Understanding Stakeholder Communication and Coordination for Children with Behavioral Needs

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ABSTRACT

Behavior management is an important component in classroom settings. If implemented appropriately and consistently, it has been shown to have a positive impact on student behavior. In order for behavior management strategies implemented at school to be effective, they need to be reinforced at home as well. However, home-school collaboration is difficult to achieve. This work uses the diary study methodology to understand the barriers parents face when collaborating with school practitioners about their child's behavior management. Both qualitative and quantitative techniques were used to analyze parent questionnaires. Our preliminary findings show a lack of tailored support and guidance provided to parents from school practitioners, leaving parents unable to effectively manage their child's behaviors at home. We discuss the opportunity to design an information sharing solution that meets the needs of both school practitioners and parents to improve their collaboration, ultimately leading to improved behavioral outcomes for their children.

Author Keywords

Behavior management, special education, collaboration, diary study

CCS Concepts

•**Human-centered computing** → **Human computer interaction (HCI);** *Haptic devices;* User studies; Please use the 2012 Classifiers and see this link to embed them in the text: https://dl.acm.org/ccs/ccs_flat.cfm

INTRODUCTION

Behavior Management is an important component in classroom settings. This involves school practitioners defining clear expectations and rules, providing specific feedback, and continuously adapting responses to behaviors of individual students [15]. Behavior management strategies have been shown to reduce problem behaviors, increases desired on-task and social behavior, and improve long-term outcomes for students [13, 4, 15]. However, in order for behavior management strategies that are implemented in school settings to be effective, they need be reinforced at home [14]. To address this inconsistency in behavior management techniques occurring across home and school settings, we focus on understanding the child's home environment. In particular, how parents are communicating with school practitioners about behavioral concerns and how they are addressing them at home. By gaining this knowledge, we will be able to uncover parents current information needs so that they can be addressed for the long-term benefit of the child.

Consistency in behavior management is especially important for children with behavioral needs. Therefore, this study focuses specifically on children who have documented behavioral needs (i.e. Individualized Education Plan (IEP), 504, etc.). As required by law, schools have a responsibility to identify if a child has any behavioral needs, as well as provide the corresponding appropriate care if one or more is identified [11, 16, 12]. We are focusing on this population because they are at a greater risk for negative long-term outcomes, such as involvement in the criminal justice system, if their behavior is not managed effectively from a young age [10].The effectiveness of the behavioral interventions taking place at school are dependent on the support and adherence of those interventions taking place in the home as well. While it is known that continuity of care and collaboration across home and school settings improves behavioral outcomes for children, it is extremely difficult to achieve [14]. Parents traditionally do not have the same knowledge or resources needed to effectively manage their child's behaviors as school practitioners, leading to inconsistent intervention implementation across environments. While school practitioners may have the tools to effectively manage the child's behavior while they are in school, they often lack the time and resources to train parents on how to do the same [14].

In past studies, I gained an understanding of the challenges associated with home-school collaboration, primarily from the school practitioner's perspective (i.e. teachers, social workers, paraprofessionals, etc.) [6, 5, 7]. However, I did not gain much information about home-school collaboration from the parent/guardian point of view. Thus, the purpose of this study is to obtain more data from the parents' perspective about information sharing needs with their child's school. This will include needs on both a short-term (daily basis), as well as how information can help to inform their child's long-term care needs.

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This work seeks to uncover the parent's perspective on how information about their child's documented behavioral needs are shared with them from school practitioners, how useful that information is to them, and their ideas on how information sharing can be addressed to better improve their child's behavior management at home. The goal of this project is to use the data gathered to design an information sharing solution that meets the needs of both school practitioners and parents to improve their collaboration, ultimately leading to better behavioral outcomes for their children [14].

The aim of this work is to understand the challenges that parents face with respect to their child's behavior at home and what information or resources their child's school may provide to both alleviate those challenges and improve the consistency in the delivery of the child's behavior management interventions across environments. This perspective will help inform the design of an information sharing platform to improve the collaboration and continuity of care for children with behavioral needs across home and school environments:

RQ1: What are the information needs of parents with regard to their child's behavior management?

RQ2: What tools and resources are parents seeking or using to help with their child's behavior management at home?

RQ3: How can the needs of school practitioners and parents be balanced to create an information sharing platform to improve collaboration between the two?

Lastly, this study took place during the COVID-19 pandemic, which caused disruptions such as school closings and parents having to both work from home and home-school their children. The unique context that was created as a result of this pandemic highlighted where there is a lack of information sharing and collaboration regarding children's behavioral management plans between home and school environments. Understanding the challenges experienced by parents during these circumstances can help to inform the types of information that are needed in order to address children's behavioral needs and maintain progress across environments. The diary study approach to this work enabled the capture of data during the difficult and uncertain times of the pandemic since all participation was done remotely.

RELATED WORK

Home and School Collaboration

In this work, we expand on home-school collaboration work conducted by both Marcu et al., and Vannest et al., to capture the parent's perspective of the child's care team.

Previous work in this space focuses on improving child outcomes through the collaboration of care team members on the child's behavioral plans and the delivery of their interventions [14]. Vannest et al., also defines home-school collaboration that involves parents in three ways: *reinforcement planning, reinforcement implementation, and administration of feedback*[14]. However, in order to have a positive effect on their child's behavior, parents need to be involved in all three stages. With this definition in mind, Vannest et al., created a Daily Behavior Report Card (DBRC) with the goal of "increasing the quality of contact between home and school" by documenting student behavior and providing parents with access to reinforcers at home [14]. The creation of the DBRC improved student behavioral outcomes when parents were involved, proving that parent collaboration with school practitioners plays an essential role in the child's behavioral outcomes. This study also shows that information sharing platforms, such as the DBRC, can help improve collaboration across home and school environments.

Marcu et al., built on work by Vannest et al., particularly elaborating on that notion that "home collaboration is often difficult to achieve because of uneven parent involvement and the time required" by school staff to train parents [14]. Marcu et al's., binational study found that "policies, processes, and tools for documenting behaviors in schools are implemented without significant consideration toward exchanging information with parents" [6]. This lack of adequate sharing practices from school practitioners left parents without the proper information to provide their child with appropriate behavioral feedback. However, this study acknowledges that they interviewed only a few very engaged parents, indicating that a larger and more diverse sample of parents could provide further insights.

This study extends both Marcu et al., and Vannest et al's., work by recruiting a much larger population of parents, both geographically and economically, to gain more information on the current state of their collaboration with their child's school. While in school, children with documented behavioral needs are provided professional support and reinforcement to improve their behavior management. However, that structure typically ends once they go home, leaving parents without guidance and the children without consistent behavioral expectations or feedback. This study seeks to dissolve the gap between these environments by learning from parents what information needs exist and how they can be addressed. This knowledge will help to provide consistency in behavioral management for their child and can lead to improved long-term behavioral outcomes.

METHODS

This qualitative study used both a diary study and follow-up interviews to gain insights regarding collaboration about children's behavioral interventions. The first phase involved a feedback-based diary study that lasted six-weeks. During this phase, parents of children with documented behavioral needs answered a questionnaire two times per week. This data was used to gain an understanding of their child's behavioral needs at home, the types of behavioral information currently being exchanged between them and their child's school, and what they are doing with that information.

Similar to past literature, we conducted the diary study in two phases, both feedback and elicitation methodologies. Following the conclusion of the six-week feedback diary study, we invited 1/3 of the participants to reflect on the data they provided by partaking in a one hour semi-structured elicitation interview with of the two study team members. Information gained from the feedback portion of the study will be used as prompts for the elicitation interviews. The purpose of the interviews is to ask more detailed questions about the data

parents provided in their diary entries, regarding their collaboration with their child's school. Both forms of the diary study methodology, feedback and elicitation are used to improve the accuracy and quality of our data [2].

Diary Study

The diary study methodology best fit our study aims because it allows for the understanding of participant behavior in real environments without any potential negative effects, such as observer bias or observer effect from the presence of a researcher [2, 9]. More specifically, the feedback style of the diary study methodology is being used for the six-week phase of this project with all participants. In this phase, individuals are provided with a questionnaire to fill-out about specific events. For this study, events refer to the completion of 2-3 school days. The feedback form of a diary study also fit this work due to its scalability, since our recruitment goal is 40-70 participants [2]. In studying the use of diary studies in research, Carter et al., found that "the best approach to feedback studies may be to combine media capture with structured, question-and-answer based annotations" [2]. Based on this, we revised our original questionnaire to include a place for participants to send us relevant media captured throughout their day. The diary study questions were also revised prior to the start of the study to allow us to capture data relevant to the COVID-19 pandemic as well. This included adding questions that touched on the types of online support and activities both the parent and child were partaking in to aid in behavior management.

Feedback Diary Study

Piloting

Each questionnaire in the study (screener survey, demographics survey, diary study questions) were piloted by three members of the study team, a consulting survey expert, and two research colleagues who are parents of children with documented behavioral needs. Rapid iterations were made based on their feedback during the planning stage of this study.

Study Design and Protocol

The diary study is designed for remote participation. Recruitment for this study occurred using three modes: word of mouth, social media (Facebook, Reddit and Nextdoor), and through the University of Michigan's UM Health Research website. A screener survey was created using Qualtrics, which was linked in a recruitment message and posted to each platform. For a participant to qualify for the study, they need to meet all of the following inclusion criteria:

- Parent or guardian of a child with documented behavioral needs (IEP, 504, etc.)
- Parent or guardian is 18 years or older
- Child with documented behavioral needs is in 8th grade or less (pre-k)
- Parent or guardian is comfortable writing and speaking in English
- Parent or guardian has access to the internet or text messaging for 10 minutes per week for six weeks

Both the demographics survey and diary study questionnaire were also created using Qualtrics. A team email address and Google Voice phone number were created specifically for this study.

Attrition is a problem researchers commonly face in diary studies, especially feedback-based ones [2, 9]. This is because diary studies are commonly based on participants stopping what they are doing to answer a questionnaire immediately after an event. Multiple steps were taken in this study to help reduce attrition rates. First, in the demographics survey, participants are given the ability to choose which two days of the week (Monday-Friday) they want to receive the questionnaire link. This way, participants are able to pick which two days work best with their schedules. Second, When participants take the demographics survey, they are given the ability to choose how they want to receive the questionnaire, either by email, text message, phone call. This decision was made because "feedback studies using a medium more convenient for participants...may yield higher use rates" [2]. Thirdly, participants who qualify for the study based on their screener survey responses, receive a personally addressed email invitation to join the study. Lastly, participants are being compensated based on the number of diary study questionnaires they complete. This per-entry compensation approach is used to help incentivize participants to complete as many entries as possible. Participants are given $ 2 for each entry they complete, with a total potential earning of $ 24 if they complete all twelve questionnaires in the study.

Participants who qualify for the study are sent a link to an electronic consent form and demographics survey. However, some participants indicated concerns about having reliable internet connectivity for the duration of six-week study, as well as having more than one child with a documented behavioral needs. These individuals were emailed to share with us their internet concerns in order for our team to help address them so they could still participate. Those with multiple children were emailed to see if they wanted to participate with both or one child, letting them know that they would only be compensated for one, regardless of their decision. All participants with multiple children who qualified decided to participate with both, so adjustments to the demographics survey and diary study questionnaire were made to accommodate these individuals.

Those who consented were then sent the link to the diary study questionnaire two days per week for six weeks. Based on conversations among research team members and the two research colleagues who are parents of children with documented behavioral needs, it was decided the diary study questionnaire would be sent to participants at 3pm. The justification for this was this is the average time that school ends and is before dinner time. Participants who did not fill out the diary study questionnaire within 24 hours of receiving the link were sent a brief reminder message from our team to complete it. Participants had until the delivery of the next survey link to complete the previous one in order to receive compensation for it.

A large spreadsheet was created to track all participants. Separate sheets were created to track participants who fell into the following categories: participants who qualified, participants

who did not qualify, participants who consented, and participants who qualified but needed to be sent a reminder to fill out the consent form. For those who consented, sheets were added for each day of the week (Monday-Friday) and participants were placed into two of those days based on their indicated preference. Consented individuals were divided between two research team members for easier participant management.

During the deployment of the feedback portion of the diary study, responses and entry activity were monitored closely by the study team. We noticed that some of the questions in our questionnaire were confusing. One example of this is the question *"is your child's school currently open?"*, our team was interested in learning if the participant's child was physically attending school or not. However, some participants were responding 'yes' if their child was watching pre-recorded lectures online or completing online work their teacher was sending. Since this question was the main one used to branch participants to a subset of questions, we adjusted it to say *'is your child physically attending school?'*. Adjustments to questions were made periodically during the first two weeks of deployment based on participant's entry results.

ANALYSIS PLAN

To date, 116 screener surveys have been completed, of which 78 respondents met inclusion criteria for participation in the study. Of those, 59 participants ultimately enrolled in the study.

Due to the high volume of data that this study is generating, an initial analysis is being conducted as the information is coming in from participants. The qualitative method of memoing is being used to help examine the raw data coming between team members [1, 8]. To do this, myself and one member of the study team have divided the participants in half and have begun writing down our own notes based on the diary entries. Along with facts taken directly from the data, we have also included our own thoughts and reactions about the information coming in. This method has been allowing me to flag important, inconsistent or surprising information, and to begin to identify relationships among the data. It is also providing the team with an easy way to keep up to date on data from each other's participants.

Following the completion of the six week diary study, a more thorough qualitative and quantitative analysis of the data will be conducted using thematic analysis techniques and through the help of a consulting quantitative expert [3].

During the qualitative analysis phase, thematic analysis techniques will be used to find themes among the large set of data generated from the free response questions included in the diary study questionnaires.

Through the help of a consulting expert, the quantitative data generated across the demographics survey and diary study questionnaires will be analyzed using SPSS software. Correlations between parent reported income and location of the child's school will be examined, along with the services available in that area. Additionally, data about child diagnosis and parent diagnosis will be looked at to see what connections can be drawn between the two. Lastly, socioeconomic status will be compared to the number of internet connected devices parents report having in their home for the child to use to connect to both school and therapeutic resources.

All analysis techniques used in this study were adapted to take place remotely.

PRELIMINARY FINDINGS

Based on the preliminary analysis being conducted through memoing, preliminary findings related to the first two research questions have come up, along with three findings that were surprising to me. There are three preliminary finding that have come out of memoing that are related to *RQ1: what are the information needs of parents with regard to their child's behavior management?*. First, there is a general lack of tailored support and communication from school practitioners being provided to parents. Many parents have reported receiving blanket statement messages that seem too general to be applicable to their child. Second, there has been "no structure, guidance, or plan" provided to parents, leaving them feeling stressed and helpless. The lack of an actionable plan or guidelines provided to parents from their child school has left them with no idea how to proceed with both learning and behavior management. Lastly, parents are struggling to adapt the educational material provided by school practitioners to meet their child's specific learning needs. As non-trained teachers or therapists, parents do not know techniques or best practices to help their child learn in the way that is best for them.

Based on *RQ2: what tools and resources are parents seeking or using to help with their child's behavior management at home?*, three findings came out of the preliminary analysis. First, some parents are struggling to adapt the reinforcers they are using with their children since the "rewards that were in place are no longer effective". For example, one parent talked about using Oreo's as a last resort to get her child to do schoolwork. Second, parents are turning to online advice forums, especially Facebook groups to seek support and "not feel so alone" during this challenging time. Along with the children being out of their routine, parents are also feeling lost and helpless and are looking for support. Lastly, many parents are using online games to occupy, teach, and reward their kids. Technology keeps kids engaged and also takes the pressure off the parents to do the teaching. It also allows the parents to get some of their own work done since many of them are also trying to work from home.

Additionally, three surprising findings came out of my initial analysis of the diary study data. First, parents who receive the diary study questionnaire via text have been more responsive than those who receive it via email. So far, the response rate for email messages was 82%, while the response rate for text message delivery was at 94%. Second, some parents are reporting that their child is less stressed now that school is closed, but the parents are the ones who are feeling overwhelmed and stressed out. For example, one mother feels like her son being home for this extended period of time is an opportunity for her to change her child's negative perceptions of school, and to get him ready to transition to a new school, the middle school next year. Third, one participant's school provided her with over 200 hours of homeschooling training prior to her

child's school closing. While this is a private school, it is still surprising that the school had time to provide this many hours of training to parents in preparation to the school being closed.

NEXT STEPS

Elicitation Interviews

Following the completion of the six week feedback diary study, and based on an analysis of the data gathered from the feedback portion of the diary study, about one-third of the participants will be invited to take part in a remote semi-structured interview about their self-reported data entries.

The goal of these interviews is to dive deeper into the participant's diary study responses and allow me to probe further about certain topics or instances they reported. For example, I would like to learn more about the participant who received 200 hours of homeschooling training from her child's school. Participants will also be asked questions about how they would ideally like to receive information from their child's school practitioners about their child's behaviors, as well as have the opportunity to get more creative and exploratory with their response than the diary study questionnaire allowed. The combination of the data gained from the diary study questionnaires and the information learned in the interviews will help to improve the accuracy and quality of the data gathered, as well as inform my third research question: *how can the needs of school practitioners and parents be balanced to create an information sharing platform to improve collaboration between the two?* [2]. Answering that question has the potential to lead to more positive behavioral outcomes for their children.

LIMITATIONS AND FUTURE WORK

The majority of our participants did not fill-out the diary study questionnaire when they received it. This led to participants either forgetting to complete it all together, or filling it out right before the next one was due. While participant schedules and varying levels of attrition were thought of during the planning phase, having the questionnaires sent out to the majority of participants two days apart from each other may be rethought when conducting this study in the future. Providing the participants with longer periods of time between questionnaires may lead to increased responses or less repetition in the data.

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