means for accepting and saving this information. Designers should keep in mind the reasons parents use the information they keep. This will drive the metadata parents are able to record with information saved in the system. Dates are particularly important because parents may be able to use a timeframe to recall or recovery information when needed. Designers should remember that parents may need to look across many years' worth of educational data at one time to get a good understanding of the child's progress. For this reason, graphical representations of the data should be designed and made available as much as possible.

Keeping in mind that the system is only as useful as the data in it, it is important for parents to remain diligent in recording information in MyStudentScope. The more information they add regarding grades, behaviors, and observations, the more clear the picture of their child's academic progress will be. This is especially important when entering metadata about uploaded documents, grades or comments. The data is important, but the details associated with it like the date, subject area, comments about whether the data point reflects a positive or negative situation are invaluable to being able to search for and recover the data efficiently in the future. Parents' awareness of the types of data they should retain regarding their children's education and having a means to manage that information as a whole may motivate more parents to more regularly review their children's academic progress. Having the ability to quickly detect trends and anomalies will also empower parents to be proactive in addressing concerns with respect to their child's educational development instead of relying on educators to point out potential areas of concern. Taking action early may improve their child's chances of educational success.

Educating children is team effort between the parent, student and educator. Informed, activated parents communicating effectively with educators will lead to improved outcomes in the child's academic development. Parents' use of MyStudentScope to remain aware of their children's progress and identify areas of concern with tangible evidence will allow them to have more meaningful and effective conversations about issues with the child's progress. Educators will benefit from parents' ability to provide actual evidence to support their views regarding their children's

academic progress or concerns instead of having to weed through anecdotal thoughts that may be difficult or impossible to verify. This clarity in communication and identification of issues will enable educators to more quickly develop a strategy to address concerns raised by the parent. Parents and teachers will be able to track whether changes are leading to the expected results with respect to the child's development.

9.3 Limitations and Future Research

The research only involved testing of novice users of MyStudentScope. The participants completed their interaction with MyStudentScope in only one session. In reality, parents must manage information regarding their children's education over many years. As stated by many participants in their post-test survey responses, with more experience using MyStudentScope their productivity may improve. A longitudinal study of several weeks or even months is needed to understand the true efficacy of the MyStudentScope web portal versus the traditional paper-based approach. A six month time period might be ideal because it will cover approximately three marking periods or terms for most schools. It is possible that significant difference might be observed with some of the tasks as users gain more experience in MyStudentScope. In addition, the longitudinal study will also allow the researchers to observe the learning curve with the MyStudentScope web portal and examine how the interaction patterns and strategies evolve as users gain more experience in MyStudentScope.

The study was conducted using manually generated test data based on fictional students. Parents have greater familiarity with their own child's academic performance,

extracurricular activities and other factors that impact their educational development.

Future studies are needed to investigate how parents use the MyStudentScope web portal in a realistic setting with actual data of their children. Those studies will allow the researchers to better gauge the effectiveness of the portal in managing the educational information.

The use of MyStudentScope web portal requires parents to enter personal information regarding their children's education in a database that is not owned by the parent. Although each parent must create a password that is used to protect his/her account, the database could be vulnerable to data breaches. No measures, beyond the use of a username and password, were implemented for privacy and security protection. We plan to investigate other means of mitigating privacy and security related risks that can be applied to MyStudentScope.

Finally, the MyStudentScope web portal was designed and implemented as a traditional website. With the rapid development in mobile computing, more and more educators and parents have started to use mobile devices and applications to communicate, access, and manage students' educational information. Compared to the traditional website, a mobile application delivered through a smart phone or other mobile devices could be easier to access in a variety of environments (e.g., work, public space)

in addition to home. Another advantage of mobile applications is the alert and notification functions that are usually easier to check than emails. We plan to design and implement a mobile application that delivers similar functions of the MyStudentScope web portal.

CHAPTER TEN

Conclusions

This dissertation reports empirical research that investigates the needs of parents in managing information regarding their children's education. The research is unique because it focuses on a population that experts agree have a profound influence on their children's academic progress, but for whom such research has not been conducted to determine their needs with respect to this important role. The findings of this research help to fill in the gap between the needs of parents in managing and using their children's educational information and their preferences when using a web portal solution to assist them in the related tasks.

This research provides insight regarding how parents currently receive information regarding their children's education, how they prefer to receive the information and the methods they currently use to attempt to combine and organize the information they save. Due to the lack of technology-based education information management tools built with the needs of parents in mind, parents do not currently use an information management system to assimilate and archive data regarding their children's education. The significant reliance on paper to archive the information combined with the infrequency with which the data is reviewed for relevance, further shows that parents do not use any structured methods to organize their child's educational information as a whole.

The Parental Information Management Model was introduced to drive parent activation with respect to their involvement in their children's education. The premise of the model is that an informed, activated parent having productive interactions with the education team will result in improved outcomes in the area of the child's academic development and progress. Parents become informed, and therefore activated, through the use of education decision support technologies that include reports, graphs, charts and reminders to assist parents in making decisions regarding the student's education and student-management support that consists of technologies that enable the parent to prepare for parent-teacher conferences and education program meetings, track grade reports, participate in their child's learning experience and provide input for courses of action to address concerns with their child's academic progress.

Through this research, we have developed the first educational information management system for parents to manage information regarding their children. The MyStudentScope web portal was developed to address gaps in the education decision support and student-management support components of the Parental Information Management Model. The design of MyStudentScope was informed by recommendations from experts in the field of education, needs and challenges expressed by parents and a pilot study. This research shows that the use of the web portal reduced the frustration parents face when retrieving and attempting to make decisions based on saved information regarding their children's education. Study results also indicate that parents are able to complete most tasks related to monitoring, recovery and decision making more efficiently using MyStudentScope than the paper-based approach. The observed

improvement in efficiency coupled with the overwhelming opinion of participants that they could be even more productive using MyStudentScope once they were more familiar with the tool, corroborates the fact that more efforts should be devoted to developing and designing new information management tools, or adding new functionality to existing electronic student information systems.

APPENDIX A

Sharman Dennis Interview Summary

Dennis, Sharman Word. Student Advocate. Global Enrichment Solutions.

Telephone Interview. 5 March 2013.

Sharman Word Dennis is the founder and CEO of Global Enrichment Solutions, LLC. Ms. Dennis is a motivational speaker and trainer who has conducted seminars and trainings for professionals and parents who are concerned about children who are different learners. She has postgraduate studies in special education a Master of Arts degree in education, specializing in special education, from George Washington University, and a Bachelor of Arts degree in education from Emmanuel College in Boston, Ma. She has extensive knowledge, expertise and experience working with young children, youth and adults. She taught elementary education, special education and has served as a University Professor at GW, Howard University and the University of the District of Columbia. She has served as a Guest lecturer at Prairie View A&M University in Texas. Ms. Dennis served two terms as a member of the President's Committee for People with Intellectual Disabilities PCPID. Ms. Dennis serves on the Board of Directors for Shared Horizons, Inc. and the Board of the Quality Trust for Individuals with Disabilities. She is the 2009 recipient of the Community Service Award (non-member) from Association of Black Psychologists (ABPsi) (from <http://www.myglobalenrichment.com>).

Interview Plan/Purpose:

Based on the services advertised on the Global Enrichment Solutions site, recommendations for the types of information parents should manage with respect to education, medical records and extracurricular activities of their children will be solicited. Although Ms. Dennis specializes in assisting parents of children with special needs, she also counsels/advises other parents.

Notes from Interview:

- Parents should make sure providers are communicating. Identify gaps and opportunities
- Based on experience, the following challenges with parents/families have been identified
 - Low-income families - parents may also have issues
 - Other families - coordination of services is challenges
- Few people look at all the systems involved in the child's development all together. Ms. Dennis trains parents to do this, starting with the physician. Many professionals do not look beyond their profession.
- Characteristics of two typical families for whom Ms. Dennis provides services
 - Sophisticated Family: Three children, one with an IAP, another who is a 'discouraged' student without a formal education assistance plan and the third child is an academically gifted student in college prep classes. The mother is a physician with an un-organized personality.

- Family without Internet Access: Six children, one child has a trust fund due to a birth accident, 4 children have an IAP and the other children do not have formal educational assistance plans. The mother is on public assistance.
- 4 Modules Training Session offered by Global Enrichment Solutions cover the following topics:
 - How do parents know a child is having trouble? How to address the issues?
 - Intervention programs in public schools
 - All federal programs (IDE, 504 plans, etc.)
 - How to access available programs
- Types of records parents should keep
 - Document teacher calls (date, purpose, etc.)
 - Keep records of request for appointments by parent and teacher
 - Keep a record of every interaction with teachers and/or providers
 - Keep a record of meetings attended
 - Keep a copies of any school work/assignments the parent is questioning
 - Keep a copy of anything that has been signed and dated (i.e. IEPs)
 - Pre-school children's portfolios
 - Examples of children's school work
- Young children (pre-school) generally have portfolios that contain samples of work from each week/month that are reviewed with parents monthly and provided to them at the end of the school year. The purpose of the portfolio is to show the child's development/progress throughout the school year.

- Keeping examples of children's work beyond preschool is important to explain issues, show decline or show progress.
- Parents need to understand that they have a right to review their child's educational folder/records. They must talk to the administrative office to find out what information can/cannot be removed from the record. The guidelines are usually set by the state.
- Parents should question comments from the teacher like, "Sally is *inappropriate* in class." Parents should ask seek clarification for these types of subjective comments as they may result in the insertion of questionable information on the child's record.
- Ms. Dennis does not believe any type of information regarding the child should be considered 'extra'. Each piece of information offers a potentially important detail.
- Ms. Dennis explained that in DC, the IEP is completed on the computer during the meeting. However, the educator is unable to provide the report to the parent or advocate electronically. This seems like a gap. Parents receive most IEP documentation in hard copy.
- The Katie Beckett Medicaid Program (KB) permits the state to ignore family income for certain children who are disabled. It provides benefits to certain children 18 years of age or less who qualify as disabled individuals and who live at home rather than in an institution. These children must meet specific criteria to be covered. Qualification is not based on medical diagnosis; instead it is based on the institutional level of care the child requires.

- Ms. Dennis stressed the importance of recreation and down time to the development of children.
 - She makes recommendations for camps to families based on parents' desires and children's needs.
 - Recommends fun activities like "Rules Free Day"
 - Use free rewards (ex. earn quality time with mommy)
 - Play games for fun
 - Play games to learn/re-enforce academic lessons (ex. play Shoots & Ladders to learn directions)
- The parent's responsibility is to help the child with socialization, not teach them what they should learn at school. Parents should help with homework, but other times try to teach through fun.

APPENDIX B

Chelsea Hill Interview Summary

Hill, Chelsea. Administrator. Public Elementary School in the State of Maryland.
Telephone Interview. 5 March 2013.

Chelsea Hill is a native of Maryland and has been working in education for 21 years. Her career started in the Maryland public school system in 1993. Mrs. Hill has served in numerous capacities within the profession: classroom teacher for grades Pre-K through 8, Mentor/Coach, Testing Coordinator, and Principal.

Interview Plan/Purpose:

Information regarding the types of data the school keeps about children and the methods by which parents are given access to the information will be requested. Also, based on Mrs. Hill's experience as a teacher and administrator, her recommendations regarding other information parents should track and/or be given by schools will be solicited.

Notes from Interview:

- In addition to report cards and progress reports, parents should keep
 - major assessments (ex. MSA)
 - benchmarks
 - suggestions for improvements from teachers
 - recommendations for screenings from teachers

- Benchmarks are assessments students take each quarter. Parents are able to get these reports from the teacher after each quarter. If not normally provided, the results should be requested.
- State assessments allow parents to see if their children are scoring below, at or above grade level. The MSA is taken in March. Parents usually receive notification by mail of the results in August. Copies of the student's results can also be requested from the school's test coordinator. MSA scores can be tracked from 3rd grade through 8th grade.
- Teachers required to enter at least two grades per week (ex. tests, classwork, homework, etc.) in the electronic student information system used by her school. The system calculates strengths and weaknesses in percentages.
- Mrs. Hill was not sure if the electronic student information system offers the capability to export information so that it could be saved outside of the program on the parent's computer. Parents can print from the electronic student information system.
- Parents should keep track of teacher suggestions for improvement/help for children including when teachers refer children for screenings.
 - Parents should not be afraid when teachers recommend children for screening; it is an opportunity to get children help they might need.
 - Tests reveal strengths and weaknesses.

APPENDIX C

Survey 1 Questionnaire

I. General Questions

1. What is your age?
☐ 20 or under ☐ 21 – 30 ☐ 31- 40 ☐ 41 -50 ☐ 51 or older
2. What is your gender?
☐ Female ☐ Male
3. How many children are in your household (0-18 years of age)?
☐ 0 ☐ 1 ☐ 2-3 ☐ 4-5 ☐ 6 or more
4. What is the age(s) of the child(ren) in your household? (list the age of every child)
5. Do(es) your child(ren) have any special medical or educational needs?
☐ Yes ☐ No
6. Do you have any difficulty in collecting information about your children from a third party (e.g., school, doctor's office) when needed?
☐ Yes ☐ No If yes, please explain:
7. Do you have any difficulty in sorting and storing your children's information?
☐ Yes ☐ No If yes, please explain:
8. Do you have any difficulty in retrieving your children's information when needed?
☐ Yes ☐ No If yes, please explain:
9. What types of information regarding your child/children do you manage? (check all that apply)
☐ Educational (Please complete Section II)
☐ Financial (Please complete Section III)
☐ Medical (Please complete Section IV)
☐ Social (Please complete Section V)
☐ Recreational/Extracurricular (Please complete Section VI)
☐ Other If other, please specify:

II. Educational Information

1. What types of educational information do you receive? (check all that apply)
☐ Report Cards ☐ Progress Reports ☐ IEPs

- ☐ 549 Plans ☐ Standardized Test Results ☐ Evaluations
☐ Correspondence ☐ Assignments/School Work ☐ Meeting Invitations
☐ Disciplinary Notices ☐ Provider Contact Info ☐ Other

If other, please specify:

2. From where do you receive educational information? (check all that apply)
- ☐ Teacher ☐ School office ☐ Learning Center/Tutor
☐ Support Teams ☐ Other If other, please specify:

3. How do you receive educational information? (check all that apply)
- ☐ Hardcopy/Printed Report brought home by child
☐ Electronically/Online ☐ Phone ☐ Mail
☐ Verbally from child ☐ Other If other, please specify:

4. How do you prefer to receive educational information? (check all that apply)
- ☐ Hardcopy/Printed Report brought home by child
☐ Electronically/Online ☐ Phone ☐ Mail
☐ Verbally from child ☐ Other If other, please specify:

5. Of the educational information you receive, which items do you keep? (check all that apply)
- ☐ Report Cards ☐ Progress Reports ☐ IEPs
☐ 549 Plans ☐ Standardized Test Results ☐ Evaluations
☐ Correspondence ☐ Assignments/School Work ☐ Meeting Invitations
☐ Disciplinary Notices ☐ Provider Contact Info ☐ Other
☐ None If other, please specify:

6. What methods do you use to organize the items you keep? (check all that apply)
- ☐ Paper File ☐ Electronic/Computer File ☐ Keep in Original package
☐ Group by Date ☐ Group by Type ☐ Group by Subject
☐ Group by Source ☐ Information Management Tool
☐ Scan to Computer ☐ Email ☐ Print to Paper
☐ None ☐ Other If other, please specify:

7. On average, how long do you save the information you choose to keep?
- ☐ Less than 1 year ☐ 1 year ☐ 2 – 5 years ☐ Indefinitely

8. On average, how often do you review/update your children's educational information?
- ☐ Once every week ☐ Once every month ☐ Once every semester
☐ Other

9. Have you ever requested access to or a copy of your child's education records?
☐ Yes ☐ No
10. With whom do you share your child's educational information? (check all that apply)
☐ Friends ☐ Educators ☐ Family
☐ Advocates ☐ No one ☐ Other If other, please specify:
11. What methods do you use to share your child's educational information? (check all that apply)
☐ Email ☐ Hardcopy/Printed Report ☐ Verbally
☐ Social Network ☐ Other ☐ None
 If other, please specify:
12. How sensitive do you perceive your child's educational information?
☐ Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)
☐ Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)
☐ Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
☐ Not Sensitive at all (Should be posted on public website for review by anyone interested)

III. Financial Information

1. What types of financial information about your children do you manage? (check all that apply)
☐ Bank Accounts ☐ College Savings Plans ☐ Trust Funds
☐ Childcare Expenses ☐ Tuition ☐ Extracurricular Fees
☐ Allowance ☐ Other If other, please specify:
2. From where do you receive financial information? (check all that apply)
☐ Banks ☐ Schools ☐ Trusts
☐ Childcare Provider ☐ Other If other, please specify:
3. How do you receive financial information? (check all that apply)
☐ Phone ☐ Hardcopy/Printed Report ☐ Electronically/Online
☐ Mail ☐ Verbally ☐ Other
 If other, please specify:
4. How do you prefer to receive financial information? (check all that apply)
☐ Phone ☐ Hardcopy/Printed Report ☐ Electronically/Online

☐ Mail ☐ Verbally ☐ Other

If other, please specify:

5. Of the financial information you receive, for which do you retain documentation such as statements and/or notices? (check all that apply)

☐ Bank Accounts ☐ College Savings Plans ☐ Trust Funds
☐ Childcare Expenses ☐ Tuition ☐ Extracurricular Fees
☐ Allowance ☐ Other ☐ None

If other, please specify:

6. What methods do you use to organize the items you keep? (check all that apply)

☐ Paper File ☐ Electronic/Computer File ☐ Keep in Original package
☐ Email ☐ Group by Date ☐ Group by Type
☐ Group by Subject ☐ None ☐ Group by Source
☐ Information Management Tool ☐ Scan to Computer
☐ Print to Paper ☐ Other If other, please specify:

7. On average, how long do you save the information you choose to keep?

☐ Less than 1 year ☐ 1 year ☐ 2 – 5 years ☐ Indefinitely

8. On average, how often do you review/update your children's financial information?

☐ Once every week ☐ Once every month ☐ Once every quarter
☐ Other

9. Do you share your child's financial information?

☐ Yes ☐ No

10. With whom do you share your child's financial information? (check all that apply)

☐ Friends ☐ Family ☐ Financial Advisor
☐ Other ☐ No one If other, please specify:

11. What methods do you use to share your child's financial information? (check all that apply)

☐ Email ☐ Hardcopy/Printed Report ☐ Verbally
☐ Social Network ☐ Other ☐ None

If other, please specify:

12. How sensitive do you perceive your child's financial information?
- ☐ Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)
 - ☐ Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)
 - ☐ Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
 - ☐ Not Sensitive at all (Should be posted on public website for review by anyone interested)

IV. Medical Information

1. What types of medical information do you manage? (check all that apply)

<input type="checkbox"/> Allergies	<input type="checkbox"/> Dates of Tests/Screenings
<input type="checkbox"/> Medications	<input type="checkbox"/> Dates Major Illness/Surgery
<input type="checkbox"/> Preventive Care Plans	<input type="checkbox"/> Provider Contact Information
<input type="checkbox"/> Researched Information	<input type="checkbox"/> Other If other, please specify:

2. From where do you receive medical information? (check all that apply)

<input type="checkbox"/> Primary Care Physician	<input type="checkbox"/> Medical Websites (e.g. WebMD)
<input type="checkbox"/> Specialist	<input type="checkbox"/> Pharmacy <input type="checkbox"/> Other

 If other, please specify:

3. How do you receive medical information? (check all that apply)

<input type="checkbox"/> Phone	<input type="checkbox"/> Hardcopy/Printed Report
<input type="checkbox"/> Electronically/Online	<input type="checkbox"/> Mail <input type="checkbox"/> Verbally
<input type="checkbox"/> Other	If other, please specify:

4. How do you prefer to receive medical information? (check all that apply)

<input type="checkbox"/> Phone	<input type="checkbox"/> Hardcopy/Printed Report
<input type="checkbox"/> Electronically/Online	<input type="checkbox"/> Mail <input type="checkbox"/> Verbally
<input type="checkbox"/> Other	If other, please specify:

5. What methods do you use to organize the items you keep? (check all that apply)

<input type="checkbox"/> Paper File	<input type="checkbox"/> Electronic/Computer File
<input type="checkbox"/> Keep in Original package	<input type="checkbox"/> Email <input type="checkbox"/> Group by Date
<input type="checkbox"/> Group by Type	<input type="checkbox"/> Group by Subject <input type="checkbox"/> None
<input type="checkbox"/> Group by Source	<input type="checkbox"/> Information Management Tool
<input type="checkbox"/> Scan to Computer	<input type="checkbox"/> Print to Paper <input type="checkbox"/> Other

 If other, please specify:

6. On average, how long do you save the information you choose to keep?

☐ Less than 1 year ☐ 1 year ☐ 2 – 5 years ☐ Indefinitely

7. Have you ever requested access to or a copy of your child's medical records?

☐ Yes ☐ No

8. On average, how often do you review/update your children's medical records?

☐ Once every week ☐ Once every month ☐ Once every year

☐ Other If other, please specify:

9. How sensitive is your child's medical information?

☐ Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)

☐ Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)

☐ Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)

☐ Not Sensitive at all (Should be posted on public website for review by anyone interested)

V. Social Information

1. What types of social information do you manage? (check all that apply)

☐ Pictures/Photos ☐ Contacts (Friends/Parents) ☐ Play Dates

☐ Wish Lists ☐ Party Invitations ☐ Party Planning

☐ Other If other, please specify:

2. From where do you receive social information? (check all that apply)

☐ School ☐ Family ☐ Friends

☐ Child ☐ Camera ☐ Email

☐ Smart Phone/Device ☐ Other If other, please specify:

3. How do you receive social information? (check all that apply)

☐ Phone ☐ Hardcopy/Printed Report

☐ Electronically/Online ☐ Mail ☐ Verbally

☐ Other If other, please specify:

4. Of the social information you receive, which items do you keep? (check all that apply)

☐ Pictures/Photos ☐ Contacts (Friends/Parents) ☐ Play Dates

☐ Wish Lists ☐ Party Invitations ☐ Party Planning

☐ Other If other, please specify:

5. What methods do you use to organize the items you keep? (check all that apply)
- | | | |
|---|--|--|
| <input type="checkbox"/> Paper File | <input type="checkbox"/> Electronic/Computer File | |
| <input type="checkbox"/> Keep in Original package | <input type="checkbox"/> Email | <input type="checkbox"/> Group by Date |
| <input type="checkbox"/> Group by Type | <input type="checkbox"/> Group by Subject | <input type="checkbox"/> None |
| <input type="checkbox"/> Group by Source | <input type="checkbox"/> Information Management Tool | |
| <input type="checkbox"/> Scan to Computer | <input type="checkbox"/> Print to Paper | <input type="checkbox"/> Other |
- If other, please specify:
6. On average, how long do you save the information you choose to keep?
- | | | | |
|---|---------------------------------|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> Less than 1 year | <input type="checkbox"/> 1 year | <input type="checkbox"/> 2 – 5 years | <input type="checkbox"/> Indefinitely |
|---|---------------------------------|--------------------------------------|---------------------------------------|
7. How sensitive do you perceive your child's social information?
- ☐ Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)
- ☐ Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)
- ☐ Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
- ☐ Not Sensitive at all (Should be posted on public website for review by anyone interested)

VI. Recreational/Extracurricular Information

1. What types of information regarding your child's recreational/extracurricular activities do you manage? (check all that apply)
- | | |
|---|---|
| <input type="checkbox"/> Provider Contact Information | <input type="checkbox"/> Practice/Rehearsal Dates |
| <input type="checkbox"/> Game/Performance/Event Dates | <input type="checkbox"/> Required Uniform/Costume |
| <input type="checkbox"/> Required Equipment | <input type="checkbox"/> Game/Performance/Event Locations |
| <input type="checkbox"/> Team Member Contact | <input type="checkbox"/> Fees |
| <input type="checkbox"/> Other | If other, please specify: |
2. From where do you receive information regarding your child's recreational / extracurricular activities? (check all that apply)
- | | | |
|--|---|----------------------------------|
| <input type="checkbox"/> School | <input type="checkbox"/> Coach/Instructor | <input type="checkbox"/> Friends |
| <input type="checkbox"/> Other Parents | <input type="checkbox"/> Child | <input type="checkbox"/> Other |
- If other, please specify:
3. How do you receive information regarding your child's recreational/extracurricular activities? (check all that apply)
- | | |
|--|--|
| <input type="checkbox"/> Phone | <input type="checkbox"/> Hardcopy/Printed Report |
| <input type="checkbox"/> Electronically/Online | <input type="checkbox"/> Mail |
| <input type="checkbox"/> Verbally | <input type="checkbox"/> Other |
- If other, please specify:

4. Of the information regarding your child's recreational/extracurricular you receive, which items do you keep? (check all that apply)
- ☐ Provider Contact Information ☐ Practice/Rehearsal Dates
- ☐ Required Uniform/Costume ☐ Game/Performance/Event Dates
- ☐ Team Member Contact ☐ Required Equipment
- ☐ Game/Performance/Event Locations
- ☐ Fees ☐ Other If other, please specify:
5. What methods do you use to organize the items you keep? (check all that apply)
- ☐ Paper File ☐ Electronic/Computer File
- ☐ Keep in Original package ☐ Email ☐ Group by Date
- ☐ Group by Type ☐ Group by Subject ☐ None
- ☐ Group by Source ☐ Information Management Tool
- ☐ Scan to Computer ☐ Print to Paper ☐ Other
- If other, please specify:
6. On average, how long do you save the information you choose to keep?
- ☐ Less than 1 year ☐ 1 year ☐ 2 – 5 years ☐ Indefinitely
7. How sensitive do you perceive your child's recreational/extracurricular information?
- ☐ Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)
- ☐ Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)
- ☐ Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
- ☐ Not Sensitive at all (Should be posted on public website for review by anyone interested)

VII. Conclusion

Thank you for participating in the survey.

Are you available for a phone interview? If yes, please provide your contact information.

Name:

Telephone Number:

If we may contact you for additional input or an interview, please provide the following:

Name:

Telephone Number:

Email Address:

APPENDIX D

Survey 1 Responses

Q1. Do you agree to participate?			
Count	Percent		
45	100.00%	<div><div style="width: 100%;"></div></div>	Yes, I agree.
0	0.00%	<div><div style="width: 0%;"></div></div>	No, I do not agree.
45	Respondents		

Q2. What is your age?			
Count	Percent		
0	0.00%	<div><div style="width: 0%;"></div></div>	20 or under
5	11.36%	<div><div style="width: 11.36%;"></div></div>	21 - 30
19	43.18%	<div><div style="width: 43.18%;"></div></div>	31 - 40
14	31.82%	<div><div style="width: 31.82%;"></div></div>	41 - 50
6	13.64%	<div><div style="width: 13.64%;"></div></div>	51 or older
44	Respondents		

Q3. What is your gender?			
Count	Percent		
30	68.18%	<div><div style="width: 68.18%;"></div></div>	Female
14	31.82%	<div><div style="width: 31.82%;"></div></div>	Male
44	Respondents		

Q4. How many children are in your household (0 - 18 years of age)?			
Count	Percent		
2	4.55%	<div><div style="width: 4.55%;"></div></div>	0
13	29.55%	<div><div style="width: 29.55%;"></div></div>	1
26	59.09%	<div><div style="width: 59.09%;"></div></div>	2 - 3
2	4.55%	<div><div style="width: 4.55%;"></div></div>	4 - 5
1	2.27%	<div><div style="width: 2.27%;"></div></div>	6 or more
44	Respondents		

Q5. What is/are the age(s) of the child(ren) in your household? (List the age of every child)			
Count	Percent		
39	100.00%	<div></div>	
Count	Percent		
1	2.56%	<div></div>	1 3 15
1	2.56%	<div></div>	1. 4 yrs 2. 20 months 3. 20 months
1	2.56%	<div></div>	10 12
2	5.13%	<div></div>	10 8
1	2.56%	<div></div>	10,13 ,21
1	2.56%	<div></div>	11 3/4, 9 1/2, 7 3/4
1	2.56%	<div></div>	13
1	2.56%	<div></div>	13, 11

1	2.56%	<div></div>	14 10 7 3 2 1
1	2.56%	<div></div>	14 months
1	2.56%	<div></div>	15 16
1	2.56%	<div></div>	15 11 8
1	2.56%	<div></div>	15 15 8
1	2.56%	<div></div>	16
1	2.56%	<div></div>	16 (Can you believe it?)
1	2.56%	<div></div>	16, 15, 13
1	2.56%	<div></div>	16, 18
1	2.56%	<div></div>	17
3	7.69%	<div></div>	2
1	2.56%	<div></div>	2 and 5
1	2.56%	<div></div>	2 months
1	2.56%	<div></div>	24, 12, 12, 12
1	2.56%	<div></div>	3 and 4
1	2.56%	<div></div>	3 1
1	2.56%	<div></div>	3,1
1	2.56%	<div></div>	3,4
1	2.56%	<div></div>	4 and 5.5
1	2.56%	<div></div>	5
1	2.56%	<div></div>	5 & 7
1	2.56%	<div></div>	8
1	2.56%	<div></div>	8 and 6
1	2.56%	<div></div>	8 mo, 4 years

1	2.56%	<div></div>	8 year old girl 11 year old boy
1	2.56%	<div></div>	8 years old
1	2.56%	<div></div>	My child is 14 months old.
1	2.56%	<div></div>	Son - 16 years old Daughter - 14 years old
39 Respondents			

Q6. Do(es) your child(ren) have any special medical or educational needs?			
Count	Percent		
13	33.33%	<div></div>	Yes
26	66.67%	<div></div>	No
39 Respondents			

Q7. What types of information regarding your child/children do you manage? (Check all that apply)			
Count	Respondent %	Response %	
33	84.62%	18.86%	<div></div> Educational
35	89.74%	20.00%	<div></div> Financial
37	94.87%	21.14%	<div></div> Medical
33	84.62%	18.86%	<div></div> Recreational/Extracurricular
33	84.62%	18.86%	<div></div> Social
4	10.26%	2.29%	<div></div> Other (please specify)
Count	Percent		
1	25.00%	<div></div>	Everyday care
1	25.00%	<div></div>	photographs
1	25.00%	<div></div>	Religious
1	25.00%	<div></div>	You name it
39 Respondents			
175 Responses			

Q8. Do you have any difficulty in collecting information about your children from a third party (e.g., school, doctor's office) when needed?			
Count	Percent		
3	7.69%	<div></div>	Yes (please explain)
Count	Percent		
1	33.33%	<div></div>	Doctors Office- Long turn around and scheduling conflicts retrieving information
1	33.33%	<div></div>	It is hard to keep all the medical records straight. Rarely do we get a nice printout of everything so we have to maintain the complete record ourselves. Also, the doctors are not always willing to share the details. School records are better but not great. Both Dr's and school information is organized using hardcopy papers and not electronically.
36	92.31%	<div></div>	No
39 Respondents			

Q9. Do you have any difficulty in sorting and storing your children's information?			
Count	Percent		
4	10.26%	<div><div></div></div>	Yes (please explain)
Count	Percent		
1	25.00%	<div><div></div></div>	Keeping all the various apptments up to date
1	25.00%	<div><div></div></div>	Overwhelming amount of paperwork required for daycare and school registration, insurance dealings, school notifications (and we just started kindergarten!). In addition to that is how to organize and store all the wonderful memories captured in photographs and kids artwork.
1	25.00%	<div><div></div></div>	there's already lots to keep track of, and they often require separate individual accounts.
1	25.00%	<div><div></div></div>	We live in an electronic age yet my child's records for school and medical are still paper based.
35	89.74%	<div><div></div></div>	No
39	Respondents		

Q10. Do you have any difficulty in retrieving your children's information when needed?			
Count	Percent		
6	15.38%	<div><div></div></div>	Yes (please explain)
Count	Percent		
1	16.67%	<div><div></div></div>	Have to go through papers to find the correct information.
1	16.67%	<div><div></div></div>	occasionally if I have been organized or can't find an email that I need
1	16.67%	<div><div></div></div>	Sometimes required forms are misplaced by us or the third party requiring a do-over.
1	16.67%	<div><div></div></div>	Sometimes the school "blackboard" like website is difficult to navigate.
1	16.67%	<div><div></div></div>	yes because i recently moved to a different township, hence i had to change their medical doctors and i had difficult in retrieving their history from the old one to the new one.
33	84.62%	<div><div></div></div>	No
39	Respondents		

Q11. What types of educational information do you receive? (Check all that apply)				
Count	Respondent %	Response %		
25	78.13%	12.69%	<div><div></div></div>	Report cards
26	81.25%	13.20%	<div><div></div></div>	Progress reports
11	34.38%	5.58%	<div><div></div></div>	IEPs
3	9.38%	1.52%	<div><div></div></div>	549 Plans
21	65.63%	10.66%	<div><div></div></div>	Standardized test results
23	71.88%	11.68%	<div><div></div></div>	Assignments/school work
22	68.75%	11.17%	<div><div></div></div>	Correspondence
18	56.25%	9.14%	<div><div></div></div>	Evaluations
21	65.63%	10.66%	<div><div></div></div>	Meeting invitations
13	40.63%	6.60%	<div><div></div></div>	Disciplinary notices
9	28.13%	4.57%	<div><div></div></div>	Provider contact info
5	15.63%	2.54%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	20.00%	<div><div></div></div>	accident reports
	1	20.00%	<div><div></div></div>	Children not old enough for school
	1	20.00%	<div><div></div></div>	Daily status reports
	1	20.00%	<div><div></div></div>	None
	1	20.00%	<div><div></div></div>	What they do in daycare
32	Respondents			
197	Responses			

Q12. From where do you receive educational information? (Check all that apply)				
Count	Respondent %	Response %		
28	87.50%	41.79%	<div><div></div></div>	Teacher
19	59.38%	28.36%	<div><div></div></div>	School office
6	18.75%	8.96%	<div><div></div></div>	Learning Center/Tutor
10	31.25%	14.93%	<div><div></div></div>	Support Teams
4	12.50%	5.97%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	25.00%	<div><div></div></div>	Children not old enough for school
	1	25.00%	<div><div></div></div>	Daycare
	1	25.00%	<div><div></div></div>	None
	1	25.00%	<div><div></div></div>	online (parent connect)
32	Respondents			
67	Responses			

Q13. How do you receive educational information? (Check all that apply)				
Count	Respondent %	Response %		
26	81.25%	25.00%	<div><div></div></div>	Hard copy/printed report brought home by child
24	75.00%	23.08%	<div><div></div></div>	Electronically/online
17	53.13%	16.35%	<div><div></div></div>	Phone
15	46.88%	14.42%	<div><div></div></div>	Mail
18	56.25%	17.31%	<div><div></div></div>	Verbally from child
4	12.50%	3.85%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	25.00%	<div><div></div></div>	Agenda Book
	1	25.00%	<div><div></div></div>	Children not old enough for school
	1	25.00%	<div><div></div></div>	mobile device
	1	25.00%	<div><div></div></div>	None
32	Respondents			
104	Responses			

Q14. How do you prefer to receive educational information? (Check all that apply)				
Count	Respondent %	Response %		
20	62.50%	28.99%	<div><div></div></div>	Hard copy/printed report brought home by child
27	84.38%	39.13%	<div><div></div></div>	Electronically/online
6	18.75%	8.70%	<div><div></div></div>	Phone
7	21.88%	10.14%	<div><div></div></div>	Mail
7	21.88%	10.14%	<div><div></div></div>	Verbally from child
2	6.25%	2.90%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	50.00%	<div><div></div></div>	Children not old enough for school
	1	50.00%	<div><div></div></div>	None
32	Respondents			
69	Responses			

Q15. Of the educational information you receive, which items do you keep? (Check all that apply)				
Count	Respondent %	Response %		
23	71.88%	17.56%	<div><div></div></div>	Report cards
22	68.75%	16.79%	<div><div></div></div>	Progress reports
10	31.25%	7.63%	<div><div></div></div>	IEPs
4	12.50%	3.05%	<div><div></div></div>	549 Plans
18	56.25%	13.74%	<div><div></div></div>	Standardized test results
11	34.38%	8.40%	<div><div></div></div>	Assignments/school work
7	21.88%	5.34%	<div><div></div></div>	Correspondence
15	46.88%	11.45%	<div><div></div></div>	Evaluations
4	12.50%	3.05%	<div><div></div></div>	Meeting invitations
6	18.75%	4.58%	<div><div></div></div>	Disciplinary notices
7	21.88%	5.34%	<div><div></div></div>	Provider contact info
2	6.25%	1.53%	<div><div></div></div>	Other (please specify)
Count	Percent			
1	50.00%	<div><div></div></div>	Children not old enough for school	
1	50.00%	<div><div></div></div>	Daily status reports	
2	6.25%	1.53%	<div><div></div></div>	None
32	Respondents			
131	Responses			

Q16. What methods do you use to organize the items you keep? (Check all that apply)				
Count	Respondent %	Response %		
25	78.13%	34.72%	<div><div></div></div>	Paper file
11	34.38%	15.28%	<div><div></div></div>	Electronic/computer file
4	12.50%	5.56%	<div><div></div></div>	Keep in original package
4	12.50%	5.56%	<div><div></div></div>	Group by date
3	9.38%	4.17%	<div><div></div></div>	Group by type
2	6.25%	2.78%	<div><div></div></div>	Group by subject
1	3.13%	1.39%	<div><div></div></div>	Group by source
2	6.25%	2.78%	<div><div></div></div>	Scan to computer
0	0.00%	0.00%	<div><div></div></div>	Information management tool
13	40.63%	18.06%	<div><div></div></div>	E-mail
3	9.38%	4.17%	<div><div></div></div>	Print to paper
3	9.38%	4.17%	<div><div></div></div>	Other (please specify)
Count	Percent			
1	33.33%	<div><div></div></div>	binder	
1	33.33%	<div><div></div></div>	not the one who does the filing	
1	33.33%	<div><div></div></div>	Pile of papers	
1	3.13%	1.39%	<div><div></div></div>	None
32	Respondents			
72	Responses			

Q17. On average, how long do you save the information you choose to keep?			
Count	Percent		
3	9.38%	<div><div></div></div>	Less than 1 year
5	15.63%	<div><div></div></div>	1 year
7	21.88%	<div><div></div></div>	2 - 5 years
17	53.13%	<div><div></div></div>	Indefinitely
32	Respondents		

Q18. On average, how often do you review/update your children's educational information?			
Count	Percent		
6	18.75%	<div><div></div></div>	Once every week
8	25.00%	<div><div></div></div>	Once every month
6	18.75%	<div><div></div></div>	Once every semester
12	37.50%	<div><div></div></div>	Other (please specify)
Count	Percent		
1	8.33%	<div><div></div></div>	annually
1	8.33%	<div><div></div></div>	As needed
1	8.33%	<div><div></div></div>	Children not old enough for school
1	8.33%	<div><div></div></div>	every weekday
1	8.33%	<div><div></div></div>	everyday
1	8.33%	<div><div></div></div>	I keep everything
1	8.33%	<div><div></div></div>	None
1	8.33%	<div><div></div></div>	Question is unclear. Are you asking how often to I review info that I keep?
1	8.33%	<div><div></div></div>	rarely, my oldest child is in pre-school and receives minimal information.
1	8.33%	<div><div></div></div>	They don't go to school yet
1	8.33%	<div><div></div></div>	varies...depends on issues usually every couple of weeks
1	8.33%	<div><div></div></div>	whenever it shows up
32	Respondents		

Q19. Have you ever requested access to or a copy of your child's education records?			
Count	Percent		
17	53.13%	<div><div></div></div>	Yes
15	46.88%	<div><div></div></div>	No
32	Respondents		

Q20. With whom do you share your child's educational information? (Check all that apply)				
Count	Respondent %	Response %		
5	15.63%	8.62%	<div><div></div></div>	Friends
23	71.88%	39.66%	<div><div></div></div>	Family
18	56.25%	31.03%	<div><div></div></div>	Educators (teachers, tutors, etc.)
7	21.88%	12.07%	<div><div></div></div>	Advocates
3	9.38%	5.17%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	33.33%	<div><div></div></div>	Children not old enough for school
	1	33.33%	<div><div></div></div>	colleges
	1	33.33%	<div><div></div></div>	dr
2	6.25%	3.45%	<div><div></div></div>	No one/Not applicable
32	Respondents			
58	Responses			

Q21. What methods do you use to share your child's educational information? (Check all that apply)				
Count	Respondent %	Response %		
13	43.33%	30.95%	<div><div></div></div>	Hard copy/printed report
7	23.33%	16.67%	<div><div></div></div>	E-mail
21	70.00%	50.00%	<div><div></div></div>	Verbally
0	0.00%	0.00%	<div><div></div></div>	Social network
1	3.33%	2.38%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	100.00%	<div><div></div></div>	Children not old enough for school
30	Respondents			
42	Responses			

Q22. How sensitive do you perceive your child's educational information?				
Count	Percent			
16	50.00%	<div><div></div></div>	Very sensitive (Should be shared/accessed via secure means by authorized individuals only)	
14	43.75%	<div><div></div></div>	Moderately sensitive (Should be shared/accessed by anyone by any means with parental consent)	
1	3.13%	<div><div></div></div>	Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)	
1	3.13%	<div><div></div></div>	Not sensitive at all (Should be posted on public website for review by anyone interested)	
32	Respondents			

Q23. What types of financial information about your children do you manage? (Check all that apply)				
Count	Respondent %	Response %		
25	71.43%	21.93%	<div><div></div></div>	Bank accounts
23	65.71%	20.18%	<div><div></div></div>	College savings plans
1	2.86%	0.88%	<div><div></div></div>	Trust funds
18	51.43%	15.79%	<div><div></div></div>	Childcare expenses
9	25.71%	7.89%	<div><div></div></div>	Tuition
24	68.57%	21.05%	<div><div></div></div>	Extracurricular fees
13	37.14%	11.40%	<div><div></div></div>	Allowance
1	2.86%	0.88%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	100.00%	<div><div></div></div>	None
35 Respondents				
114 Responses				

Q24. From where do you receive financial information? (Check all that apply)				
Count	Respondent %	Response %		
33	94.29%	61.11%	<div><div></div></div>	Banks
9	25.71%	16.67%	<div><div></div></div>	Schools
0	0.00%	0.00%	<div><div></div></div>	Trust
10	28.57%	18.52%	<div><div></div></div>	Childcare provider
2	5.71%	3.70%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	50.00%	<div><div></div></div>	Children are too young
	1	50.00%	<div><div></div></div>	Financial Advisor
35 Respondents				
54 Responses				

Q25. How do you receive financial information? (Check all that apply)				
Count	Respondent %	Response %		
9	25.71%	15.52%	<div><div></div></div>	Hard copy/printed report brought home by child
27	77.14%	46.55%	<div><div></div></div>	Electronically/online
2	5.71%	3.45%	<div><div></div></div>	Phone
17	48.57%	29.31%	<div><div></div></div>	Mail
2	5.71%	3.45%	<div><div></div></div>	Verbally
1	2.86%	1.72%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	100.00%	<div><div></div></div>	Children are too young
35 Respondents				
58 Responses				

Q26. How do you prefer to receive financial information? (Check all that apply)				
Count	Respondent %	Response %		
6	17.14%	11.54%	<div><div></div></div>	Hard copy/printed report brought home by child
30	85.71%	57.69%	<div><div></div></div>	Electronically/online
1	2.86%	1.92%	<div><div></div></div>	Phone
13	37.14%	25.00%	<div><div></div></div>	Mail
1	2.86%	1.92%	<div><div></div></div>	Verbally
1	2.86%	1.92%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	100.00%	<div><div></div></div>	Children are too young
35	Respondents			
52	Responses			

Q27. Of the financial information you receive, for which do you retain documentation such as statements and/or notices? (Check all that apply)				
Count	Respondent %	Response %		
28	80.00%	33.33%	<div><div></div></div>	Bank accounts
19	54.29%	22.62%	<div><div></div></div>	College savings plans
2	5.71%	2.38%	<div><div></div></div>	Trust funds
14	40.00%	16.67%	<div><div></div></div>	Childcare expenses
10	28.57%	11.90%	<div><div></div></div>	Tuition
8	22.86%	9.52%	<div><div></div></div>	Extracurricular fees
1	2.86%	1.19%	<div><div></div></div>	Allowance
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	2	5.71%	<div><div></div></div>	None
35	Respondents			
84	Responses			

Q28. What methods do you use to organize the items you keep? (Check all that apply)				
Count	Respondent %	Response %		
21	60.00%	27.27%	<div><div></div></div>	Paper file
21	60.00%	27.27%	<div><div></div></div>	Electronic/computer file
4	11.43%	5.19%	<div><div></div></div>	Keep in original package
5	14.29%	6.49%	<div><div></div></div>	Group by date
3	8.57%	3.90%	<div><div></div></div>	Group by type
4	11.43%	5.19%	<div><div></div></div>	Group by subject
3	8.57%	3.90%	<div><div></div></div>	Group by source
3	8.57%	3.90%	<div><div></div></div>	Scan to computer
1	2.86%	1.30%	<div><div></div></div>	Information management tool
8	22.86%	10.39%	<div><div></div></div>	E-mail
3	8.57%	3.90%	<div><div></div></div>	Print to paper
1	2.86%	1.30%	<div><div></div></div>	Other (please specify)
Count		Percent		
1	100.00%		<div><div></div></div>	not the one who keeps the records
0	0.00%	0.00%	<div><div></div></div>	None
35	Respondents			
77	Responses			

Q29. On average, how long do you save the information you choose to keep?				
Count	Percent			
1	2.86%	<div><div></div></div>		Less than 1 year
6	17.14%	<div><div></div></div>		1 year
13	37.14%	<div><div></div></div>		2 - 5 years
15	42.86%	<div><div></div></div>		Indefinitely
35	Respondents			

Q30. On average, how often do you review/update your children's financial information?			
Count	Percent		
2	5.71%	<div><div></div></div>	Once every week
13	37.14%	<div><div></div></div>	Once every month
11	31.43%	<div><div></div></div>	Once every semester
9	25.71%	<div><div></div></div>	Other (please specify)
Count	Percent		
1	11.11%	<div><div></div></div>	2-3 times a year
1	11.11%	<div><div></div></div>	as neccessary
1	11.11%	<div><div></div></div>	as needed
1	11.11%	<div><div></div></div>	Children are to young
1	11.11%	<div><div></div></div>	I do not have a regular scheduled update time frame
1	11.11%	<div><div></div></div>	Never
1	11.11%	<div><div></div></div>	Not as often as I should
1	11.11%	<div><div></div></div>	rarely
1	11.11%	<div><div></div></div>	when needed
35 Respondents			

Q31. With whom do you share your child's financial information? (Check all that apply)			
Count	Respondent %	Response %	
0	0.00%	0.00%	<div><div></div></div> Friends
12	34.29%	33.33%	<div><div></div></div> Family
7	20.00%	19.44%	<div><div></div></div> Financial advisor
3	8.57%	8.33%	<div><div></div></div> Other (please specify)
Count	Percent		
1	33.33%	<div><div></div></div>	just the child
1	33.33%	<div><div></div></div>	My Wife and My Child
1	33.33%	<div><div></div></div>	Spouse
14	40.00%	38.89%	<div><div></div></div> No one/Not applicable
35 Respondents			
36 Responses			

Q32. What methods do you use to share your child's financial information? (Check all that apply)				
Count	Respondent %	Response %		
8	38.10%	30.77%	<div><div></div></div>	Hard copy/printed report
4	19.05%	15.38%	<div><div></div></div>	E-mail
13	61.90%	50.00%	<div><div></div></div>	Verbally
0	0.00%	0.00%	<div><div></div></div>	Social network
1	4.76%	3.85%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	100.00%	<div><div></div></div>	In person with my wife and son
21	Respondents			
26	Responses			

Q33. How sensitive do you perceive your child's financial information?				
Count	Percent			
32	91.43%	<div><div></div></div>		Very sensitive (Should be shared/accessed via secure means by authorized individuals only)
2	5.71%	<div><div></div></div>		Moderately sensitive (Should be shared/accessed by anyone by any means with parental consent)
0	0.00%	<div><div></div></div>		Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
1	2.86%	<div><div></div></div>		Not sensitive at all (Should be posted on public website for review by anyone interested)
35	Respondents			

Q34. What types of medical information do you manage? (Check all that apply)				
Count	Respondent %	Response %		
33	91.67%	19.53%	<div><div></div></div>	Dates of tests/screenings
22	61.11%	13.02%	<div><div></div></div>	Dates of major illness/surgery
26	72.22%	15.38%	<div><div></div></div>	Allergies
30	83.33%	17.75%	<div><div></div></div>	Medications
30	83.33%	17.75%	<div><div></div></div>	Provider contact information
21	58.33%	12.43%	<div><div></div></div>	Preventive care plans
7	19.44%	4.14%	<div><div></div></div>	Researched information
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
	Count	Percent		
36	Respondents			
169	Responses			

Q35. From where do you receive medical information? (Check all that apply)				
Count	Respondent %	Response %		
34	94.44%	40.96%	<div><div></div></div>	Primary care physician
18	50.00%	21.69%	<div><div></div></div>	Specialist
16	44.44%	19.28%	<div><div></div></div>	Pharmacy
12	33.33%	14.46%	<div><div></div></div>	Medical websites (e.g., WebMD)
3	8.33%	3.61%	<div><div></div></div>	Other (please specify)
		Count	Percent	
		1	33.33%	Diagnosis Specific Foundation
		2	66.67%	Family and friends
36	Respondents			
83	Responses			

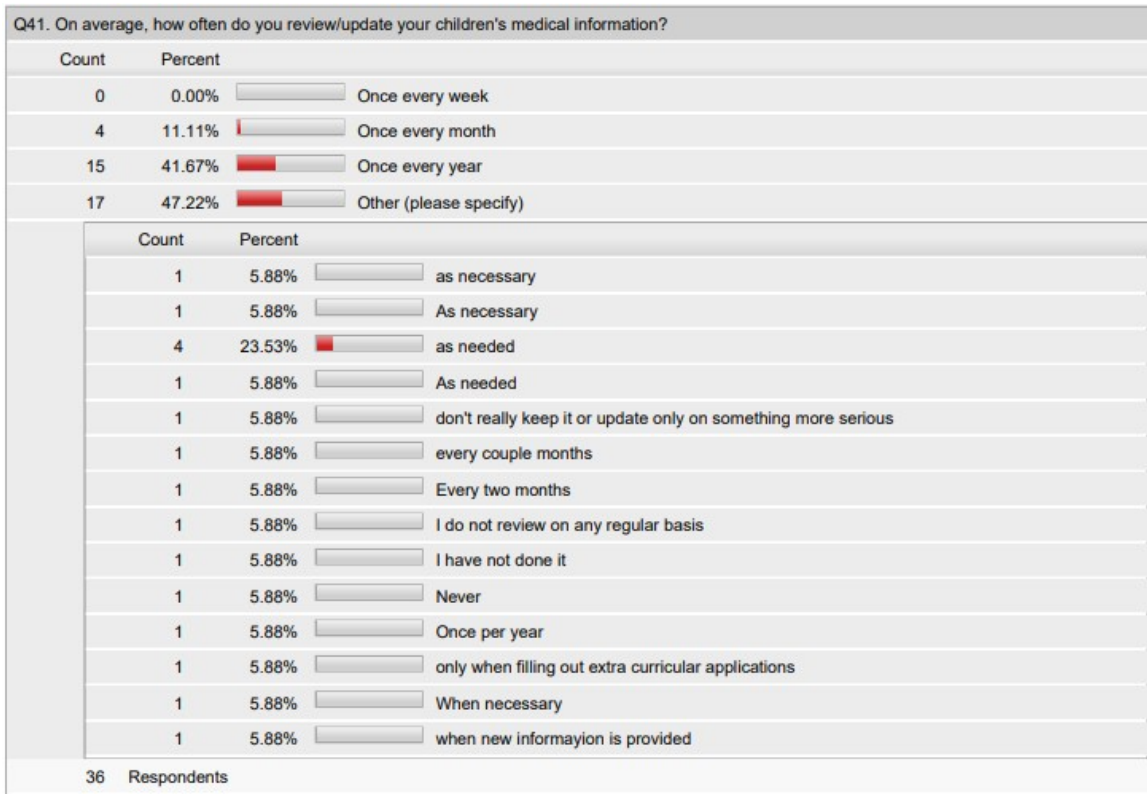
Q36. How do you receive medical information? (Check all that apply)				
Count	Respondent %	Response %		
22	61.11%	23.66%	<div><div></div></div>	Hard copy/printed report brought home by child
18	50.00%	19.35%	<div><div></div></div>	Electronically/online
13	36.11%	13.98%	<div><div></div></div>	Phone
18	50.00%	19.35%	<div><div></div></div>	Mail
22	61.11%	23.66%	<div><div></div></div>	Verbally
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
		Count	Percent	
36	Respondents			
93	Responses			

Q37. How do you prefer to receive medical information? (Check all that apply)				
Count	Respondent %	Response %		
16	44.44%	21.33%	<div><div></div></div>	Hard copy/printed report brought home by child
22	61.11%	29.33%	<div><div></div></div>	Electronically/online
9	25.00%	12.00%	<div><div></div></div>	Phone
13	36.11%	17.33%	<div><div></div></div>	Mail
15	41.67%	20.00%	<div><div></div></div>	Verbally
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
		Count	Percent	
36	Respondents			
75	Responses			

Q38. What methods do you use to organize the items you keep? (Check all that apply)				
Count	Respondent %	Response %		
27	75.00%	35.53%	<div><div></div></div>	Paper file
11	30.56%	14.47%	<div><div></div></div>	Electronic/computer file
4	11.11%	5.26%	<div><div></div></div>	Keep in original package
6	16.67%	7.89%	<div><div></div></div>	Group by date
4	11.11%	5.26%	<div><div></div></div>	Group by type
4	11.11%	5.26%	<div><div></div></div>	Group by subject
3	8.33%	3.95%	<div><div></div></div>	Group by source
2	5.56%	2.63%	<div><div></div></div>	Scan to computer
1	2.78%	1.32%	<div><div></div></div>	Information management tool
8	22.22%	10.53%	<div><div></div></div>	E-mail
3	8.33%	3.95%	<div><div></div></div>	Print to paper
2	5.56%	2.63%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	50.00%	<div><div></div></div>	Bookmark online
	1	50.00%	<div><div></div></div>	not the record keeper
1	2.78%	1.32%	<div><div></div></div>	None
36	Respondents			
76	Responses			

Q39. On average, how long do you save the information you choose to keep?				
Count	Percent			
2	5.56%	<div><div></div></div>		Less than 1 year
5	13.89%	<div><div></div></div>		1 year
7	19.44%	<div><div></div></div>		2 - 5 years
22	61.11%	<div><div></div></div>		Indefinitely
36	Respondents			

Q40. Have you ever requested access to or a copy of your child's medical records?				
Count	Percent			
26	72.22%	<div><div></div></div>		Yes
10	27.78%	<div><div></div></div>		No
36	Respondents			



Q43. What types of social information do you manage? (Check all that apply)				
Count	Respondent %	Response %		
31	93.94%	25.41%	<div><div></div></div>	Pictures/photos
26	78.79%	21.31%	<div><div></div></div>	Contacts (friends/parents)
16	48.48%	13.11%	<div><div></div></div>	Play dates
23	69.70%	18.85%	<div><div></div></div>	Party invitations
15	45.45%	12.30%	<div><div></div></div>	Party planning
11	33.33%	9.02%	<div><div></div></div>	Wish lists
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
Count		Percent		
33	Respondents			
122	Responses			

Q44. From where do you receive social information? (Check all that apply)				
Count	Respondent %	Response %		
21	63.64%	12.50%	<div><div></div></div>	School
27	81.82%	16.07%	<div><div></div></div>	Family
31	93.94%	18.45%	<div><div></div></div>	Friends
17	51.52%	10.12%	<div><div></div></div>	Camera
26	78.79%	15.48%	<div><div></div></div>	Smart phone/device
20	60.61%	11.90%	<div><div></div></div>	Child
24	72.73%	14.29%	<div><div></div></div>	E-mail
2	6.06%	1.19%	<div><div></div></div>	Other (please specify)
Count		Percent		
1	50.00%		<div><div></div></div>	kindle
1	50.00%		<div><div></div></div>	mail and fliers
33	Respondents			
168	Responses			

Q45. How do you receive social information? (Check all that apply)				
Count	Respondent %	Response %		
16	48.48%	17.02%	<div><div></div></div>	Hardcopy/printed report brought home by child
30	90.91%	31.91%	<div><div></div></div>	Electronically/online
18	54.55%	19.15%	<div><div></div></div>	Phone
11	33.33%	11.70%	<div><div></div></div>	Mail
18	54.55%	19.15%	<div><div></div></div>	Verbally
1	3.03%	1.06%	<div><div></div></div>	Other (please specify)
Count		Percent		
1	100.00%		<div><div></div></div>	Smart Phone
33	Respondents			
94	Responses			

Q46. Of the social information you receive, which items do you keep? (Check all that apply)				
Count	Respondent %	Response %		
30	90.91%	37.50%	<div><div></div></div>	Pictures/photos
25	75.76%	31.25%	<div><div></div></div>	Contacts (friends/parents)
5	15.15%	6.25%	<div><div></div></div>	Play dates
11	33.33%	13.75%	<div><div></div></div>	Party invitations
2	6.06%	2.50%	<div><div></div></div>	Party planning
5	15.15%	6.25%	<div><div></div></div>	Wish lists
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
Count		Percent		
2	6.06%	2.50%	<div><div></div></div>	None
33	Respondents			
80	Responses			

Q47. What methods do you use to organize the items you keep? (Check all that apply)				
Count	Respondent %	Response %		
13	39.39%	18.31%	<div><div></div></div>	Paper file
23	69.70%	32.39%	<div><div></div></div>	Electronic/computer file
4	12.12%	5.63%	<div><div></div></div>	Keep in original package
3	9.09%	4.23%	<div><div></div></div>	Group by date
2	6.06%	2.82%	<div><div></div></div>	Group by type
3	9.09%	4.23%	<div><div></div></div>	Group by subject
0	0.00%	0.00%	<div><div></div></div>	Group by source
4	12.12%	5.63%	<div><div></div></div>	Scan to computer
0	0.00%	0.00%	<div><div></div></div>	Information management tool
14	42.42%	19.72%	<div><div></div></div>	E-mail
2	6.06%	2.82%	<div><div></div></div>	Print to paper
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
Count		Percent		
3	9.09%	4.23%	<div><div></div></div>	None
33	Respondents			
71	Responses			

Q48. On average, how long do you save the information you choose to keep?				
Count	Percent			
5	15.15%	<div><div></div></div>	Less than 1 year	
3	9.09%	<div><div></div></div>	1 year	
6	18.18%	<div><div></div></div>	2 - 5 years	
19	57.58%	<div><div></div></div>	Indefinitely	
33	Respondents			

Q49. How sensitive do you perceive your child's social information?			
Count	Percent		
14	42.42%	<div><div></div></div>	Very sensitive (Should be shared/accessed via secure means by authorized individuals only)
16	48.48%	<div><div></div></div>	Moderately sensitive (Should be shared/accessed by anyone by any means with parental consent)
3	9.09%	<div><div></div></div>	Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
0	0.00%	<div><div></div></div>	Not sensitive at all (Should be posted on public website for review by anyone interested)
33	Respondents		

Q50. What types of information regarding your child's recreational/extracurricular activities do you manage? (Check all that apply)			
Count	Respondent %	Response %	
23	71.88%	12.64%	<div><div></div></div> Provider contact information
26	81.25%	14.29%	<div><div></div></div> Practice/rehearsal dates
24	75.00%	13.19%	<div><div></div></div> Game/performance/event dates
23	71.88%	12.64%	<div><div></div></div> Required uniform/costume
23	71.88%	12.64%	<div><div></div></div> Required equipment
24	75.00%	13.19%	<div><div></div></div> Game/performance/event locations
26	81.25%	14.29%	<div><div></div></div> Fees
12	37.50%	6.59%	<div><div></div></div> Team member contact
1	3.13%	0.55%	<div><div></div></div> Other (please specify)
	Count	Percent	
	1	100.00%	<div><div></div></div> None
32	Respondents		
182	Responses		

Q51. From where do you receive information regarding your child's recreational/extracurricular activities?			
Count	Respondent %	Response %	
23	71.88%	21.50%	<div><div></div></div> School
26	81.25%	24.30%	<div><div></div></div> Coach/instructor
14	43.75%	13.08%	<div><div></div></div> Friends
22	68.75%	20.56%	<div><div></div></div> Other parents
19	59.38%	17.76%	<div><div></div></div> Child
3	9.38%	2.80%	<div><div></div></div> Other (please specify)
	Count	Percent	
	1	33.33%	<div><div></div></div> Family
	1	33.33%	<div><div></div></div> None
	1	33.33%	<div><div></div></div> the organizer
32	Respondents		
107	Responses		

Q52. How do you receive information regarding your child's recreational/extracurricular activities? (Check all that apply)				
Count	Respondent %	Response %		
21	65.63%	23.08%	<div><div></div></div>	Hardcopy/printed report brought home by child
25	78.13%	27.47%	<div><div></div></div>	Electronically/online
15	46.88%	16.48%	<div><div></div></div>	Phone
12	37.50%	13.19%	<div><div></div></div>	Mail
17	53.13%	18.68%	<div><div></div></div>	Verbally
1	3.13%	1.10%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	100.00%	<div><div></div></div>	None
32	Respondents			
91	Responses			

Q53. Of the information regarding your child's recreational/extracurricular you receive, which items do you keep? (Check all that apply)				
Count	Respondent %	Response %		
19	59.38%	15.45%	<div><div></div></div>	Provider contact information
19	59.38%	15.45%	<div><div></div></div>	Practice/rehearsal dates
20	62.50%	16.26%	<div><div></div></div>	Game/performance/event dates
11	34.38%	8.94%	<div><div></div></div>	Required uniform/costume
9	28.13%	7.32%	<div><div></div></div>	Required equipment
16	50.00%	13.01%	<div><div></div></div>	Game/performance/event locations
14	43.75%	11.38%	<div><div></div></div>	Fees
11	34.38%	8.94%	<div><div></div></div>	Team member contact
4	12.50%	3.25%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	2	50.00%	<div><div></div></div>	None
	1	25.00%	<div><div></div></div>	None since it changes each year
	1	25.00%	<div><div></div></div>	Photos
32	Respondents			
123	Responses			

Q54. What methods do you use to organize the items you keep? (Check all that apply)				
Count	Respondent %	Response %		
18	56.25%	26.09%	<div><div></div></div>	Paper file
21	65.63%	30.43%	<div><div></div></div>	Electronic/computer file
1	3.13%	1.45%	<div><div></div></div>	Keep in original package
4	12.50%	5.80%	<div><div></div></div>	Group by date
3	9.38%	4.35%	<div><div></div></div>	Group by type
2	6.25%	2.90%	<div><div></div></div>	Group by subject
0	0.00%	0.00%	<div><div></div></div>	Group by source
1	3.13%	1.45%	<div><div></div></div>	Scan to computer
0	0.00%	0.00%	<div><div></div></div>	Information management tool
13	40.63%	18.84%	<div><div></div></div>	E-mail
2	6.25%	2.90%	<div><div></div></div>	Print to paper
1	3.13%	1.45%	<div><div></div></div>	Other (please specify)
Count	Percent			
1	100.00%	<div><div></div></div>		write on paper calendar
3	9.38%	4.35%	<div><div></div></div>	None
32	Respondents			
69	Responses			

Q55. On average, how long do you save the information you choose to keep?				
Count	Percent			
16	50.00%	<div><div></div></div>		Less than 1 year
9	28.13%	<div><div></div></div>		1 year
4	12.50%	<div><div></div></div>		2 - 5 years
3	9.38%	<div><div></div></div>		Indefinitely
32	Respondents			

Q56. How sensitive do you perceive your child's recreational/extracurricular information?				
Count	Percent			
10	31.25%	<div><div></div></div>		Very sensitive (Should be shared/accessed via secure means by authorized individuals only)
15	46.88%	<div><div></div></div>		Moderately sensitive (Should be shared/accessed by anyone by any means with parental consent)
3	9.38%	<div><div></div></div>		Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
4	12.50%	<div><div></div></div>		Not sensitive at all (Should be posted on public website for review by anyone interested)
32	Respondents			

Q57. Thank you for participating in the survey. Are you available for a phone interview?			
Count	Percent		
16	42.11%	<div><div></div></div>	Yes
22	57.89%	<div><div></div></div>	No
38	Respondents		

Q58. If we may contact you for additional input or an interview, please provide the following:				
Count	Respondent %	Response %		
16	100.00%	36.36%	<div><div></div></div>	Name:
13	81.25%	29.55%	<div><div></div></div>	Phone number: (xxx-xxx-xxxx)
15	93.75%	34.09%	<div><div></div></div>	E-mail Address:
16	Respondents			
44	Responses			

APPENDIX E

Survey 2 Questionnaire

I. General Questions

1. What is your age?
☐ 20 or under ☐ 21 – 30 ☐ 31- 40 ☐ 41 -50 ☐ 51 or older
2. What is your gender?
☐ Female ☐ Male
3. How many children are in your household (3-18 years of age)?
☐ 0 ☐ 1 ☐ 2-3 ☐ 4-5 ☐ 6 or more
4. In what grade(s) are your children? (Use the space below to provide separate information for each child if you have multiple children)
☐ Pre-School (K3/K4) ☐ Kindergarten (K5) ☐ Elementary (Grade 1-5)
☐ Middle (Grade 6-8) ☐ High (Grade 9-12) ☐ Other
If other, please specify:
5. Do(es) your child(ren) have any special educational needs?
☐ Yes ☐ No

II. Information Acquisition

6. What types of educational information do you receive? (check all that apply)
☐ Report Cards ☐ Progress Reports ☐ IEPs
☐ 549 Plans ☐ Standardized Test Results ☐ Evaluations
☐ Correspondence ☐ Assignments/School Work ☐ Meeting Invitations
☐ Disciplinary Notices ☐ Provider Contact Info ☐ Other
If other, please specify:
7. From whom do you receive educational information? (check all that apply)
☐ Teacher ☐ School office ☐ Learning Center/Tutor
☐ Support Teams ☐ Other If other, please specify:
8. How do you receive educational information? (check all that apply)
☐ Hardcopy/Printed Report brought home by child ☐ Electronically/Online
☐ Phone ☐ Mail ☐ Verbally from child
☐ Other If other, please specify:
9. How do you prefer to receive educational information? (check all that apply)

- ☐ Hardcopy/Printed Report brought home by child
☐ Phone ☐ Mail ☐ Verbally from child
☐ Electronically/Online ☐ Other If other, please specify:

10. Is an education management system available for parents of students at your child's school (ex. ParentCONNECTxp, SchoolMAX, Edline, etc.)?

- ☐ Yes ☐ No

If yes, please provide the name of the system:

11. Do you access the available education management system to obtain information regarding your child's education? (Show this question if yes to #10)

- ☐ Yes ☐ No

12. From what electronic/online sources do you receive educational information besides an education management system provided by your child's school?

- ☐ Tutor's website ☐ Emails from educators ☐ None
☐ Other If other, please specify:

13. Why do you not use the available education management system to obtain information regarding your child's education? (check all that apply) (Show this question if no to #11)

- ☐ No or limited computer access ☐ No account to which to sign-in
☐ Lack of computer/Internet literacy ☐ System too difficult/confusing to use
☐ Available information is not useful ☐ Other If other, please specify:

III. Purpose and Use

14. What do you do with the educational information you receive? (check all that apply)

- ☐ Save; no further action ☐ Save and take additional actions
☐ Provide requested response ☐ Provide unrequested response
☐ Share with others ☐ Discard
☐ Other If other, please specify:

15. What kind of additional actions do you take based on the educational information you receive regarding your children? (check all that apply)

- ☐ Contact educator ☐ Provide additional help to child
☐ Reward/reprimand child ☐ Request class/teacher change
☐ Provide requested information/item ☐ Request class/teacher change
☐ None ☐ Other If other, please specify:

16. Of the educational information you receive, which items do you save? (check all that apply)

- | | | |
|--|--|--------------------------------------|
| <input type="checkbox"/> Report Cards | <input type="checkbox"/> Progress Reports | <input type="checkbox"/> IEPs |
| <input type="checkbox"/> 549 Plans | <input type="checkbox"/> Standardized Test Results | <input type="checkbox"/> Evaluations |
| <input type="checkbox"/> Correspondence | <input type="checkbox"/> Assignments/School Work | |
| <input type="checkbox"/> Meeting Invitations | <input type="checkbox"/> Disciplinary Notices | |
| <input type="checkbox"/> Provider Contact Info | <input type="checkbox"/> Other | <input type="checkbox"/> None |
- If other, please specify:

17. Of the educational information you receive, how do you determine which to save? (check all that apply)

- ☐ No determination; save everything
☐ No determination; discard everything
☐ Dependent on long-term relevance
☐ Dependent on source of information
- If other, please specify:

18. How difficult is it to decide what educational information should be saved versus what should be discarded?

- ☐ Very Difficult ☐ Difficult ☐ Neutral ☐ Easy ☐ Very Easy

19. When a response is not explicitly requested, how difficult is it to determine that a response to received educational information is necessary?

- ☐ Very Difficult ☐ Difficult ☐ Neutral ☐ Easy ☐ Very Easy

20. For what reason(s) do you initiate unrequested responses? (check all that apply)

- ☐ Have questions regarding or need clarification on received information
☐ Disagree with or believe the received information is in error
☐ Express appreciation for received information
☐ Provide notification of a change
☐ Other
- If other, please specify:

IV. Communication with School

21. How do you communicate with persons from your child's school? (check all that apply)

- | | | |
|---|--|--------------------------------|
| <input type="checkbox"/> Notes/letters | <input type="checkbox"/> Entries in journal | <input type="checkbox"/> Phone |
| <input type="checkbox"/> Messages via the child | <input type="checkbox"/> In person | <input type="checkbox"/> Email |
| <input type="checkbox"/> SMS/Text message | <input type="checkbox"/> Educational Management System | <input type="checkbox"/> Other |

If other, please specify:

22. Do you face challenges in communicating with your child's school?

- ☐ No ☐ Yes If yes, please explain:

23. When are challenges communicating with your child's school most frequently encountered? (check all that apply)
- ☐ Not applicable; communicating with the school is never a problem
 - ☐ Communicating with the school is always a problem
 - ☐ Anytime I am initiating the conversation; whenever an unrequested response is warranted
 - ☐ At the beginning of the school year
 - ☐ At the end of the school year
 - ☐ When there is a change in class or teacher
 - ☐ When the child enters a new school
 - ☐ When attempting to contact persons via phone
 - ☐ When attempting to contact persons via email
 - ☐ When attempting to contact persons via an Educational Management System
 - ☐ When sending and receiving verbal messages via the child
 - ☐ Other
- If other, please specify:

24. How do you determine who to contact when initiating unsolicited communication regarding your child's education?
- ☐ I always contact the same person (i.e. the teacher or principal)
 - ☐ Depending on the topic, I choose the appropriate contact
 - ☐ I rarely know who to contact, so I call the office
 - ☐ Other
- If other, please specify:

25. How difficult is it to determine the appropriate contact at the school to address your needs or questions?
- ☐ Very Difficult ☐ Difficult ☐ Neutral ☐ Easy ☐ Very Easy

26. How difficult is it to communicate with the person to address your needs or questions once he/she has been identified?
- ☐ Very Difficult, I have to send or leave several messages before I reach him/her
 - ☐ Difficult, we play phone tag /he or she is only available during school hours
 - ☐ Neutral
 - ☐ Easy, I send a message anytime and he/she responds in a reasonable amount of time
 - ☐ Very Easy, he/she is always available when I call

V. Information Sharing

27. How sensitive do you perceive your child's educational information?

- ☐ Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)
- ☐ Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)
- ☐ Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
- ☐ Not Sensitive at all (Should be posted on public website for review by anyone interested)
28. With whom do you share your child's educational information? (check all that apply)
- | | | |
|--|--|---|
| <input type="checkbox"/> Friends | <input type="checkbox"/> Educators | <input type="checkbox"/> Family/Spouse/Child |
| <input type="checkbox"/> Healthcare Provider | <input type="checkbox"/> Advocates | <input type="checkbox"/> No one |
| <input type="checkbox"/> Tutor | <input type="checkbox"/> Other Parents | <input type="checkbox"/> Other If other, please specify: |
29. For what purpose(s) do you share your child's educational information with others?
- ☐ Pride / Share accomplishments
- ☐ Describe an issue / Show example of potential problem
- ☐ Comparison to determine if progress or behavior is 'normal'
- ☐ Other If other, please specify:
30. How difficult is it to determine what of your child's educational information to share?
- ☐ Very Difficult ☐ Difficult ☐ Neutral ☐ Easy ☐ Very Easy
31. What methods do you use to share your child's educational information? (check all that apply)
- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Email | <input type="checkbox"/> Hardcopy/Printed Report | <input type="checkbox"/> Verbally |
| <input type="checkbox"/> Social Network | <input type="checkbox"/> Other | <input type="checkbox"/> None |
- If other, please specify:
32. Have you experienced any difficulty or challenges sharing your child's educational information with others?
- ☐ No ☐ Yes If yes, please explain: .

VI. Retention, Organization, Retrieval, Update & Maintenance

33. On average, how long do you save the information you choose to keep?
- ☐ Less than 1 year ☐ 1 year ☐ 2 – 5 years ☐ Indefinitely
34. What methods do you use to organize the items you keep? (check all that apply)
- | | | |
|--|--|---|
| <input type="checkbox"/> Paper File | <input type="checkbox"/> Electronic/Computer File | <input type="checkbox"/> Keep in Original package |
| <input type="checkbox"/> Group by Date | <input type="checkbox"/> Group by Type | <input type="checkbox"/> Group by Subject |
| <input type="checkbox"/> Group by Source | <input type="checkbox"/> Information Management Tool | <input type="checkbox"/> Scan to Computer |

- ☐ Email

 ☐ Print to Paper

 ☐ None
☐ Other

 If other, please specify:

35. For what purpose(s) do you save educational information? (check all that apply)
- ☐ Use as supporting documentation when communicating with educators or others
☐ To assist child in reviewing/studying material
☐ Show progress or decline in development and/or skill
☐ As a memento; to remember child's accomplishment at a particular age or grade
☐ Other If other, please specify:

36. Do you have any difficulty in finding saved educational information when it is needed?
- ☐ Yes

 ☐ No

 If yes, please explain:

37. What attempts have you made at combining the different types of data you receive?
- ☐ Scanning paper documents and filing them with electronic documents
☐ Printing electronic reports and filing them with paper documents
☐ Taking pictures of assignment or paper documents filing them with electronic documents
☐ Other If other, please specify:

38. How much time are you willing/able to dedicate to organizing the education information you receive in effort to improve your effectiveness in finding the information when it is needed?
- ☐ None

 ☐ Less than 1 hour per week

 ☐ 1 hour per week
☐ 2 hours per week

 ☐ Unlimited/whatever is required

 ☐ Other

39. Are you willing/able to document the following information for each piece of educational information you retain?
- *Date*
 - *Source*
 - *Category (Report Cards, IEPs, Standardized Test Results, Progress Reports, Correspondence, Meeting Invitations, Provider Contact Information, 549 Plans, Evaluations, Assignments/School Work, Disciplinary Notices or Other)*
 - *Description for items categorized as 'Other'*
- ☐ Yes

 ☐ No

40. How often do you refer to and/or use educational information that you have saved?
- ☐ Never

 ☐ Daily

 ☐ Weekly

 ☐ Monthly

 ☐ Quarterly
☐ Annually

 ☐ As needed

 ☐ Other

 If other, please specify:

41. How often do you review educational information that you have saved to determine if it is still relevant or useful?

- ☐ Never ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly
☐ Annually ☐ As needed ☐ Other If other, please specify:

VII. Acquisition via Education Management Systems (If yes to #6)

42. How often do you view the information provided via the education management system without being prompted by an email or other alert to do so?

- ☐ Daily ☐ Twice per week ☐ Once per week
☐ Once per month ☐ Once per semester ☐ Other

If other, please specify:

43. What do you like most about the education management system(s) with which you interact?

44. What do you like least about the education management system(s) with which you interact?

45. Have you experienced any of the following issues when interacting with education management system(s)? (check all that apply)

- ☐ Inability to access due to technical issues
☐ Difficulty understanding information provided due to terminology used
☐ Difficulty reviewing information provided due to volume of content
☐ Difficulty reviewing information provided due to frequency of updates
☐ Other

If other, please specify:

VIII. Conclusion

Thank you for participating in the survey.

Are you available to provide additional input or evaluate potential information management solutions? If yes, please provide your contact information.

Name:

Email Address:

APPENDIX F

Survey 2 Responses

Q1. Do you agree to participate?			
Count	Percent		
56	100.00%	<div><div style="width: 100%;"></div></div>	Yes
0	0.00%	<div><div style="width: 0%;"></div></div>	No
56	Respondents		

Q2. What is your age?			
Count	Percent		
0	0.00%	<div><div style="width: 0%;"></div></div>	20 or under
7	12.73%	<div><div style="width: 12.73%;"></div></div>	21 - 30
26	47.27%	<div><div style="width: 47.27%;"></div></div>	31 - 40
18	32.73%	<div><div style="width: 32.73%;"></div></div>	41 - 50
4	7.27%	<div><div style="width: 7.27%;"></div></div>	51 or older
55	Respondents		

Q3. What is your gender?			
Count	Percent		
38	69.09%	<div><div style="width: 69.09%;"></div></div>	Female
17	30.91%	<div><div style="width: 30.91%;"></div></div>	Male
55	Respondents		

Q4. How many children are in your household (0-18 years of age)?			
Count	Percent		
9	16.36%	<div><div style="width: 16.36%;"></div></div>	0
15	27.27%	<div><div style="width: 27.27%;"></div></div>	1
31	56.36%	<div><div style="width: 56.36%;"></div></div>	2-3
0	0.00%	<div><div style="width: 0%;"></div></div>	4-5
0	0.00%	<div><div style="width: 0%;"></div></div>	6 or more
55	Respondents		

Q5. In what grade(s) are your children? (Check all that apply)				
Count	Respondent %	Response %		
15	32.61%	22.06%	<div><div></div></div>	Pre-School (K3/K4)
6	13.04%	8.82%	<div><div></div></div>	Kindergarten (K5)
18	39.13%	26.47%	<div><div></div></div>	Elementary (Grade 1-5)
9	19.57%	13.24%	<div><div></div></div>	Middle (Grade 6-8)
13	28.26%	19.12%	<div><div></div></div>	High (Grade 9-12)
7	15.22%	10.29%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	14.29%	<div><div></div></div>	2
	1	14.29%	<div><div></div></div>	2 years old
	1	14.29%	<div><div></div></div>	Age 2 she is at home with me
	2	28.57%	<div><div></div></div>	College
	1	14.29%	<div><div></div></div>	Freshman in college
	1	14.29%	<div><div></div></div>	Newborn (7 months)
46	Respondents			
68	Responses			

Q6. Do(es) your child(ren) have any special educational needs?				
Count	Percent			
12	26.09%	<div><div></div></div>	Yes	
34	73.91%	<div><div></div></div>	No	
46	Respondents			

Q7. What types of educational information do you receive? (Check all that apply)				
Count	Respondent %	Response %		
35	77.78%	15.63%	<div><div></div></div>	Report Cards
33	73.33%	14.73%	<div><div></div></div>	Progress Reports
15	33.33%	6.70%	<div><div></div></div>	IEPs
1	2.22%	0.45%	<div><div></div></div>	549 Plans
21	46.67%	9.38%	<div><div></div></div>	Standardized Test Results
13	28.89%	5.80%	<div><div></div></div>	Evaluations
26	57.78%	11.61%	<div><div></div></div>	Correspondence
31	68.89%	13.84%	<div><div></div></div>	Assignments/School Work
25	55.56%	11.16%	<div><div></div></div>	Meeting Invitations
11	24.44%	4.91%	<div><div></div></div>	Disciplinary Notices
10	22.22%	4.46%	<div><div></div></div>	Provider Contact Info
3	6.67%	1.34%	<div><div></div></div>	Other (please specify)
		Count	Percent	
		1	33.33%	<div><div></div></div> None
		1	33.33%	<div><div></div></div> Pictures
		1	33.33%	<div><div></div></div> Progress can be followed on RenWeb, a site where all student grades are posted.
45 Respondents				
224 Responses				

Q8. From whom do you receive educational information? (Check all that apply)				
Count	Respondent %	Response %		
43	95.56%	53.75%	<div><div></div></div>	Teacher
21	46.67%	26.25%	<div><div></div></div>	School office
1	2.22%	1.25%	<div><div></div></div>	Learning Center/Tutor
11	24.44%	13.75%	<div><div></div></div>	Support Teams
4	8.89%	5.00%	<div><div></div></div>	Other (please specify)
		Count	Percent	
		1	25.00%	<div><div></div></div> Headmaster, Guidance Counselor, Child
		2	50.00%	<div><div></div></div> Principal
		1	25.00%	<div><div></div></div> Speech
45 Respondents				
80 Responses				

Q9. How do you receive educational information? (Check all that apply)				
Count	Respondent %	Response %		
34	75.56%	29.57%	<div><div></div></div>	Hardcopy/Printed Report brought home by child
35	77.78%	30.43%	<div><div></div></div>	Electronically/Online
13	28.89%	11.30%	<div><div></div></div>	Phone
12	26.67%	10.43%	<div><div></div></div>	Mail
18	40.00%	15.65%	<div><div></div></div>	Verbally from child
3	6.67%	2.61%	<div><div></div></div>	Other (please specify)
	Count	Percent		
	1	33.33%	<div><div></div></div>	Sent home
	1	33.33%	<div><div></div></div>	verbally from teacher/administration
	1	33.33%	<div><div></div></div>	Written
45	Respondents			
115	Responses			

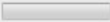

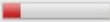
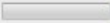
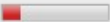
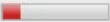

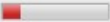
Q10. How do you prefer to receive educational information? (Check all that apply)				
Count	Respondent %	Response %		
32	71.11%	30.77%	<div><div></div></div>	Hardcopy/Printed Report brought home by child
39	86.67%	37.50%	<div><div></div></div>	Electronically/Online
12	26.67%	11.54%	<div><div></div></div>	Phone
8	17.78%	7.69%	<div><div></div></div>	Mail
13	28.89%	12.50%	<div><div></div></div>	Verbally from child
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
	Count	Percent		
45	Respondents			
104	Responses			

Q11. Is an education management system available for parents of students at your child's school (ex. ParentCONNECTxp, SchoolMAX, Edline, etc.)?			
Count	Percent		
30	66.67%	<div><div></div></div>	Yes (please provide the name of the system)
Count	Percent		
1	3.33%	<div><div></div></div>	BCPS one
1	3.33%	<div><div></div></div>	Black Board and ParentCONNECT
1	3.33%	<div><div></div></div>	Canvas
1	3.33%	<div><div></div></div>	Edline
1	3.33%	<div><div></div></div>	Edline Class Dojo
1	3.33%	<div><div></div></div>	For my Kindergartener, remind me text messages & parent tree emails. There's also pay pams for managing lunch accounts and my school fees for other fees.
1	3.33%	<div><div></div></div>	Haiku (google based) BarrieCONNECT
1	3.33%	<div><div></div></div>	HCPSS Connect
3	10.00%	<div><div></div></div>	Maccess
1	3.33%	<div><div></div></div>	Maybe I don't really know
1	3.33%	<div><div></div></div>	Parent connect
1	3.33%	<div><div></div></div>	parent portal
2	6.67%	<div><div></div></div>	ParentConnect
		<div><div></div></div>	

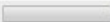


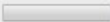
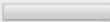


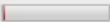
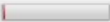
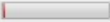
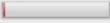
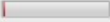
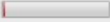
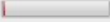
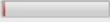
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1	3.33%	<div><div></div></div>	ParentCONNECTxp
1	3.33%	<div><div></div></div>	Parents Association
1	3.33%	<div><div></div></div>	parentvue, remind--texting app, sign-up genius
1	3.33%	<div><div></div></div>	Portal link
1	3.33%	<div><div></div></div>	Renweb
1	3.33%	<div><div></div></div>	RenWeb
1	3.33%	<div><div></div></div>	School database
3	10.00%	<div><div></div></div>	SchoolMax
1	3.33%	<div><div></div></div>	Skyward
15	33.33%	<div><div></div></div>	No
45 Respondents			

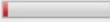


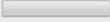
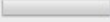
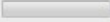
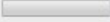

Q12. Do you use the available education management system to obtain information regarding your child's education?			
Count	Percent		
27	90.00%	<div><div></div></div>	Yes
3	10.00%	<div><div></div></div>	No
30 Respondents			

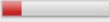
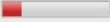
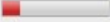
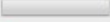
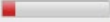
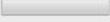


Q13. From what electronic/online sources do you receive educational information besides an education management system provided by your child's school? (Check all that apply)

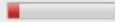
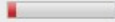
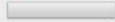
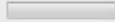
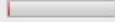
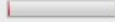
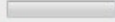
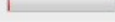
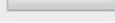
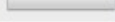
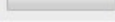
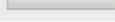
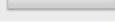

Count	Respondent %	Response %	
2	4.44%	4.08%	 Tutor's website
31	68.89%	63.27%	 Emails from educators
12	26.67%	24.49%	 None
4	8.89%	8.16%	 Other (please specify)
Count	Percent		
1	25.00%	 guidance counselor	
1	25.00%	 notes	
1	25.00%	 Posted on school website	
1	25.00%	 Tadpole	
45	Respondents		
49	Responses		

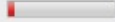
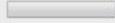

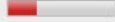
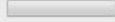


Q14. Why do you not use the available education management system to obtain information regarding your child's education? (Check all that apply)

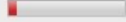
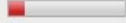
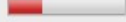

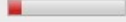
Count	Respondent %	Response %	
1	6.67%	6.25%	 No or limited computer access
3	20.00%	18.75%	 No account to which to sign-in
2	13.33%	12.50%	 Lack of computer/Internet literacy
1	6.67%	6.25%	 System too difficult/confusing to use
0	0.00%	0.00%	 Available information is not useful
9	60.00%	56.25%	 Other (please specify)
Count	Percent		
1	11.11%	 Don't think there is one	
1	11.11%	 dont exist	
1	11.11%	 I do	
1	11.11%	 N/a	
1	11.11%	 N/A	
1	11.11%	 None is available	
1	11.11%	 not applicable	
1	11.11%	 Not sure if school provides this	
1	11.11%	 Not used by school	
15	Respondents		
16	Responses		

Q15. What do you do with the educational information you receive? (Check all that apply)				
Count	Respondent %	Response %		
13	29.55%	13.27%		Save; no further action
36	81.82%	36.73%		Save and take additional actions
29	65.91%	29.59%		Provide requested response
7	15.91%	7.14%		Provide unrequested response
8	18.18%	8.16%		Share with others
4	9.09%	4.08%		Discard; no further action
1	2.27%	1.02%		Other (please specify)
	Count	Percent		
	1	100.00%		Discuss with Spouse.
44	Respondents			
98	Responses			

Q16. What kind of additional actions do you take based on the educational information you receive regarding your children? (Check all that apply)				
Count	Respondent %	Response %		
36	81.82%	25.71%		Contact educator
35	79.55%	25.00%		Provide additional help to child
33	75.00%	23.57%		Reward/reprimand child
8	18.18%	5.71%		Request class/teacher change
27	61.36%	19.29%		Provide requested information/item
0	0.00%	0.00%		None
1	2.27%	0.71%		Other (please specify)
	Count	Percent		
	1	100.00%		Discuss the educational information with child
44	Respondents			
140	Responses			

Q17. Of the educational information you receive, which items do you save? (Check all that apply)				
Count	Respondent %	Response %		
34	77.27%	19.10%		Report Cards
27	61.36%	15.17%		Progress Reports
15	34.09%	8.43%		IEPs
1	2.27%	0.56%		549 Plans
18	40.91%	10.11%		Standardized Test Results
17	38.64%	9.55%		Evaluations
15	34.09%	8.43%		Correspondence
19	43.18%	10.67%		Assignments/School Work
8	18.18%	4.49%		Meeting Invitations
7	15.91%	3.93%		Disciplinary Notices
13	29.55%	7.30%		Provider Contact Info
3	6.82%	1.69%		None
1	2.27%	0.56%		Other (please specify)
Count	Percent			
1	100.00%		pictures	
44	Respondents			
178	Responses			

Q18. Of the educational information you receive, how do you determine which to save? (Check all that apply)				
Count	Respondent %	Response %		
9	20.45%	14.52%		No determination; save everything
0	0.00%	0.00%		No determination; discard everything
30	68.18%	48.39%		Dependent on long-term relevance
21	47.73%	33.87%		Dependent on source of information
2	4.55%	3.23%		Other (please specify)
Count	Percent			
1	50.00%		During the school year.	
1	50.00%		Save correspondence for at least a year in case it is needed.	
44	Respondents			
62	Responses			

Q19. How difficult is it to decide what educational information should be saved versus what should be discarded?				
Count	Percent			
3	6.82%		Very Difficult	
6	13.64%		Difficult	
13	29.55%		Neutral	
17	38.64%		Easy	
5	11.36%		Very Easy	
44	Respondents			

Q20. When a response is not explicitly requested, how difficult is it to determine that a response to received educational information is necessary?			
Count	Percent		
1	2.27%	<div><div></div></div>	Very Difficult
4	9.09%	<div><div></div></div>	Difficult
18	40.91%	<div><div></div></div>	Neutral
17	38.64%	<div><div></div></div>	Easy
4	9.09%	<div><div></div></div>	Very Easy
44	Respondents		

Q21. For what reason(s) do you initiate unrequested responses? (Check all that apply)			
Count	Respondent %	Response %	
39	88.64%	38.61%	<div><div></div></div> Have questions regarding or need clarification on received information
15	34.09%	14.85%	<div><div></div></div> Disagree with or believe the received information is in error
29	65.91%	28.71%	<div><div></div></div> Express appreciation for received information
17	38.64%	16.83%	<div><div></div></div> Provide notification of a change
1	2.27%	0.99%	<div><div></div></div> Other (please specify)
	Count	Percent	
	1	100.00%	<div><div></div></div> Request meeting, thank teacher, notify of child's absense
44	Respondents		
101	Responses		

Q22. How do you communicate with persons from your child's school? (Check all that apply)			
Count	Respondent %	Response %	
25	56.82%	15.53%	<div><div></div></div> Notes/letters
12	27.27%	7.45%	<div><div></div></div> Entries in journal
30	68.18%	18.63%	<div><div></div></div> Phone
8	18.18%	4.97%	<div><div></div></div> Messages via the child
34	77.27%	21.12%	<div><div></div></div> In person
38	86.36%	23.60%	<div><div></div></div> Email
6	13.64%	3.73%	<div><div></div></div> SMS/Text message
8	18.18%	4.97%	<div><div></div></div> Educational Management System
0	0.00%	0.00%	<div><div></div></div> Other (please specify)
	Count	Percent	
44	Respondents		
161	Responses		

Q23. When are challenges communicating with your child's school most frequently encountered? (Check all that apply)				
Count	Respondent %	Response %		
32	72.73%	64.00%	<div><div></div></div>	Not applicable; communicating with the school is never a problem
0	0.00%	0.00%	<div><div></div></div>	Communicating with the school is always a problem
1	2.27%	2.00%	<div><div></div></div>	Anytime I am initiating the conversation; whenever an unrequested response is warranted
3	6.82%	6.00%	<div><div></div></div>	At the beginning of the school year
0	0.00%	0.00%	<div><div></div></div>	At the end of the school year
3	6.82%	6.00%	<div><div></div></div>	When there is a change in class or teacher
4	9.09%	8.00%	<div><div></div></div>	When the child enters a new school
2	4.55%	4.00%	<div><div></div></div>	When attempting to contact persons via phone
1	2.27%	2.00%	<div><div></div></div>	When attempting to contact persons via email
0	0.00%	0.00%	<div><div></div></div>	When attempting to contact persons via an Educational Management System
2	4.55%	4.00%	<div><div></div></div>	When sending and receiving verbal messages via the child
2	4.55%	4.00%	<div><div></div></div>	Other (please specify)
Count	Percent			
1	50.00%	<div><div></div></div>		I have encountered minimal issues
1	50.00%	<div><div></div></div>		When sending a message via note in folder.
44 Respondents				
50 Responses				

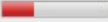
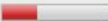


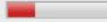

Q24. How do you determine who to contact when initiating unsolicited communication regarding your child's education?				
Count	Percent			
14	31.82%	<div><div></div></div>		I always contact the same person (i.e. the teacher or principal)
30	68.18%	<div><div></div></div>		Depending on the topic, I choose the appropriate contact
0	0.00%	<div><div></div></div>		I rarely know who to contact, so I call the office
0	0.00%	<div><div></div></div>		Other (please specify)
Count	Percent			
44	Respondents			

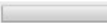




Q25. How difficult is it to determine the appropriate contact at the school to address your needs or questions?				
Count	Percent			
0	0.00%	<div><div></div></div>		Very Difficult
2	4.55%	<div><div></div></div>		Difficult
7	15.91%	<div><div></div></div>		Neutral
29	65.91%	<div><div></div></div>		Easy
6	13.64%	<div><div></div></div>		Very Easy
44 Respondents				


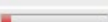


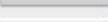
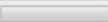
Q26. How difficult is it to communicate with the person to address your needs or questions once he/she has been identified?			
Count	Percent		
0	0.00%	<div></div>	Very Difficult, I have to send or leave several messages before I reach him/her
0	0.00%	<div></div>	Difficult, we play phone tag or he/she is only available during school hours
7	15.91%	<div></div>	Neutral
34	77.27%	<div></div>	Easy, I send a message anytime and he/she responds in a reasonable amount of time
3	6.82%	<div></div>	Very Easy, he/she is always available when I call
44	Respondents		


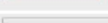
Q27. How sensitive do you perceive your child's educational information?			
Count	Percent		
24	54.55%	<div></div>	Very Sensitive (Should be shared/accessed via secure means by authorized individuals only)
14	31.82%	<div></div>	Moderately Sensitive (Should be shared/accessed by anyone by any means with parental consent)
6	13.64%	<div></div>	Not very sensitive (May be shared/accessed by family members, educational and medical professionals without parental consent.)
0	0.00%	<div></div>	Not Sensitive at all (Should be posted on public website for review by anyone interested)
44	Respondents		

Q28. With whom do you share your child's educational information? (Check all that apply)				
Count	Respondent %	Response %		
15	34.09%	12.50%	<div><div></div></div>	Friends
22	50.00%	18.33%	<div><div></div></div>	Educators
41	93.18%	34.17%	<div><div></div></div>	Family/Spouse/Child
17	38.64%	14.17%	<div><div></div></div>	Healthcare Provider
9	20.45%	7.50%	<div><div></div></div>	Advocates
2	4.55%	1.67%	<div><div></div></div>	No one
7	15.91%	5.83%	<div><div></div></div>	Tutor
7	15.91%	5.83%	<div><div></div></div>	Other Parents
0	0.00%	0.00%	<div><div></div></div>	Other (please specify)
Count	Percent			
44	Respondents			
120	Responses			

Q29. For what purpose(s) do you share your child's educational information with others? (Check all that apply)			
Count	Respondent %	Response %	
31	70.45%	36.47%	 Pride / Share accomplishments
33	75.00%	38.82%	 Describe an issue / Show example of potential problem
18	40.91%	21.18%	 Comparison to determine if progress or behavior is 'normal'
3	6.82%	3.53%	 Other (please specify)
		Count	Percent
		1	33.33%
			 N/A
		1	33.33%
			 To have everyone on the same page
44 Respondents			
85 Responses			

Q30. How difficult is it to determine what of your child's educational information to share?			
Count	Percent		
0	0.00%	 Very Difficult	
0	0.00%	 Difficult	
14	31.82%	 Neutral	
27	61.36%	 Easy	
3	6.82%	 Very Easy	
44 Respondents			

Q31. What methods do you use to share your child's educational information? (Check all that apply)			
Count	Respondent %	Response %	
19	43.18%	24.36%	 Email
13	29.55%	16.67%	 Hardcopy/Printed Report
41	93.18%	52.56%	 Verbally
4	9.09%	5.13%	 Social Network
0	0.00%	0.00%	 Other (please specify)
		Count	Percent
		1	2.27%
			 None
44 Respondents			
78 Responses			

Q32. Have you experienced any difficulty or challenges sharing your child's educational information with others?			
Count	Percent		
41	93.18%	 No	
3	6.82%	 Yes (please specify)	
		Count	Percent
		44	100.00%
44 Respondents			

Q33. On average, how long do you save the information you choose to keep?			
Count	Percent		
5	11.90%	<div><div></div></div>	Less than 1 year
9	21.43%	<div><div></div></div>	1 year
10	23.81%	<div><div></div></div>	2 - 5 years
18	42.86%	<div><div></div></div>	Indefinitely
42	Respondents		

Q34. What methods do you use to organize the items you keep? (Check all that apply)			
Count	Respondent %	Response %	
12	28.57%	15.00%	<div><div></div></div> Group by Date
8	19.05%	10.00%	<div><div></div></div> Group by Type
11	26.19%	13.75%	<div><div></div></div> Group by Subject
7	16.67%	8.75%	<div><div></div></div> Group by Source
0	0.00%	0.00%	<div><div></div></div> Information Management Tool
7	16.67%	8.75%	<div><div></div></div> Scan to Computer
15	35.71%	18.75%	<div><div></div></div> Email
9	21.43%	11.25%	<div><div></div></div> Print to Paper
5	11.90%	6.25%	<div><div></div></div> None
6	14.29%	7.50%	<div><div></div></div> Other (please specify)
Count	Percent		
1	16.67%	<div><div></div></div>	all together by child
1	16.67%	<div><div></div></div>	By grade
1	16.67%	<div><div></div></div>	Cardboard box
1	16.67%	<div><div></div></div>	Folder
1	16.67%	<div><div></div></div>	Group by Grade
1	16.67%	<div><div></div></div>	paper folders
42	Respondents		
80	Responses		

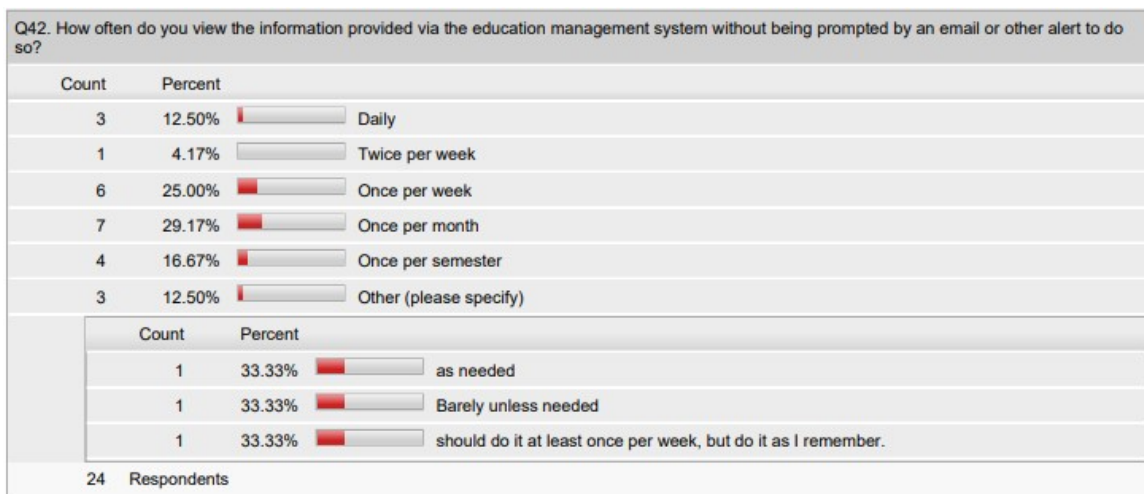
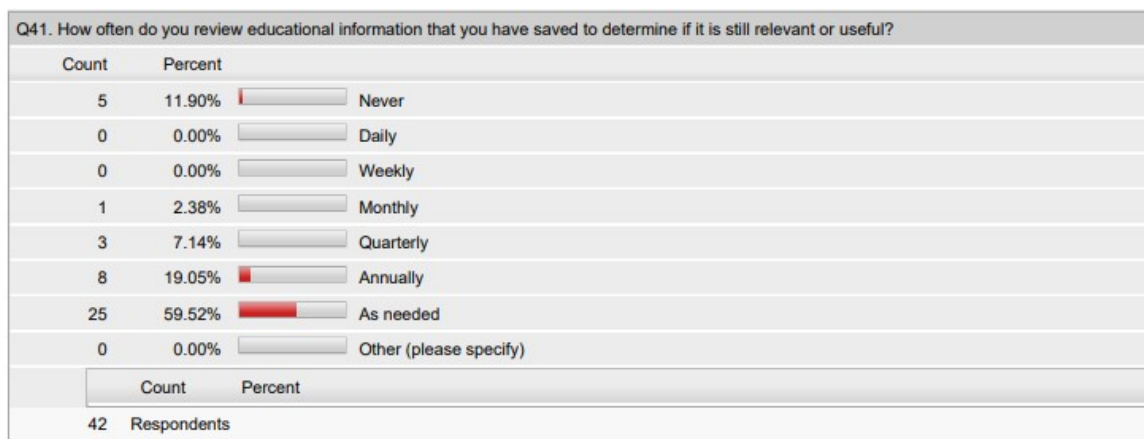
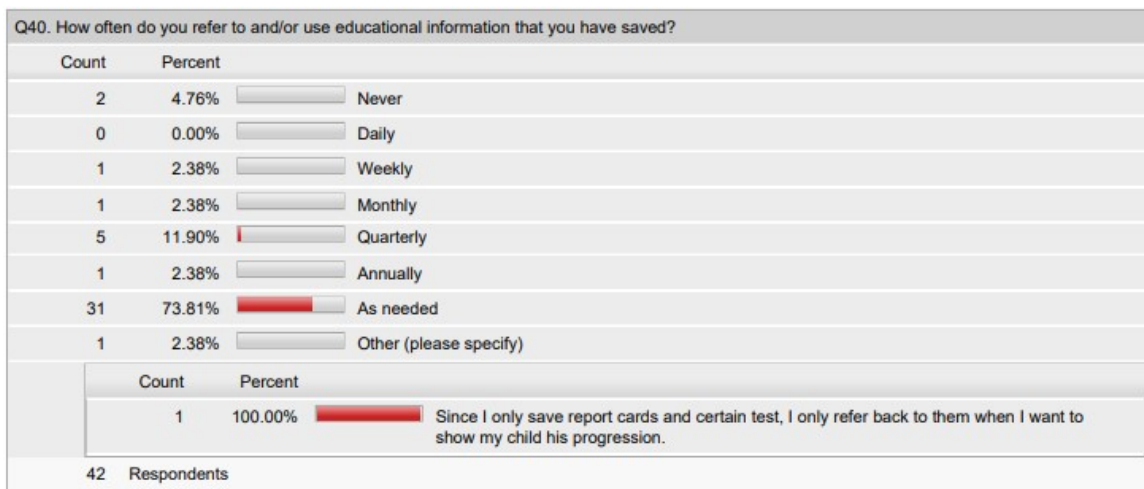
Q35. For what purpose(s) do you save educational information? (Check all that apply)			
Count	Respondent %	Response %	
24	57.14%	24.74%	<div><div></div></div> Use as supporting documentation when communicating with educators or others
19	45.24%	19.59%	<div><div></div></div> To assist child in reviewing/studying material
20	47.62%	20.62%	<div><div></div></div> Show progress or decline in development and/or skill
33	78.57%	34.02%	<div><div></div></div> As a memento; to remember child's accomplishment at a particular age or grade
1	2.38%	1.03%	<div><div></div></div> Other (please specify)
Count	Percent		
1	100.00%	<div><div></div></div>	Teaching tool for younger child
42	Respondents		
97	Responses		

Q36. Do you have any difficulty in finding saved educational information when it is needed?			
Count	Percent		
3	7.14%		Yes (please explain)
Count	Percent		
1	33.33%		Do not file on a regular basis sho paper piles up
1	33.33%		I save too much paperwork or do not file like I should
1	33.33%		Sometimes because I don't keep it in one place and it gets moved.
39	92.86%		No
42	Respondents		

Q37. What attempts have you made at combining the different types of data you receive? (Check all that apply)			
Count	Respondent %	Response %	
8	19.05%	15.69%	Scanning paper documents and filing them with electronic documents
18	42.86%	35.29%	Printing electronic reports and filing them with paper documents
9	21.43%	17.65%	Taking pictures of assignment or paper documents filing them with electronic documents
2	4.76%	3.92%	Other (please specify)
Count	Percent		
1	50.00%		I save report cards in a folder that I keep in my closet.
1	50.00%		Separating by subject
14	33.33%	27.45%	None
42	Respondents		
51	Responses		

Q38. How much time are you willing/able to dedicate to organizing the education information you receive in effort to improve your effectiveness in finding the information when it is needed?			
Count	Percent		
4	9.52%		None
18	42.86%		Less than 1 hour per week
6	14.29%		1 hour per week
2	4.76%		2 hours per week
12	28.57%		Unlimited/whatever is required
0	0.00%		Other (please specify)
Count	Percent		
42	Respondents		

Q39. Are you willing/able to document the following information for each piece of educational information you retain? Date Source Category (Report Cards, IEPs, Standardized Test Results, Progress Reports, Correspondence, Meeting Invitations, Provider Contact Information, 549 Plans, Evaluations, Assignments/School Work, Disciplinary Notices or Other) Description for items categorized as 'Other'			
Count	Percent		
28	66.67%		Yes
14	33.33%		No
42	Respondents		



Q43. What do you like most about the education management system(s) with which you interact?			
Count	Percent		
22	100.00%	<div><div></div></div>	
Count	Percent		
1	4.55%	<div><div></div></div>	24/7 access
1	4.55%	<div><div></div></div>	Accessibility
1	4.55%	<div><div></div></div>	Accessible as needed
1	4.55%	<div><div></div></div>	Available when needed
1	4.55%	<div><div></div></div>	Being able to communicate daily

1	4.55%	<div><div></div></div>	Cant say
1	4.55%	<div><div></div></div>	Detailed
1	4.55%	<div><div></div></div>	Easy access
2	9.09%	<div><div></div></div>	Easy to use
1	4.55%	<div><div></div></div>	Having the access to the information.
1	4.55%	<div><div></div></div>	I prefer hardcopies because it is easier for me to access and read.
1	4.55%	<div><div></div></div>	It's easy to use.
1	4.55%	<div><div></div></div>	It's up to date and accessible any time.
1	4.55%	<div><div></div></div>	It's updated daily
1	4.55%	<div><div></div></div>	its accessibility
1	4.55%	<div><div></div></div>	Makes student progress instantly accessible.
1	4.55%	<div><div></div></div>	Online and easy to access anywhere at any point of time
1	4.55%	<div><div></div></div>	Our school recently went to one program for all teachers, not individual teacher websites. Vast improvement.
1	4.55%	<div><div></div></div>	The convenience. If I ever had a question about my child education it wouldn't be difficult at all to get in contact with his teacher.
1	4.55%	<div><div></div></div>	The electronic systems allow to to monitor my daughters spending for lunch and other; the other electronic account allows me to monitor her aftercare payments and paperwork.
1	4.55%	<div><div></div></div>	User friendly and the school actually participated actively
22 Respondents			

Q44. What do you like least about the education management system(s) with which you interact?			
Count	Percent		
22	100.00%	<div><div></div></div>	
Count	Percent		
1	4.55%	<div><div></div></div>	Cant say
1	4.55%	<div><div></div></div>	Ease of use.
1	4.55%	<div><div></div></div>	It is not as organized
1	4.55%	<div><div></div></div>	Log in.
1	4.55%	<div><div></div></div>	N/a
3	13.64%	<div><div></div></div>	N/A
1	4.55%	<div><div></div></div>	NA
1	4.55%	<div><div></div></div>	None
1	4.55%	<div><div></div></div>	Not all the teachers update their information
1	4.55%	<div><div></div></div>	nothing
1	4.55%	<div><div></div></div>	nothing, it's fine.
1	4.55%	<div><div></div></div>	Remembering passwords
1	4.55%	<div><div></div></div>	Sometimes cumbersome to navigate. Information sometimes out of date.
1	4.55%	<div><div></div></div>	Sometimes it takes teachers too long to enter grades.
1	4.55%	<div><div></div></div>	that the passcode I am assigned is not easy to remember
1	4.55%	<div><div></div></div>	Too early for electronic grade books
1	4.55%	<div><div></div></div>	Too many system to use
1	4.55%	<div><div></div></div>	Unable to send messages or emails through the system
1	4.55%	<div><div></div></div>	use of multiple systems
1	4.55%	<div><div></div></div>	Using a password.
22 Respondents			

Q45. Have you experienced any of the following issues when interacting with education management system(s)? (Check all that apply)			
Count	Respondent %	Response %	
12	50.00%	48.00%	<div><div></div></div> Inability to access due to technical issues
3	12.50%	12.00%	<div><div></div></div> Difficulty understanding information provided due to terminology used
0	0.00%	0.00%	<div><div></div></div> Difficulty reviewing information provided due to volume of content
2	8.33%	8.00%	<div><div></div></div> Difficulty reviewing information provided due to frequency of updates
8	33.33%	32.00%	<div><div></div></div> Other (please specify)
Count	Percent		
1	12.50%	<div><div></div></div>	haven't experienced problems
1	12.50%	<div><div></div></div>	I have not experienced any issues.
2	25.00%	<div><div></div></div>	No
3	37.50%	<div><div></div></div>	None
24 Respondents			
25 Responses			

Q46. ConclusionThank you for participating in the survey. Are you available to provide additional input or evaluate potential information management solutions?				
Count	Percent			
23	56.10%	<div><div></div></div>	Yes	
18	43.90%	<div><div></div></div>	No	
41	Respondents			

APPENDIX G

Pages Excluded from Implementation

Attendance Page: The Attendance page provides the student's attendance records. It includes the running total of absences and tardies for the current school year, a calendar where parents can select a date for which to see absentee and tardy information. The month view of the calendar highlights days for which the student was absent or tardy. The page supports query by date range so parents may see the number of absences and/or tardies for the specified time period. Absentee and tardy information is recorded by date per course.

Class Schedule Page: The Schedule page shows the students class schedules for the current semester, previous semester or upcoming semester based on the view selected. By default, it shows the schedule for the current semester. If the school offers electives/student choice courses descriptions of courses available for the next semester are available from this page. The page also provides descriptions of Honors, Advanced Placement (AP) and other class levels to aid parents in determining which options are best for the student. Course descriptions for electives are also provided for this reason.

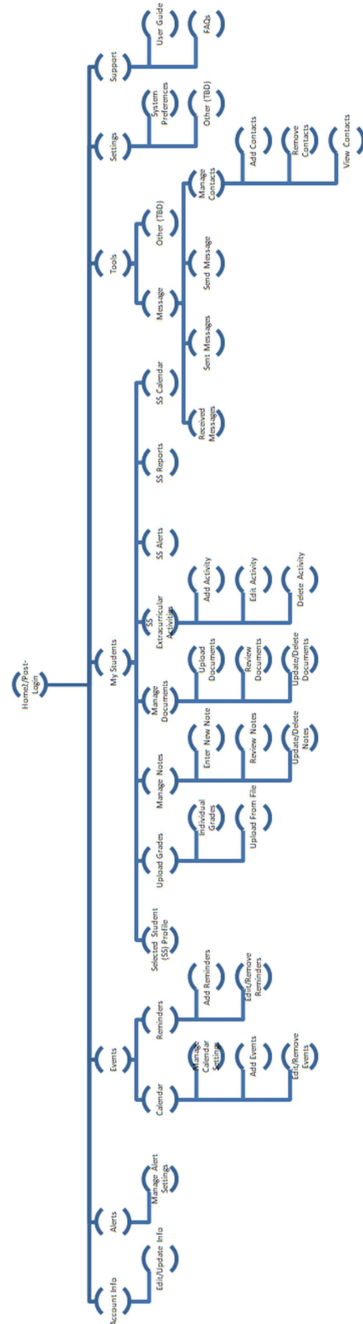
Behavior Tracking/Disciplinary Record Page: The Behavior Tracking/Disciplinary Record page allows parents to view discipline incidents in which their child was the victim, witness or offender. For each incident, a reference number, the date of occurrence and an indication of the type of incident are recorded and available for view. A summary of the number of discipline referrals and out of school suspensions is

provided on this page. A calendar view is provided so that parents can view behavior on any particular day and see indications on dates where an incident has occurred. By default information for the current school year is provided. Parents are able to query for and view this information for previous school years. To protect the privacy of other students, parents must contact the school administrator for specific details regarding any incident.

Graduation Requirements Page: As with SchoolMAX, graduation requirements such as service hours can be viewed on the Graduation Requirements page. Parents will be able to view service hours for which credit has been earned as well as the number of additional hours required to meet graduation requirements.

APPENDIX H

MyStudentScope Site Map



APPENDIX I

User Evaluation of MyStudentScope versus Paper Pre-Test Questionnaire

Thank you for agreeing to participate in the MyStudentScope Usability Test. The results from the Usability Test will be used to determine the effectiveness of a web portal and improve its functionality and use. Please answer the questions on the front and back.

Participant Number:

Section I: Please provide the following information about yourself:

Age: ☐ 20 or under ☐ 21-30 ☐ 31 – 40 ☐ 41 – 50 ☐ 51 – 60 ☐ 61 or above

Gender: ☐ Male ☐ Female

Section II: Please answer the following questions about your children:

How many children do you have? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 or more

If you answered “0”, please proceed to Section III.

How old are your children? (Check all that apply)

☐ 2 or under ☐ 3-4 ☐ 5-8 ☐ 9-11 ☐ 12-14 ☐ 15-18 ☐ 19 or above

What are the current grade levels of your children? (Check all that apply)

☐ Pre-K ☐ K ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12 ☐ Other (specify) _____

Section III: Please answer the following questions about your technology experience:

Do you use a desktop / laptop computer, smart phone or tablet? ☐ Yes ☐ No

If you answered “No”, please proceed to Section IV.

How long have you been using a desktop / laptop computer, smart phone or tablet?

☐ less than 1 year ☐ 1-5 years ☐ 6-10 years ☐ more than 10 years

How often do you use a desktop / laptop computer, smart phone or tablet?

☐ Daily ☐ Weekly ☐ Monthly

For what purpose(s) do you use desktop / laptop computers, smart phones or tablets? (Check all that apply)

☐ Work ☐ Personal ☐ Other (specify) _____

Section IV: Please answer the following questions about your experience with education information management systems (ex. ParentCONNECTxp, SchoolMAX, Edline, GradeLink, etc.):

Is an education management system available for use by parents of students at your child's/children's school?

☐ Yes ☐ No ☐ N/A

If you answered "No" or "N/A", please proceed to Section V.

Do you use the education management system to obtain information regarding your child's/children's education?

☐ Yes ☐ No

If you answered "No" or "N/A", please proceed to Section V.

How often do you log in to the education management system?

☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Other (specify) ____

Section V: Please answer the following questions:

I tend to use paper-based methods to organize information.

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

I tend to use electronic methods to organize information.

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

I manage, or would manage, information regarding my child's education using the same methods I use to organize other information.

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Effectively managing education information regarding one's child is important.

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Using technology to manage education information regarding one's child is easy.

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

APPENDIX J

User Evaluation of MyStudentScope versus Paper Test Data Student Profiles

Test Data Set: Amelia Smith

Introduction to Student:

Amelia Smith is a 5th grade student who attends Sunnyview Elementary school. Throughout the school year, she participates on a Level 4 gymnastics team and Girl Scouts troop as well as serves as a member of the Sunnyview Elementary safety patrol team.

Student Profile Summary:

Student Name: Amelia Smith
Current Grade: 5
DOB: 1/5/2007
Gender: female



Educational Career (school years):

Grade 5, 2017-2018
Grade 4, 2016-2017
Grade 3, 2015-2016
Grade 2, 2014-2015
Grade 1, 2013-2014
Grade K, 2012-2013

Extracurricular Activities:

Gymnastics (Fall, Winter, Spring, Summer)

Level 4 Team

Practice: 2 hours, 4 days/week (Mon, Fri, Wed, Sat)

Meets: Full day, 2 meets/quarter

Girl Scouts (Fall, Winter, Spring, Summer)

Girl Scout Juniors

Meetings: 1 hour, 2/month (1st Tuesday of each month)

Outings: ½ - full day, quarterly

Safety Patrol (Fall, Winter, Spring)

Training: 1 hour/school year

Duty: 15 minutes after school, 5 days/week, every other week

Test Data Set: Jack Miller

Introduction to Student:

Jack Miller is a 3rd grade student who attends Sunnyview Elementary school. Throughout the school year, he participates in basketball and bowling.

Student Profile Summary:

Student Name: Jack Miller
Current Grade: 3
DOB: 3/5/2009
Gender: male

**Educational Career (school years):**

Grade 3, 2017-2018
Grade 2, 2016-2017
Grade 1, 2015-2016
Grade K, 2014-2015

Extracurricular Activities:**Basketball (Winter)**

Practice: 1 hour, 2 days/week

Games: 1-2/week (12 regular season games total or 14 with tournament)

Bowling Leagues (Fall, Spring, Summer)

Sessions: 1 hour, 1/week

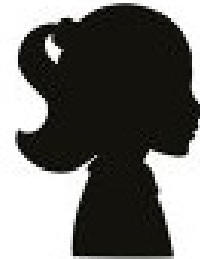
Test Data Set: Emily Lee

Introduction to Student:

Emily Lee is a 3rd grade student who attends Sunnyview Elementary school. Throughout the school year, she participates in a Level 3 gymnastics team and dance.

Student Profile Summary:

Student Name: Emily Smith
Current Grade: 3
DOB: 3/5/2009
Gender: female



Educational Career (school years):

Grade 3, 2017-2018
Grade 2, 2016-2017
Grade 1, 2015-2016
Grade K, 2014-2015

Extracurricular Activities:

Gymnastics (Fall, Winter, Spring, Summer)

Level 3 Team

Practice: 2 hours, 4 days/week (Tue, Wed, Fri, Sat (at Coach's request only))

Meets: Full day, 2 meets/quarter

Ballet/Tap (Fall, Winter, Spring, Summer)

Class: 1 hour, 2 days/week

Recital: Spring only

Test Data Set: Oliver Johnson

Introduction to Student:

Oliver Johnson is a 4th grade student who attends Sunnyview Elementary school. Throughout the school year, he participates in scouts, lacrosse and soccer.

Student Profile Summary:

Student Name: Oliver Smith
Current Grade: 4
DOB: 11/5/2008
Gender: male



Educational Career (school years):

Grade 4, 2017-2018
Grade 3, 2016-2017
Grade 2, 2015-2016
Grade 1, 2014-2015
Grade K, 2013-2014

Extracurricular Activities:

Lacrosse (Spring)

Practice: 2 hours, 2 days/week

Games: 1-2/week (12 regular season games total or 14 with tournament)

Soccer (Fall)

Practice: 1 hour, 2 days/week

Games: 1-2/week (12 regular season games total or 14 with tournament)

Cub Scouts (School Year September - May)







Meetings: 1 hour, 2/month





Outings: ½ - full day, quarterly

APPENDIX K

User Evaluation of MyStudentScope versus Paper Task List MyStudentScope

Condition – Oliver Test Data Set






Function	#	Task
	1	<p>Oliver's teacher, Mrs. Keller, sent you the following message:</p> <p>Dear Oliver's Parent, The quality of Oliver's handwriting is poor. At times it is difficult for me to read the answers on his assignments. Please work with Oliver to improve her penmanship.</p> <p>Sincerely, Mrs. Keller</p> <p>You believe Oliver's teacher is mistaken. Is the information in the folder sufficient to support your belief?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine</p>
	2	<p>Show the test facilitator document(s) that you could use to support your belief that Oliver's teacher is mistaken.</p>
	3	<p>What is Oliver's approximate average grade in math from 1st Grade through the current school year?</p> <p><input type="checkbox"/> _____ <input type="checkbox"/> Cannot determine</p>
	4	<p>What grade did Oliver receive in 1st grade science for the 3rd marking period?</p> <p><input type="checkbox"/> _____ <input type="checkbox"/> Cannot determine</p>
	5	<p>Oliver's soccer coach has advised you that he has been selected to participate in an invitational game on 5/19/2018. Are there any schedule conflicts that could interfere with Oliver's participation in the game?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine</p>
	6	<p>Oliver received a grade of 80 on a recent math assignment. Is this a usual or expected grade for Oliver? Please record your answer below.</p>









Function	#	Task
		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine
	7	What information available in the folder could you use to determine if Oliver's recent grades are normal, above average or below average based on his usual performance as a student? Please write your answer below.
	8	What trends do you notice about Oliver's course grades from Kindergarten through the current school year? Please record your answer below.
	9	When Oliver came home from school today, he told you that a student in her gym class kicked him. He reported the incident to his teacher, but no further action was taken. Has an incident like this occurred before? Use the information in the folder to make this determination. Please record your answer below. <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine
	10	When you went to the school to drop of treats for Oliver's class party you ran into the Assistant Principal, Mr. Ross, and he mentioned that one of Oliver's paintings had been selected for display in the county library. What can you do to help you remember this great accomplishment? The answer is not in the folder.

APPENDIX L

User Evaluation of MyStudentScope versus Paper Task List Paper Condition –

Amelia Test Data Set

Function	#	Task
	1	Login to MyStudentScope using the following criteria: Username: <i>AmeliaParent_</i> Password: <i>AmeliaParent_</i>
	2	Amelia received a grade of 97 on the science test she took on 4/16/2018. Enter this assignment grade in MyStudentScope.
	3	Amelia brought home an art project of which she was particularly proud. Save a picture of the art project in MyStudentScope. (Upload ArtProject.jpg from desktop).
	4	<p>Amelia's teacher, Mrs. Keller, sent you the following message:</p> <p>Dear Amelia's Parent, The quality of Amelia's handwriting is poor. At times it is difficult for me to read the answers on her assignments. Please work with Amelia to improve her penmanship.</p> <p>Sincerely, Mrs. Keller</p> <p>You believe Amelia's teacher is mistaken. Show the test facilitator evidence in MyStudentScope that you could use to support your belief that Amelia's teacher is mistaken.</p>
	5	<p>What is Amelia's approximate average grade in math from 1st Grade through the current school year?</p> <p><input type="checkbox"/> _____ <input type="checkbox"/> Cannot determine</p>
	6	<p>What grade did Amelia receive in 3rd grade science for the 3rd marking period? NOTE: Amelia was in the 3rd grade during the 2014-2015 school year.</p> <p><input type="checkbox"/> _____ <input type="checkbox"/> Cannot determine</p>

Function	#	Task
	7	<p>Amelia's gymnastics coach has advised you that she has been selected to participate in an invitational meet on 5/19/2018. Are there any schedule conflicts that could interfere with Amelia's participation in the meet?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine</p>
	8	Add a new event to the calendar on 6/16/2018 from 1pm -4pm.
	9	<p>Amelia received a grade of 92 on a recent math assignment. Is this a usual or expected grade for Amelia? Please record your answer below.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine</p>
	10	<p>What information available in MyStudentScope could you use to determine if Amelia's recent grades are normal, above average or below average based on her usual performance as a student? Please write your answer below.</p>
	11	<p>What trends do you notice about Amelia's course grades from Kindergarten through the current school year? Please record your answer below.</p>
	12	<p>When you went to the school to drop of treats for Amelia's class party you ran into the Assistant Principal, Mr. Ross, and he mentioned that one of Amelia's paintings had been selected for display in the county library. You do not want to forget this great accomplishment, so record an entry about it in MyStudentScope.</p>
	13	<p>When Amelia came home from school today, she told you that a student in her gym class kicked her. She reported the incident to her teacher, but no further action was taken. Has an incident like this occurred before? Use MyStudentScope to make this determination. Please record your answer below.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot determine</p>
	14	Add an alert in the system to notify you if Amelia receives a grade of 70 or below.

APPENDIX M

User Evaluation of MyStudentScope versus Paper Task Post-Paper Condition

Questionnaire

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Overall, I am satisfied with how easy it is to use the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	I was able to complete the tasks and scenarios quickly using the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	I felt comfortable using the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	It was difficult to learn to use the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	I believe I could become productive quickly using the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Whenever I made a mistake using the paper system, it is difficult and time consuming to recover.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	It was difficult to find the information I needed when using the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	The information was effective in helping me complete the tasks and scenarios.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Overall, I am satisfied with the paper system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	At some points while performing the tasks I felt frustrated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If Strongly Agree or Agree with Question 10, when and why did you feel frustrated? _____

APPENDIX N

User Evaluation of MyStudentScope versus Paper Post-MyStudentScope

Condition Questionnaire

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Overall, I am satisfied with how easy it is to use MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	I was able to complete the tasks and scenarios quickly using MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	I felt comfortable using MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	It was difficult to learn to use MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	I believe I could become productive quickly using MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Whenever I made a mistake using MyStudentScope, it is difficult and time consuming to recover.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	The information (such as on-screen messages and other documentation) provided with MyStudentScope was clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	It was difficult to find the information I needed when using MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	The information was effective in helping me complete the tasks and scenarios.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10	The organization of information on the MyStudentScope screens was unclear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	I liked using the interface of MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	MyStudentScope has all the functions and capabilities I expect it to have.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Overall, I am satisfied with MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	At some points while performing the tasks I felt frustrated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If Disagree or Strongly Disagree with Question 12, what functions or capabilities were missing? _____

If Strongly Agree or Agree with Question 14, when and why did you feel frustrated? _____

APPENDIX O

User Evaluation of MyStudentScope versus Paper Post-Test Comparison

Questionnaire

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Using MyStudentScope to perform tasks was easier than using paper methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	I was able to complete the tasks and scenarios more quickly using paper-based methods than when using MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	I believe I would be more productive using MyStudentScope than using paper methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Whenever I made a mistake, I was able to recover more easily and quickly when using paper-based methods than when using MyStudentScope.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	It was easier to find the information I needed using MyStudentScope than when using paper-based methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	I felt more frustrated completing the task using MyStudentScope than when completing the task using paper-based methods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any other feedback you would like to provide.

APPENDIX P

User Evaluation of MyStudentScope versus Paper Pre-Test Survey Responses

Q1. Participant Number:			
Count	Percent		
23	100.00%	<div><div></div></div>	
23	Respondents		

Q2. Age:			
Count	Percent		
0	0.00%	<div><div></div></div>	20 or under
0	0.00%	<div><div></div></div>	21 - 30
13	59.09%	<div><div></div></div>	31 - 40
6	27.27%	<div><div></div></div>	41 - 50
3	13.64%	<div><div></div></div>	51 - 60
0	0.00%	<div><div></div></div>	61 or above
22	Respondents		

Q3. Gender:			
Count	Percent		
6	27.27%	<div><div></div></div>	Male
16	72.73%	<div><div></div></div>	Female
22	Respondents		

Q4. How many children do you have?			
Count	Percent		
0	0.00%	<div><div></div></div>	0
1	4.55%	<div><div></div></div>	1
15	68.18%	<div><div></div></div>	2
4	18.18%	<div><div></div></div>	3
2	9.09%	<div><div></div></div>	4
0	0.00%	<div><div></div></div>	5 or more
22	Respondents		

Q5. How old are your children? (Check all that apply)				
Count	Respondent %	Response %		
5	22.73%	12.20%	<div><div></div></div>	2 or under
7	31.82%	17.07%	<div><div></div></div>	3 - 4
11	50.00%	26.83%	<div><div></div></div>	5 - 8
4	18.18%	9.76%	<div><div></div></div>	9 - 11
7	31.82%	17.07%	<div><div></div></div>	12 - 14
3	13.64%	7.32%	<div><div></div></div>	15 - 18
4	18.18%	9.76%	<div><div></div></div>	19 or above
22 Respondents				
41 Responses				

Q6. What are the current grade levels of your children? (Check all that apply)				
Count	Respondent %	Response %		
7	31.82%	17.95%	<div><div></div></div>	Pre-K
3	13.64%	7.69%	<div><div></div></div>	K
4	18.18%	10.26%	<div><div></div></div>	1
1	4.55%	2.56%	<div><div></div></div>	2
4	18.18%	10.26%	<div><div></div></div>	3
2	9.09%	5.13%	<div><div></div></div>	4
0	0.00%	0.00%	<div><div></div></div>	5
1	4.55%	2.56%	<div><div></div></div>	6
5	22.73%	12.82%	<div><div></div></div>	7
1	4.55%	2.56%	<div><div></div></div>	8
3	13.64%	7.69%	<div><div></div></div>	9
0	0.00%	0.00%	<div><div></div></div>	10
0	0.00%	0.00%	<div><div></div></div>	11
3	13.64%	7.69%	<div><div></div></div>	12
5	22.73%	12.82%	<div><div></div></div>	Other (please specify)

Count	Percent		
1	20.00%	<div><div></div></div>	2 in college (Sophomore & Junior)
1	20.00%	<div><div></div></div>	2 year old program
1	20.00%	<div><div></div></div>	3 weeks old
1	20.00%	<div><div></div></div>	College freshman and sophomore
1	20.00%	<div><div></div></div>	Daycare
22 Respondents			
39 Responses			

Q7. Do you use a desktop / laptop computer, smart phone or tablet?			
Count	Percent		
22	100.00%	<div><div></div></div>	Yes
0	0.00%	<div><div></div></div>	No
22	Respondents		

Q8. How long have you been using a desktop / laptop computer, smart phone or tablet?			
Count	Percent		
0	0.00%	<div><div></div></div>	Less than 1 year
0	0.00%	<div><div></div></div>	1 - 5 years
0	0.00%	<div><div></div></div>	6 - 10 years
22	100.00%	<div><div></div></div>	More than 10 years
22	Respondents		

Q9. How often do you use a desktop / laptop computer, smart phone or tablet?			
Count	Percent		
22	100.00%	<div><div></div></div>	Daily
0	0.00%	<div><div></div></div>	Weekly
0	0.00%	<div><div></div></div>	Monthly
22	Respondents		

Q10. For what purpose(s) do you use desktop / laptop computers, smart phones or tablets? (Check all that apply)			
Count	Respondent %	Response %	
19	86.36%	45.24%	<div><div></div></div> Work
22	100.00%	52.38%	<div><div></div></div> Personal
1	4.55%	2.38%	<div><div></div></div> Other (please specify)
	Count	Percent	
	1	100.00%	<div><div></div></div> fun
22	Respondents		
42	Responses		

Q11. Is an education management system available for use by parents of students at your child's/children's school?			
Count	Percent		
16	72.73%	<div><div></div></div>	Yes
4	18.18%	<div><div></div></div>	No
2	9.09%	<div><div></div></div>	N/A
22	Respondents		

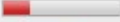

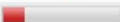

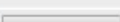
Q12. Do you use the education management system to obtain information regarding your child's/children's education?			
Count	Percent		
13	81.25%	<div><div></div></div>	Yes
3	18.75%	<div><div></div></div>	No
16	Respondents		

Q13. How often do you log in to the education management system?			
Count	Percent		
2	12.50%	<div><div></div></div>	Daily
4	25.00%	<div><div></div></div>	Weekly
5	31.25%	<div><div></div></div>	Monthly
3	18.75%	<div><div></div></div>	Quarterly
2	12.50%	<div><div></div></div>	Other (please specify)
Count	Percent		
1	50.00%	<div><div></div></div>	n/a
1	50.00%	<div><div></div></div>	never
16	Respondents		


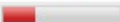
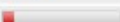
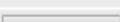
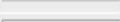
Q14. Section V: Please answer the following questions: - I tend to use paper-based methods to organize information.			
Count	Percent		
1	4.55%	<div><div></div></div>	Strongly agree
11	50.00%	<div><div></div></div>	Agree
6	27.27%	<div><div></div></div>	Neutral
1	4.55%	<div><div></div></div>	Disagree
3	13.64%	<div><div></div></div>	Strongly disagree
22	Respondents		

Q15. Section V: Please answer the following questions: - I tend to use electronic methods to organize information.			
Count	Percent		
8	36.36%	<div><div></div></div>	Strongly agree
8	36.36%	<div><div></div></div>	Agree
3	13.64%	<div><div></div></div>	Neutral
3	13.64%	<div><div></div></div>	Disagree
0	0.00%	<div><div></div></div>	Strongly disagree
22	Respondents		


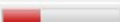

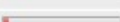
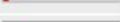
Q16. Section V: Please answer the following questions: - I manage, or would manage, information regarding my child's education using the same methods I use to organize other information.

Count	Percent		
5	22.73%		Strongly agree
13	59.09%		Agree
4	18.18%		Neutral
0	0.00%		Disagree
0	0.00%		Strongly disagree
22	Respondents		

Q17. Section V: Please answer the following questions: - Effectively managing education information regarding one's child is important.

Count	Percent		
14	63.64%		Strongly agree
6	27.27%		Agree
2	9.09%		Neutral
0	0.00%		Disagree
0	0.00%		Strongly disagree
22	Respondents		

Q18. Section V: Please answer the following questions: - Using technology to manage education information regarding one's child is easy.

Count	Percent		
6	27.27%		Strongly agree
7	31.82%		Agree
8	36.36%		Neutral
1	4.55%		Disagree
0	0.00%		Strongly disagree
22	Respondents		

APPENDIX Q

User Evaluation of MyStudentScope versus Paper MyStudentScope Condition

Post-Test Survey Responses

Q1. Participant Number:		
Count	Percent	
23	100.00%	
23	Respondents	

Q2. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Overall, I am satisfied with how easy it is to use MyStudentScope.				
Count	Percent			
8	34.78%		Strongly agree	
9	39.13%		Agree	
6	26.09%		Neutral	
0	0.00%		Disagree	
0	0.00%		Strongly disagree	
23	Respondents			

Q3. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I was able to complete the tasks and scenarios quickly using MyStudentScope.				
Count	Percent			
6	26.09%		Strongly agree	
10	43.48%		Agree	
5	21.74%		Neutral	
2	8.70%		Disagree	
0	0.00%		Strongly disagree	
23	Respondents			

Q4. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I felt comfortable using MyStudentScope.

Count	Percent		
6	26.09%	<div><div></div></div>	Strongly agree
6	26.09%	<div><div></div></div>	Agree
10	43.48%	<div><div></div></div>	Neutral
1	4.35%	<div><div></div></div>	Disagree
0	0.00%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q5. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - It was difficult to learn to use MyStudentScope.

Count	Percent		
0	0.00%	<div><div></div></div>	Strongly agree
1	4.35%	<div><div></div></div>	Agree
2	8.70%	<div><div></div></div>	Neutral
17	73.91%	<div><div></div></div>	Disagree
3	13.04%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q6. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I believe I could become productive quickly using MyStudentScope.

Count	Percent		
9	39.13%	<div><div></div></div>	Strongly agree
13	56.52%	<div><div></div></div>	Agree
1	4.35%	<div><div></div></div>	Neutral
0	0.00%	<div><div></div></div>	Disagree
0	0.00%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q7. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Whenever I made a mistake using MyStudentScope, it is difficult and time consuming to recover.

Count	Percent		
1	4.35%	<div><div></div></div>	Strongly agree
1	4.35%	<div><div></div></div>	Agree
6	26.09%	<div><div></div></div>	Neutral
11	47.83%	<div><div></div></div>	Disagree
4	17.39%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q8. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - The information (such as on-screen messages and other documentation) provided with MyStudentScope was clear.

Count	Percent		
8	34.78%	<div><div></div></div>	Strongly agree
13	56.52%	<div><div></div></div>	Agree
1	4.35%	<div><div></div></div>	Neutral
1	4.35%	<div><div></div></div>	Disagree
0	0.00%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q9. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - It was difficult to find the information I needed when using MyStudentScope.

Count	Percent		
1	4.35%	<div><div></div></div>	Strongly agree
1	4.35%	<div><div></div></div>	Agree
6	26.09%	<div><div></div></div>	Neutral
12	52.17%	<div><div></div></div>	Disagree
3	13.04%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q10. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - The information was effective in helping me complete the tasks and scenarios.

Count	Percent		
8	34.78%	<div><div></div></div>	Strongly agree
13	56.52%	<div><div></div></div>	Agree
2	8.70%	<div><div></div></div>	Neutral
0	0.00%	<div><div></div></div>	Disagree
0	0.00%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q11. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - The organization of information on the MyStudentScope screens was unclear.

Count	Percent		
1	4.35%	<div><div></div></div>	Strongly agree
1	4.35%	<div><div></div></div>	Agree
3	13.04%	<div><div></div></div>	Neutral
16	69.57%	<div><div></div></div>	Disagree
2	8.70%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q12. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I liked using the interface of MyStudentScope.				
Count	Percent			
6	26.09%	<div><div></div></div>	Strongly agree	
14	60.87%	<div><div></div></div>	Agree	
3	13.04%	<div><div></div></div>	Neutral	
0	0.00%	<div><div></div></div>	Disagree	
0	0.00%	<div><div></div></div>	Strongly disagree	
23	Respondents			

Q13. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - MyStudentScope has all the functions and capabilities I expect it to have.				
Count	Percent			
5	21.74%	<div><div></div></div>	Strongly agree	
12	52.17%	<div><div></div></div>	Agree	
4	17.39%	<div><div></div></div>	Neutral	
2	8.70%	<div><div></div></div>	Disagree	
0	0.00%	<div><div></div></div>	Strongly disagree	
23	Respondents			

Q14. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Overall, I am satisfied with MyStudentScope.				
Count	Percent			
6	26.09%	<div><div></div></div>	Strongly agree	
16	69.57%	<div><div></div></div>	Agree	
1	4.35%	<div><div></div></div>	Neutral	
0	0.00%	<div><div></div></div>	Disagree	
0	0.00%	<div><div></div></div>	Strongly disagree	
23	Respondents			

Q15. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - At some points while performing the tasks I felt frustrated.				
Count	Percent			
1	4.35%	<div><div></div></div>	Strongly agree	
8	34.78%	<div><div></div></div>	Agree	
2	8.70%	<div><div></div></div>	Neutral	
9	39.13%	<div><div></div></div>	Disagree	
3	13.04%	<div><div></div></div>	Strongly disagree	
23	Respondents			

Q16. If Disagree or Strongly Disagree that MyStudentScope has all the functions and capabilities you expect, what functions or capabilities were missing?			
Count	Percent		
14	100.00%	<div><div></div></div>	
Count	Percent		
1	7.14%	<div><div></div></div>	Average calculation should not be manual process. Required fields should be identified
1	7.14%	<div><div></div></div>	Fields for special education students.
1	7.14%	<div><div></div></div>	I found site easy to use with the brief instructions given to me. I may be confused on what area I may want to save or record information as somethings can fit multiple areas of dashboard.
1	7.14%	<div><div></div></div>	I wasn't sure were to go
1	7.14%	<div><div></div></div>	I wish there was a help button that I could use to direct me to different areas of the application.
1	7.14%	<div><div></div></div>	MyStudent Scope was not difficult or time consuming. The menu made it easy to find the information and the screen was clearly defined. I did not feel frustrated at any point.
3	21.43%	<div><div></div></div>	N/A
1	7.14%	<div><div></div></div>	none
1	7.14%	<div><div></div></div>	None
1	7.14%	<div><div></div></div>	some of the titles were misleading
1	7.14%	<div><div></div></div>	When creating events, it would be helpful that the calendar pops up to select proper date/year or you have the ability of importing your cell phone/tablet calendar into the tool.
1	7.14%	<div><div></div></div>	yes
14 Respondents			

Q17. If Strongly Agree or Agree that at some points while performing the tasks you felt frustrated, when and why did you feel frustrated?			
Count	Percent		
15	100.00%	<div><div></div></div>	
Count	Percent		
1	6.67%	<div><div></div></div>	Agree
1	6.67%	<div><div></div></div>	I did not feel frustrated with using MyStudent Scope. Only when filling out the survey and having to scroll up and down to select the appropriate columns.
1	6.67%	<div><div></div></div>	I feel there could be some extra pointer in the application. You could provide a tutorial tour of the application to navigate around the tool better. I would also suggest some changes to the dashboard.
1	6.67%	<div><div></div></div>	I felt frustrated when I could not locate quickly where the information was located in the tool. Was confusing at times on what information I can find in course vs. assignments.
1	6.67%	<div><div></div></div>	I wasn't frustrated; navigation was difficult at times due to the newness of the tool. The Quick Guide was extremely helpful when I was stuck. The directions were clear and allowed me to fix my mistakes quickly.
1	6.67%	<div><div></div></div>	It is easier to gather information using MyStudentScope.
1	6.67%	<div><div></div></div>	Just not familiar with the way the system works. I'm sure once I got used to it it would not be frustrating.
1	6.67%	<div><div></div></div>	Just unfamiliar with system, but would be easier as I learned to navigate the site better
3	20.00%	<div><div></div></div>	N/A
1	6.67%	<div><div></div></div>	none
1	6.67%	<div><div></div></div>	Not immediately knowing where to find specific information.
1	6.67%	<div><div></div></div>	Some documents, uploaded into system, won't show title which will bring confusion for us.
1	6.67%	<div><div></div></div>	some of the titles were misleading
15 Respondents			

APPENDIX R

User Evaluation of MyStudentScope versus Paper Paper Condition Post-Test

Survey Responses

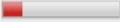
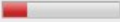
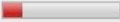
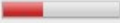
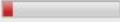
Q1. Participant Number:		
Count	Percent	
23	100.00%	
23	Respondents	

Q2. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Overall, I am satisfied with how easy it is to use the paper system.				
Count	Percent			
1	4.35%		Strongly agree	
3	13.04%		Agree	
6	26.09%		Neutral	
9	39.13%		Disagree	
4	17.39%		Strongly disagree	
23	Respondents			

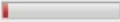
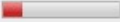
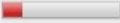
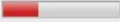

Q3. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I was able to complete the tasks and scenarios quickly using the paper system.				
Count	Percent			
1	4.35%		Strongly agree	
5	21.74%		Agree	
6	26.09%		Neutral	
8	34.78%		Disagree	
3	13.04%		Strongly disagree	
23	Respondents			

Q4. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I felt comfortable using the paper system.				
Count	Percent			
2	8.70%		Strongly agree	
6	26.09%		Agree	
5	21.74%		Neutral	
7	30.43%		Disagree	
3	13.04%		Strongly disagree	
23	Respondents			

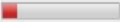
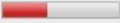
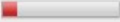

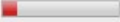
Q5. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - It was difficult to learn to use the paper system.

Count	Percent		
4	17.39%		Strongly agree
5	21.74%		Agree
4	17.39%		Neutral
8	34.78%		Disagree
2	8.70%		Strongly disagree
23	Respondents		



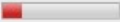
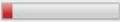

Q6. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I believe I could become productive quickly using the paper system.

Count	Percent		
1	4.35%		Strongly agree
4	17.39%		Agree
4	17.39%		Neutral
7	30.43%		Disagree
7	30.43%		Strongly disagree
23	Respondents		

Q7. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Whenever I made a mistake using the paper system, it is difficult and time consuming to recover.

Count	Percent		
3	13.04%		Strongly agree
9	39.13%		Agree
3	13.04%		Neutral
5	21.74%		Disagree
3	13.04%		Strongly disagree
23	Respondents		

Q8. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - It was difficult to find the information I needed when using the paper system.

Count	Percent		
9	39.13%		Strongly agree
6	26.09%		Agree
4	17.39%		Neutral
2	8.70%		Disagree
2	8.70%		Strongly disagree
23	Respondents		

Q9. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - The information was effective in helping me complete the tasks and scenarios.

Count	Percent		
2	8.70%	<div><div></div></div>	Strongly agree
10	43.48%	<div><div></div></div>	Agree
3	13.04%	<div><div></div></div>	Neutral
7	30.43%	<div><div></div></div>	Disagree
1	4.35%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q10. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Overall, I am satisfied with the paper system.

Count	Percent		
1	4.35%	<div><div></div></div>	Strongly agree
3	13.04%	<div><div></div></div>	Agree
4	17.39%	<div><div></div></div>	Neutral
11	47.83%	<div><div></div></div>	Disagree
4	17.39%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q11. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - At some points while performing the tasks I felt frustrated.

Count	Percent		
8	34.78%	<div><div></div></div>	Strongly agree
9	39.13%	<div><div></div></div>	Agree
2	8.70%	<div><div></div></div>	Neutral
2	8.70%	<div><div></div></div>	Disagree
2	8.70%	<div><div></div></div>	Strongly disagree
23	Respondents		

Q12. If Strongly Agree or Agree that at some points while performing the tasks you felt frustrated, when and why did you feel frustrated?			
Count	Percent		
19	100.00%	<div></div>	
Count	Percent		
1	5.26%	<div></div>	agree
1	5.26%	<div></div>	Calendar is not clear and hard to find information
1	5.26%	<div></div>	Hard to find information and nothing was in order.
1	5.26%	<div></div>	I felt frustrated at times when I had to locate multiple pieces of documentation to determine an overall picture of how the student performed over a period of several years. I also felt frustrated when I tried to find documentation of any incidents that had occurred previously. After trying to locate the documentation of an incident, I gave up because I did not want to scan each document to find the answer.
1	5.26%	<div></div>	I felt frustrated because i couldn't find the information fast enough.
1	5.26%	<div></div>	I felt frustrated when I couldn't find the information I need. It had been difficult to find the needed information with paper system.
1	5.26%	<div></div>	It was frustrating not knowing if there was a paper in there with the answer I needed. I didn't want to give an answer to some of the questions without first looking at every paper to be completely sure of my answer, but at the same time I didn't really want to look at each and every paper.
1	5.26%	<div></div>	It was just a lot to shuffle through. There were unnecessary papers in there such as bake sales
1	5.26%	<div></div>	n/a
1	5.26%	<div></div>	N/A
1	5.26%	<div></div>	No instruction, hard to find information
1	5.26%	<div></div>	No knowing if I had and could find the required information
1	5.26%	<div></div>	only when I couldn't determine what day was ballet rehearsals held on during the week
1	5.26%	<div></div>	searching through papers that I had already searched before
1	5.26%	<div></div>	The paper system was very unorganized and the data was not comprehensive.
1	5.26%	<div></div>	There was too many papers to go through and they weren't in any order.
1	5.26%	<div></div>	trying to find certain papers in so many papers, documents not completely in order by date, hard to tell at first that there was multiple years of paperwork because labels were not the most helpful
1	5.26%	<div></div>	using the paper system was overwhelming due to the amount of papers. I had to get acclimated using the paper system. I was frustrated due to the amount of paper within the folder. It wasn't that difficult finding the information that I needs, just time consuming
1	5.26%	<div></div>	When trying to find an average grade, trying to find a conflict schedule on a certain day and trying to find whether there has a similar event in a certain day.
19 Respondents			

APPENDIX S

User Evaluation of MyStudentScope versus Paper Comparison Post-Test

Survey Responses

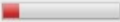
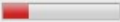
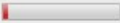

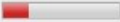
Q1. Participant Number:		
Count	Percent	
23	100.00%	<div><div></div></div>
23	Respondents	

Q2. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Using MyStudentScope to perform tasks was easier than using paper-based methods.				
Count	Percent			
13	59.09%	<div><div></div></div>	Strongly agree	
6	27.27%	<div><div></div></div>	Agree	
3	13.64%	<div><div></div></div>	Neutral	
0	0.00%	<div><div></div></div>	Disagree	
0	0.00%	<div><div></div></div>	Strongly disagree	
22	Respondents			



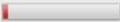
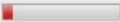
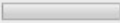
Q3. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I was able to complete the tasks and scenarios more quickly using paper-based methods than when using MyStudentScope.				
Count	Percent			
4	18.18%	<div><div></div></div>	Strongly agree	
2	9.09%	<div><div></div></div>	Agree	
5	22.73%	<div><div></div></div>	Neutral	
7	31.82%	<div><div></div></div>	Disagree	
4	18.18%	<div><div></div></div>	Strongly disagree	
22	Respondents			

Q4. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I believe I would be more productive using MyStudentScope than using paper-based methods.				
Count	Percent			
7	31.82%	<div><div></div></div>	Strongly agree	
13	59.09%	<div><div></div></div>	Agree	
2	9.09%	<div><div></div></div>	Neutral	
0	0.00%	<div><div></div></div>	Disagree	
0	0.00%	<div><div></div></div>	Strongly disagree	
22	Respondents			






Q5. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - Whenever I made a mistake, I was able to recover more easily and quickly when using paper-based methods than when using MyStudentScope.

Count	Percent		
3	13.64%		Strongly agree
5	22.73%		Agree
1	4.55%		Neutral
8	36.36%		Disagree
5	22.73%		Strongly disagree
22	Respondents		

Q6. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - It was easier to find the information I needed using MyStudentScope than when using paper-based methods.

Count	Percent		
11	50.00%		Strongly agree
8	36.36%		Agree
1	4.55%		Neutral
2	9.09%		Disagree
0	0.00%		Strongly disagree
22	Respondents		

Q7. Thank you for participating in the MyStudentScope Usability Test. Please answer the following questions. - I felt more frustrated completing the task using MyStudentScope than when completing the task using paper-based methods.

Count	Percent		
0	0.00%		Strongly agree
4	18.18%		Agree
1	4.55%		Neutral
9	40.91%		Disagree
8	36.36%		Strongly disagree
22	Respondents		

Q8. Any other feedback you would like to provide.			
Count	Percent		
16	100.00%	<div><div></div></div>	
Count	Percent		
1	6.25%	<div><div></div></div>	Again, once I became familiar with the system, it would probably be more helpful but it is a bit intimidating for a person like myself who is not computer savvy.
1	6.25%	<div><div></div></div>	Although the MyStudentScope was easier to use, some parts of it were not as intuitive as I thought they should be. I also believe that more calculations should be done with the tool. Many of the icons in the tool were very small and not easy to navigate.
1	6.25%	<div><div></div></div>	Fix the scroll up and down for the survey. Go Green!
1	6.25%	<div><div></div></div>	It is easier to gather and review data using MyStudentScope.
1	6.25%	<div><div></div></div>	Much easier to use student scope, especially in the digital world we live in now.
1	6.25%	<div><div></div></div>	MyStudentScope is far more useful and easy to use than traditional paper-based methods. Easy to retrieve the necessary information and make a alert or reminder.
1	6.25%	<div><div></div></div>	MyStudentScope would not be as effective if I didn't regularly input the information. Knowing myself, I might not keep up with entering each of the assignments throughout the school year.
1	6.25%	<div><div></div></div>	N/A
1	6.25%	<div><div></div></div>	Need an instruction page online for MyStudentScope
1	6.25%	<div><div></div></div>	Once you learn the system. I'm sure it will be helpful.
1	6.25%	<div><div></div></div>	Overall I liked the site and see how it can be helpful to parents. It may be a lot of work to enter all this information, so it would def be nice if this could integrate with the school systems software for graded assignments and with my google calendar
1	6.25%	<div><div></div></div>	recommend making the tool more user-friendly.
1	6.25%	<div><div></div></div>	should do a follow up 2 times to see if it becomes easier to use with practice
1	6.25%	<div><div></div></div>	Student Scope was a much better method to keep track of students records.
1	6.25%	<div><div></div></div>	The font could be a little bigger so it would easier to read. The ability to make edits for notes would be a nice functionality.Overall, the system was easy to navigate and learn how to use.
1	6.25%	<div><div></div></div>	You can recover more with Mystudent scope
16 Respondents			

APPENDIX T



Theresa Matthews <theresa.scott@gmail.com>

RE: IRB Application

1 message

Mogge, Stephen G. <SMogge@towson.edu>

Mon, Apr 29, 2013 at 10:22 AM

To: Theresa Matthews <theresa.scott@gmail.com>

Cc: "Feng, Jinjuan" <jfeng@towson.edu>, Office of University Research Services <ospr@towson.edu>

Very good then. I will submit an approval for the first stage of the research along with a copy of this correspondence to the OURS. When you are ready for the second stage and can provide more detail, then please provide an addendum.

Please let me know if you have any further questions along the way.

Best, sm

From: Theresa Matthews [mailto:theresa.scott@gmail.com]

Sent: Thursday, April 25, 2013 10:43 PM

To: Mogge, Stephen G.

Cc: Feng, Jinjuan

Subject: Re: IRB Application

Dr. Mogge,

Yes, it is too early to supply the information required because the results of the survey are needed before the prototype of the software is designed. Submitting a follow-up addendum sounds like it will be the best approach to ensure I am able to provide the required level of detail to the review board.

Kind Regards,

Theresa

On Thu, Apr 25, 2013 at 9:51 AM, Mogge, Stephen G. <SMogge@towson.edu> wrote:

Hi Theresa,

Thanks for your response. It is a start to what I need to know but I will still need a lot more description of what the software tool for parents will include, look like, etc. (note the incredible detail already provided in your surveys). Also, I'll need to know more specifics than where the user study "can" take place but rather where the user study "will" take place.

APPENDIX U

Consent Agreements for Online Survey 1

Parental Information Management Methods 1

Description: I would like to preview the project by 8/14/2013.

Date Created: 8/7/2013 9:29:34 PM

Date Range: 9/12/2013 12:00:00 AM - 11/17/2013 11:59:00 PM

Total Respondents: 45

Q1. Do you agree to participate?				
Count	Percent			
45	100.00%	<div><div></div></div>	Yes, I agree.	
0	0.00%	<div><div></div></div>	No, I do not agree.	
45	Respondents			

Q2. What is your age?				
Count	Percent			
0	0.00%	<div><div></div></div>	20 or under	
5	11.36%	<div><div></div></div>	21 - 30	
19	43.18%	<div><div></div></div>	31 - 40	
14	31.82%	<div><div></div></div>	41 - 50	
6	13.64%	<div><div></div></div>	51 or older	
44	Respondents			

Q3. What is your gender?				
Count	Percent			
30	68.18%	<div><div></div></div>	Female	
14	31.82%	<div><div></div></div>	Male	
44	Respondents			

Q4. How many children are in your household (0 - 18 years of age)?				
Count	Percent			
2	4.55%	<div><div></div></div>	0	
13	29.55%	<div><div></div></div>	1	
26	59.09%	<div><div></div></div>	2 - 3	
2	4.55%	<div><div></div></div>	4 - 5	
1	2.27%	<div><div></div></div>	6 or more	
44	Respondents			

Q5. What is/are the age(s) of the child(ren) in your household? (List the age of every child)				
Count	Percent			
39	100.00%	<div><div></div></div>		
39	Respondents			

Q6. Do(es) your child(ren) have any special medical or educational needs?				
Count	Percent			
13	33.33%	<div><div></div></div>	Yes	
26	66.67%	<div><div></div></div>	No	
39	Respondents			

APPENDIX V

Consent Agreements for Online Survey 2

Parental Information Management Methods – Educational Information

Description:

Date Created: 9/1/2015 10:23:18 PM

Date Range: 9/21/2015 12:00:00 AM - 11/27/2015 11:59:00 PM

Total Respondents: 56

Q1. Do you agree to participate?			
Count	Percent		
56	100.00%	<div><div></div></div>	Yes
0	0.00%	<div><div></div></div>	No
56	Respondents		

Q2. What is your age?			
Count	Percent		
0	0.00%	<div><div></div></div>	20 or under
7	12.73%	<div><div></div></div>	21 - 30
26	47.27%	<div><div></div></div>	31- 40
18	32.73%	<div><div></div></div>	41 -50
4	7.27%	<div><div></div></div>	51 or older
55	Respondents		

Q3. What is your gender?			
Count	Percent		
38	69.09%	<div><div></div></div>	Female
17	30.91%	<div><div></div></div>	Male
55	Respondents		

Q4. How many children are in your household (0-18 years of age)?			
Count	Percent		
9	16.36%	<div><div></div></div>	0
15	27.27%	<div><div></div></div>	1
31	56.36%	<div><div></div></div>	2-3
0	0.00%	<div><div></div></div>	4-5
0	0.00%	<div><div></div></div>	6 or more
55	Respondents		

Q5. In what grade(s) are your children? (Check all that apply)				
Count	Respondent %	Response %		
15	32.61%	22.06%	<div><div></div></div>	Pre-School (K3/K4)
6	13.04%	8.82%	<div><div></div></div>	Kindergarten (K5)
18	39.13%	26.47%	<div><div></div></div>	Elementary (Grade 1-5)
9	19.57%	13.24%	<div><div></div></div>	Middle (Grade 6-8)
13	28.26%	19.12%	<div><div></div></div>	High (Grade 9-12)
7	15.22%	10.29%	<div><div></div></div>	Other (please specify)
46	Respondents			
68	Responses			

APPENDIX W



Theresa Matthews <theresa.scott@gmail.com>

IRB Approval 1703017723

1 message

IRB <irb@towson.edu>

Mon, Aug 7, 2017 at 10:37 AM

To: "Feng, Jinjuan" <jfeng@towson.edu>

Cc: "Scott, Theresa" <tscott2@students.towson.edu>, "Zheng, Ying" <yzheng@towson.edu>, IRB <irb@towson.edu>

The IRB has approved your protocol "Improving Parental Management of Information Regarding Their Children's Education" as expedited, **effective 8/7/2017 and expiring 8/6/2018**.

Your IRB protocol can now be viewed in MyOSPR. **Student investigators: protocols can be viewed by your faculty advisor.** For more information, please visit: <http://www.towson.edu/academics/research/sponsored/myospr.html>

Please Note: Formal approval letters are now provided upon request. If you would like to have one drafted, please notify the IRB staff.

If you should encounter any new risks, reactions, or injuries to subjects while conducting your research, please notify IRB@towson.edu. If your research has been approved as expedited and will extend beyond one year in duration, you will need to submit an annual renewal notice. Should there be substantive changes in your research protocol, you will need to submit another application.

We do offer training and orientation sessions for faculty/staff:

<http://fusion.towson.edu/www/signupGeneric/index.cfm?type=OSPR>

Check back to that registration site frequently — we do not have training sessions available right now, but will post additional sessions soon. An announcement on the next available sessions will be posted via *T3 Daily Announcements*.

Regards,

Towson IRB

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