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Using Structured Work Task Systems to Foster Generalized Task Management and Independence in Kindergarten and First Grade Students with Autism Spectrum Disorders.

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ABSTRACT

Fostering student independence is a common theme in special education classrooms across the United States, and risen to the forefront of Autism programming with curriculum development and program structure in recent years. Educators use a variety of tools such as visual schedules, predictable routines and structured work task systems. Structured work task systems provide a predictable pattern or schedule that students can use either independently or with assistance from an adult to complete work tasks throughout their school day. These structured work task systems may vary in appearance from student to student, classroom to classroom, and school to school depending on the unique needs of the child using them. The study author posed the question, "Does consistent implementation of a structured work task system in a small group, special education environment lead to greater student independence in the large group, general education environment?"

For the purpose of this study, the study author chose to focus solely on the use of structured work task systems in the daily routine of Kindergarten and first grade students who had been identified as having an Autism Spectrum Disorder. The intervention, the structured work task system, was consistently implemented (taught) in the small group, special education setting and was then brought into the large group, general education setting, to be implemented in hopes of generalizing student independence across school settings. The data collection methodology was designed to be objective in nature in that all data collected was strictly observable. The study results demonstrate that participants exhibited a slight decrease in the number of verbal prompts needed in the new environment by the conclusion of the study. In regard to visual prompts, both study participants demonstrated some degree of inconsistency as the number of visual prompts varied greatly.

Key Words: structured work task systems, Autism Spectrum Disorders, generalized skill, student independence, work task visuals

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INTRODUCTION

Introduction

As a professional in the field of education, one of the core areas that I choose to focus on as I practice my craft is to study ways that I can foster greater academic and functional independence within each of my students. Often, I find that parents and teachers from all walks of life have the common goal of further developing their child or student's level of independence. For the students in my own classroom, a Kindergarten to fourth grade special education classroom made up of students with Autism Spectrum Disorders (ASD), this is one of the key skills that my team of parents, specialists, paraprofessionals all focus on when creating functional and educational programming for our students. One thing that we have found some success with is implementing structured work task systems when working with our students. Structured work task systems are "a systematic means of presenting information that is received and understood by the individual (Nebraska Autism Spectrum Disorders Network, 2016)." Essentially, these structured systems are visual models used to make work predictable for students with disabilities and to build structured, functional routines into the day of each child. While there are countless versions of structured work task systems to be implemented in the classrooms of today, it is crucial that educators find one that fits the individual functional ability of each student in his or her own classroom. That being said, it is entirely possible that if you have ten different students in your classroom, you could and should be using ten different structured work task systems as they are most successful when individualized in nature. Given consistent implementation of the structured work task system, it is our hope that over time, students are able to develop greater independence (both academic and functional in nature) in

managing their workload while at school which will then in turn, follow them into their homes and out into their community.

Brief Literature Review

Upon conducting further research into structured work task systems and Autism, it was evident that they there is considerable research on structured work task systems and how over time, they lead to greater student independence. Not only can this benefit individuals with Autism and other cognitive disabilities (however, for the purpose of this study I only studied the effects of structured work task systems on students with Autism Spectrum Disorders) educational performance, structured work task systems can also increase independence in the home and workplace settings as well. In a 2006 study conducted by Kara Hume and Sam Odom, the authors studied three students who had been identified as having an Autism Spectrum Disorders (ASD) and the effect that implementing a structured work task system had on their overall independence throughout their school day (Hume & Odom, 2006). The results indicated a direct correlation between the addition of a structured work task system into the child's day and their overall level of independence when completing work tasks (Hume & Odom, 2006).

Further, an additional study conducted in 2009 also provided evidence as to how structured work systems have promoted student independence and engagement in the school setting. "An important goal for all students in the ability to function independently throughout the school day – moving from one location to the next, organizing required materials, completing necessary tasks and applying skills learned in one setting to other settings when appropriate," stated the study authors (Carnahan, et al, 2009). Being that the end goal of this study was to further develop independence in each of my students, structured work task systems are a solid, well studied tool in reaching that goal (Lord & McHee, 2001).

Statement of the Problem

I chose to study the effect that structured work task systems have on student independence as independence and task management are two areas of deficit that I consistently noticed in my classroom. It was my hope that given pre-teaching (both within my classroom and in their early childhood special education classroom) as to how to utilize the structured work task system, modeling and then consistent implementation of the structured work task system, that my students would be able to manage a greater portion of their work in their general education classroom(s) independently.

Purpose of the Study

The purpose of my study was to determine the effect that implementation of a structured work task system in the daily routines of my students would eventually lead to greater independence. I measured independence by observing each study participant's ability to complete a work task, and then move on to the next task on his or her own without needing verbal or visual prompting from a staff member in their general education classroom. Beyond the scope of this study, it is the goal of my team and I to be able to generalize these structured work task systems across settings within the school building in order to foster greater independence in all areas of my student's education.

Research Question

Does consistent implementation of a structured work task system lead in a small group, special education environment lead to generalized student independence in the large group, general education environment?

Definition of Variables:

Variable A: The independent variable was the structured work task system itself, which had already been pre-determined for each student based on present level of independence and functional ability.

Variable B: the dependent variable of this study was the level of independence that each student demonstrated at the end of the study. This varied from student to student as some students are already demonstrated a greater degree of independence in both the small and large group settings.

Significance of the Study

Historically, much of what my teaching position entails is aiding in the process of developing independence within my students. Whether this be through functional living tasks such as toileting, dressing and other Activities of Daily Living (ADLs), or by providing additional academic support to my students, independence plays a massive role in their success across environments. Given the current atmosphere of the world due to the COVID-19 pandemic at the time of study, I was having to consider independence on a much broader scale including independence within the home and how to support this ability level as well. By providing explicit instruction and consistent implementation of a structured work task system into my student's school day, it was my ultimate goal to be able to extend this skill set into their home environment as well.

Research Ethics

Permission and Approval. Prior to conducting this study, I sought permission from Minnesota State University Moorhead's Institutional Review Board (IRB) in order to maintain ethical procedures when conducting a study on human study participants. Further, I also sought

permission from the administration in my school building which is where the study itself ultimately took place.

Informed Consent. After receiving permission from MSUM's IRB and from the administration within my school setting, a letter of informed consent was sent home to the parents of all students in my classroom. This outlined the rights of parents to make decisions for their minor child in regard to the study, as well as detailed the expectations of the study and the information that will be gathered from each of the study participants. Parents were ensured that the privacy of their child would be kept confidential and that student names, images nor video would be taken or documented for the purpose of the study.

Limitations. Limitations of this study did exist, one of which being the relatively small pool of study participants. Typically, I have anywhere between 9 and 11 students on my caseload annually due to the need of each child. As I did not receive consent from the parents of all of my students (I only received signed consent back for two), my participant pool was quite minimal.

A second limitation of the study was that our District had been providing educational services using the Distance Learning and Hybrid Learning model throughout the course of most of the 2020-2021 school year which didn't allow for as consistent teaching of the structured work task systems to my students. Upon return to the full in person learning model, I went into maternity leave myself, thus being unable to monitor the implementation and support provided as my students were learning how to utilize their structured work task system.

Lastly, bias was one of the main limitations when developing my study. I needed to be sure that data collected was done so in the most non-biased way possible. Rather than using observation notes, a simple check sheet was created so that I was solely measuring whether or

not the study participants were able to utilize their structured work task system to independently move through a series of work tasks in their general education classroom.

Conclusions

I used the information within this chapter to outline the purpose behind my study. As a special education teacher working with the population of students that I do, it provided further connection between structured work task systems and independence within my students. Further, it provided an opportunity to determine a concrete implementation strategy of a tool that we already used within our daily classroom routines both within my own classroom but also in many other special education classrooms in my District. In addition to this, it also gave my District solid numbers to measure student growth over a set period of time using structured work task systems that are specific to our school and student population.

CHAPTER TWO

LITERATURE REVIEW

Introduction

As a special education teacher who works primarily with students who have been identified as having an Autism Spectrum Disorders (ASD), the study author worked primarily on functional skills that promoted independence for each unique learner. Ultimately, the goal of this research proposal was to determine the positive effect on the consistent implementation of structured work task systems across environments for the students participating in the study and the relationship these systems have on student independence. To conclude this study, the author measured the direct correlation between structured work task systems and independence throughout the school setting.

Body of the Review

Context The articles discussed herein explain the purpose of structured work task systems and student independence, focusing largely on students with Autism Spectrum Disorders and other functional disabilities. As mentioned previously, the author of this study discussed within this review of literature is a special education teacher of students with Autism Spectrum Disorders (ASD) in at the elementary level that serves students in grades Kindergarten through fourth grade. A requirement of special education programming for students with an ASD is that students receive programming in functional skills as they relate to repetitive behavior(s) – meaning that students often fall into strict routines both in their academic and home lives.

Structured work task systems can take on many different appearances, however; the core purpose remains the same: they should increase student independence both academically and functionally. They are to allow students to follow routines to a higher degree of independence by

allowing these students to manage tasks by making them more predictable. Structured work task systems should be individualized in nature, meaning that each student should use the system that best meets their unique needs and functional ability. You may view an example of the structured work task system that each student will begin using in Appendix A which happens to be the same for both students participating in this study.

When conducting research on this topic, a number of key words were used including, but not limited to: structured work task systems, work task visuals, Autism Spectrum Disorders, student independence, and visual aids. While all of these terms are different, they are all interconnected in much the same way as the research topic. Structured work task systems are work task visuals or visual aids that foster greater student independence for individuals with Autism Spectrum Disorders (ASD). This topic is relatively well researched as there was a large pool information on each term independent of one another, which allowed for my research to make connections within the confines of the research period.

Body of the Review

Structured Work Task Systems & Student Independence

In Hume & Odom (2006), the authors studied three students on the Autism spectrum (ages 6, 7 and 20) who all were reported to experience difficulty with task independence and who were simultaneously familiar with visual schedules but not structured work task systems. Baseline data where no work system was utilized, and followed it up with the consistent implementation of a structured work task system (Hume & Odom, 2006). All of the study participants are familiar with work task systems, as it is reported that each student has utilized a visual schedule prior to participation in the study – however; are brand new to structured work task systems. The early stages of the study methods involve introducing a structured work task

system to each student in the study. Results of this study showed a direct correlation between the addition of a structured work task system into a student's day and an increase in their overall independence when completing work tasks (whether functional or academic in nature). For the purpose of this study, the structured work task system will be utilized to complete a variety of different tasks.

Beyond the 2006 study Hume et al. (2013), produced a study that determined the effectiveness of work task systems that are utilized across learning environments and the effect they have on student independence (Hume, et al, 2013). The study authors sought a way to increase independence of students with Autism Spectrum Disorders (ASD). The purpose of this study was to assess "the impact of an individual work system on the accuracy of task completion and level of adult prompting across educational setting," (Hume, et al, 2013). Ideally, the tools used within a special education classroom are first utilized in the smaller, more individualized setting of the resource room and will eventually be pushed out for use in the large group general education classroom. The multi-purpose aspect and generalizability of a structured work task system to be used to manage any number of tasks will allow for a generalized sense of independence for students with ASD in many areas of the school, home and community. During this study, the author only studied the effectiveness and generalized use of structured work task systems across school settings.

In Mechling & Savdige (2010), the authors discuss how they provided various self-managed visual supports for students with Autism Spectrum Disorders. They taught, implemented and modeled the use of a number of self-management strategies in the form of structured work task systems that helped students complete multi-tiered activities, sequencing activities as well as providing structured support during transition periods (Mechling & Savidge,

2010). Over time, students became increasingly independent while working through each of the listed activities (Mechling & Savidge, 2010). Due to the vast variety of independence levels that are present in many special education classrooms at this time, this article was particularly helpful in providing a starting point for students who are able to function at a high degree with some (even limited) visual supports. Many teachers want to find a way to have their students provide these visual cues for themselves, rather than needing a paraprofessional or the teacher themselves to provide the verbal cue to move to the next activity thus, developing greater ownership of tasks completed and independence through the process of task completion.

A large part of the daily routine of teaching students with Autism Spectrum Disorders (ASD) is designing pre-vocational tasks or life skill tasks for students to complete throughout their school day. Each day teachers and paraprofessionals have to adapt their schedule to fit varying service schedules, behaviors, toileting schedules, etc. and that is often an ongoing process rather than a one size fits all if student independence is not increasing. Making the determination of what comes next is difficult for many students, therefore creating a means of helping students foresee what their next job is helps move them to a greater level of independence throughout their school day. In an article published by the European Journal of Special Needs Education, a study was completed in a high school self-contained classroom with mild to moderately cognitively impaired students (Ashburner, et. al. 2018). In order to reach their goal of independent task transitioning, students were given picture schedule books with the day's tasks, and this is a form of a structured work task system. Pre-teaching of the relationship between each task and the picture(s) in the schedule book was completed, followed by practice and then eventually implementation in real time (Ashburner, et. al. 2018). It is important to note

that pre-teaching is a crucial part to developing a successful structured work task system as the student will require direct instruction in this area, this is no different in regard to this study.

Working toward independence in the classroom or school setting has been at the forefront of this discussion. Not only does special education programming aim to help support students while they're in the building, but also to help create support systems for students in their homes as well. At home routines, such as waking up in the morning and getting ready for school is a common topic discussed with parents, therefore establishing a need to find a way to support children during that high stress time of day as well. In an article in Exceptionality (an Academic Journal) there was a study completed where planned supports were implemented in low income homes of African American students with Autism Spectrum Disorders. Visual supports were made for students that required both parent participation and independent task management skills. Each plan was individualized to fit each student's independence level and functional ability (Barton, et. al, 2018). When developing tis study, I was particularly aware of the unique functional ability of each of the students and should plan a structured work task system that is neither too easy or too difficult for them to utilize on their own.

Further solidifying the importance of student independence, students should also be able to practice independence when "moving from one location to the next, organizing required materials, completing necessary tasks and applying skills learned in one setting to other settings when appropriate," states the authors of an article titled *Using Structured Work Systems to Promote Independence and Engagement for Students With Autism Spectrum Disorders* (Carnahan, et al, 2009). All of the students in my the classroom this study was conducted in are working on generalizing independence (to their highest unique ability) across environments in the school building. The ultimate "goal" of their special education programming at this time is to

make them more independent members of their learning environment, which will then give them access to higher level learning opportunities. The authors of this study, Christi Carnahan, Kara Hume, Laura Clarke and Christy Borders studied the effect that structured work task systems had on the independence and overall engagement of students with Autism Spectrum Disorders in the school setting (Carnahan, et al, 2009). The authors cited several sources that further stressed the importance of arming students with Autism with the necessary tools they need to be independent learners in their environment, including a study from the text titled *Educating Children with Autism b*y Catherine Lord and James P. McGee (Lord & McGee, 2001).

Lord and McGee (2001) also discuss the many important characteristics of special education programming for students with Autism and the crucial aspects of interventions for students on the Autism Spectrum. In the recent history of the American education system, the "demand for autism-specific services has drawn attention to growing numbers of children with the educational categorization of Autism" (p. 41). At this time, science has yet to be able to provide a definitive answer as to how children develop Autism and the factors that may cause the disability.

Autism, at it's core, is described as being a "neurodevelopmental disorder that affect how an individual processes information and interprets the world (Minnesota Department of Education, 2017). Further, Autism can be characterized by a vast number of traits such as social interaction, communication, strict patterns of behavior or interests on a scale of severity ranging from mild to severe (Minnesota Department of Education, 2017). Due to the fact that Autism occurs on a spectrum scale, programming is determined on a very unique, individual basis within the educational setting.

Research Question

Does consistent implementation of structured work task systems lead to greater independence across learning environments?

Conclusion

In conclusion, this review of literature pulled information from sources that also studied structured work task systems, student independence and the relationship between the two. As the author of my own study, I will use the background knowledge I have gained through this literature review process in addition to the data collected throughout the course of my own study to determine the effect that consistent implementation of structured work task systems has on the independence students in my own classroom.

CHAPTER THREE

METHODS

Introduction

For the purpose of this study, I studied the relationship between structured work task systems and student independence in students with Autism Spectrum Disorders (ASD). Structured work task systems are visual task management aids that help students to determine what comes next when completing work tasks of any kind, whether that be functional academics, functional living tasks, fine motor tasks, etc. Structured work task systems are frequently used in special education classrooms, and have been proven to benefit students with ASD. I have been using structured work task systems in my classroom for the past two years and feel confident now in the types of work task systems that are currently being used in my classroom. In order to better understand the functional benefit (student independence) that I seek for my students when implementing a structured work task system, I chose to study the effects in my own classroom in order to further understand how I can better serve my students moving forward.

Research Question

Does consistent implementation of a structured work task system lead in a small group, special education environment lead to generalized student independence in the large group, general education environment?

Research Design

I utilized the single-subject design for my research as it pertains to this study. A single-subject research design can be defined as "using repeated measurements to really understand an individual's variability, so that we can use our understanding of that variability to determine what the effects of our treatment are (Wambaugh, 2014)." Essentially, what I did as the research

author was implemented something new with my students at the beginning of the school year (structured work task system), and then determined the overall effect it had on the independence of my students moving from the special education classroom into the general education classroom. Another important piece of information to note is that the study participants (my students) had been assigned to my caseload based off of their special education disability category of Autism Spectrum Disorders (ASD) and are therefore not randomly assigned. The combination of these factors are what led me to determine that the single-subject design is what was most appropriate for my study.

Setting. The setting was my elementary (K-4) special education classroom where I served solely student who had met special education eligibility criteria under the disability category of Autism Spectrum Disorders (ASD). My students fall well below grade level in all areas of academic, social and functional skills and therefore receive specialized programming from myself and a number of related service providers including: Occupational Therapy (OT), Physical Therapy (PT), Speech/Language Services, Social Communication and Developmentally Adapted Physical Education (DAPE). These service providers see my students within the confines of my classroom and therefore are familiar with the tools in place to help our students be more independent in their daily tasks, one of which being their structured work task system.

My school would be described as being in a rural area but is incredibly diverse in that over 60% of our student population is made up of a number of different minority groups – many of which are newcomers to the United States. While the community I teach in only has a documented population of around 12,000 it is suspected that there are at least another 2,000-3,000 undocumented individuals also living in the community and surrounding rural areas.

Participants

The current makeup of my classroom is twelve students, two girls and ten boys. I have three students who identify as being white/Caucasian, two of which are Lao, and seven of which are Hispanic/Latino. I currently have one first grader, four second graders, three third graders and three fourth graders on my caseload.

Sampling. This sampling is non-random as each student in my classroom is assigned to my caseload based off of a very specific set of needs as well as their educational diagnosis of their disability of Autism Spectrum Disorders (ASD). Each student on my caseload utilized the structured work task system daily in my classroom and received pre-teaching in order to learn how to self-manage the work task system to the best of his or her individual ability for at least one year prior to the 2020-2021 school year.

Instrumentation

To begin the study process, a baseline measure of student independence when completing a rotation of three work tasks followed by ten minutes of a desired task was taken. I measured the number of verbal/visual prompts needed to complete the three work tasks and begin/end the ten minutes of a desired task as well as to begin the next rotation of work tasks daily for a period of five school days. Following this initial baseline measure, students were given further instruction as to how to utilize the structured work task system in their general education classroom over the course of two school weeks (10 days). From there, data was collected bi-weekly (dates chosen at random prior to the beginning of the study) in order to determine whether or not over a 4 week time period, students were able to better manage their work tasks independently.

Data Collection. In order to collect unbiased data, I simply used a check sheet that represents the number of verbal/visual prompts needed during the data collection period. If a verbal/visual prompt was needed, they will received a tally on their data collection sheet for that day. I will then compare the number of checks (or verbal prompts) needed over time to determine progress.

Data Analysis. At the conclusion of my data collection period, I documented data using a line graph that showed the number of verbal/visual prompts needed during each data collection opportunity beginning with my baseline and moving on toward the end of the study. The line graph provides a clear visual as to the trend in necessary verbal/visual prompts that each student needed over time as they became more familiar with their structured work task system and it's use in the general education setting.

Research Question & System Alignment. The table below describes how each piece of my research design model relates to one another.

Research Question	Variables	Design	Instrument	Validity & Reliability	Technique	Source
Does consistent implementation of a structured work task system lead to greater student independence across learning environments?	IV: structured work task system DV: student independence	Single Subject Design	IV: the structured work task system that is being used. DV: data collection sheets (see appendix B)	Myself, the research author, was the sole person collecting data during the study. This is for consistency. Data collection is simple – for each needed verbal/visual prompt to continue working on	Data collection sheet.	Students with ASD. Grades K-4. Approx. Sample Size: 2

				the next piece of work, there was a check marked on the data collection page. Each student was taught how to use the structured work task system in a one on one setting, given the same visual from start to finish.		

Procedures

The study began with baseline data collectionduring the week of May 3, 2021. A baseline measure was collected during the first week of the study on each study participant, and data was collected twice weekly per study participant over the course of the entire study. All data taken was considered when determining overall effect the structured work task system has on generalized student independence.

The first two weeks of the study the primary focus of student instruction was teaching them how to manage their structured work task system in the general education setting. The goal was that over time, each student would develop greater independence with task completion and management of work tasks throughout their school day in their general education classroom. This structured work task system was utilized in my classroom throughout the course of the

entire school year including with all of their related service providers including OT, PT, Speech (SLP), and DAPE.

Ethical Considerations

My overall goal was to provide an opportunity for each of my students to become more independent members of their general education classroom(s) so as to become more independent members of our school community as they grow older. Ensuring their safety and limiting harm as much as possible are part of pushing them to become more independent. One way that my students could experience harm is by pushing them beyond what their functional ability allows for, that is; expecting far greater independence than what they are individually able to achieve. In order to limit this, a specific "goal" level of independence has not been set for each child but rather the need for fewer verbal prompts over time is the goal for all. This will allow for each child to make gains at a rate that is equitable for him or her. My study was approved by the Minnesota State University Moorhead IRB Board prior to beginning the study.

Conclusion

Throughout this chapter I have explained how I implemented my study from data collection measures, to procedure and data analysis. One data collection measure (a data collection sheet, see Appendix B) was utilized to collect data in regard to each study participant where I solely measured the number of verbal prompts needed to complete a work task rotation. The goal for my students was that over the eight-week period, they would need fewer verbal prompts than they needed during their baseline measure. The next chapter will outline my study findings in detail.

CHAPTER FOUR

RESULTS

Purpose of the Study

Skill generalization and task management are two core skill deficits often presented in students with Autism Spectrum Disorders. The purpose of this study was to determine that if consistent implementation of a structured work task system would lead to greater student independence in regard to task management in the general education setting. Ultimately, the goal was for the study participants to increase their ability to complete a work task and move on to the next work task needing fewer prompts as the study progressed, thus generalizing the skill of using a structured work task system from one setting to another.

Data Collection Methodology

Prior to launching the study, baseline data were taken that measured the number of prompts required for each study participant to complete the sequence: a series of three work tasks, begin and end ten minutes of their desired reward time, and begin the next rotation of tasks using a structured work task system in their general education classroom. The study participants were familiar with the structured work task system in use as they have been using this visual in the special education classroom for a period of approximately one school year. Following the baseline data measurement the students were taught how to use their structured work task system in their general education classroom over the course of two consecutive weeks of school (the equivalent of 10 calendar days). Data collection for the study itself was taken over a period of 4 weeks, during the Extended School Year (ESY) program where I measured the number of prompts needed to complete the same series of tasks state previously in this section.

In regard to the work tasks themselves, all are familiar activities that the student(s) use on a daily basis in the special education setting. For the purpose of this study, the intent was to measure skill generalization and not academic mastery therefore it was pertinent that the focus not be on the complexity of the task itself but rather the study participants ability to manage the sequence using the structured work task system. Work tasks used were previously mastered activities used for review, so that study participants were solely challenged with the task of independence rather than the nature of the academic expectation. Activities were compiled based off of Individualized Education Plan (IEP) goals and objectives as well as functional ability. Desired play/reward activities were chosen by the student directly and presented only once they had completed the work sequence. Note that play was never withheld, once each study participant had completed the three tasks (no matter the number of verbal or visual prompts), they were allowed their 10 minutes of desired play time.

The measurement tool I used (see Appendix B), was a dated tally sheet that I used to document the number of verbal/visual prompts needed on each data collection probe. This sheet was completed electronically for both student participants (labeled as Student A and Student B) using a laptop computer. If the students required a verbal prompt, a tally was added to column two. If the student required a visual prompt, a tally was added to column three. There are two sections on each study participants data collection sheet to reflect the two sets of data (baseline and secondary) for organizational purposes.

Does consistent implementation of a structured work task system lead in a small group, special education environment lead to generalized student independence in the large group, general education environment?

The data collected during the four-week data collection period indicated a slight decrease in the number of verbal and visual prompts necessary to complete the sequence of works as

required by the structured work task system. In special education student progress is measured on an individual basis, meaning that the baseline data is compared the progress monitoring data and growth is measured based off where they started vs. present day ability level(s). This pertains to the study in that data for Student A and data for Student B are analyzed in the same way: Student A baseline is compared to Student A secondary data collected and Student B's baseline is compared to Student B's secondary data collected.

Student A. During the baseline data collection period, Student A required an average of 4 verbal prompts per work task sequence and 2 visual prompts. As shown in the table below, the most number of verbal prompts required was 5 and the most visual prompts required was 4 over the course of one work sequence. Student A required as many as 5 verbal prompts and 4 visual prompts, and as few as 4 verbal prompts and 0 visual prompts. Subsequent to collecting baseline data, Student A received two school weeks (10 days non-consecutively due to the weekend) of direct instruction in the participant's general education classroom as to how to utilize the use of the familiar structured work task system in the new setting. Data was not collected during this period.

During the secondary collection period (after the student was given instruction regarding the structured work task system), you will see the results indicated in the "Secondary Data Measurement" section of the table below. On average, Student A required 3-4 verbal prompts and 1-2 visual prompts. Student A required as many as 6 verbal prompts and 3 visual prompts, and as few as 2 verbal prompts and 0 visual prompts.

Table 1. Study Participant A Data Collection Sheet

Date	Number of Verbal Prompts Needed to Complete Tasks (Tally Marks)	Number of Visual Prompts Needed to Complete Tasks (Tally Marks)
Baseline Data Measurements		
05/03/2021	IIII	II
05/04/2021	IIIII	I
05/05/2021	IIII	
05/06/2021	IIII	III
05/07/2021	IIII	IIII
Totals:	21	10
Secondary Data Measurements		
06/07/2021	IIIII	II
06/10/2021	IIIIII	
06/15/2021	IIII	II
06/16/2021	IIII	III
06/23/2021	III	II
06/25/2021	III	II
06/28/2021	II	
06/30/2021	III	III
Totals	30	15

Student B. As demonstrated in the table below, Student B required an average of 5 verbal prompts and 1-2 visual prompts during the baseline data collection period. Student B required as many as 7 verbal prompts and 4 visual prompts, and as few as 4 verbal prompts and 0 visual prompts. In the same fashion as Student A, Student B was given a two week (10 days non-consecutively due to the weekend) instructional period in the general education classroom where Student B received direct instruction as to how to appropriately use the structured work task system with fidelity.

During the secondary data collection period, Student B required as many as 6 verbal prompts and 3 visual prompts, and as few as 2 verbal prompts and 0 visual prompts. On average, Student B required 5 verbal prompts and 1-2 visual prompts during the secondary data collection period. The data collection results for Student B are as listed in the table below.

Table 2. Study Participant B Data Collection Sheet

Date	Number of Verbal Prompts Needed to Complete Tasks (Tally Marks)	Number of Visual Prompts Needed to Complete Tasks (Tally Marks)
Baseline Data Measurements		
05/03/2021	IIIII	III
05/04/2021	IIIIIII	I
05/05/2021	IIIII	
05/06/2021	IIII	IIII
05/07/2021	IIII	
Totals:	25	8
Secondary Data Measurements		
06/07/2021	IIIII	II
06/10/2021	IIIIII	
06/15/2021	IIII	II
06/16/2021	IIII	III
06/23/2021	IIII	II
06/25/2021	II	II
06/28/2021	III	I
06/30/2021	III	I
Totals	43	13

Data Analysis

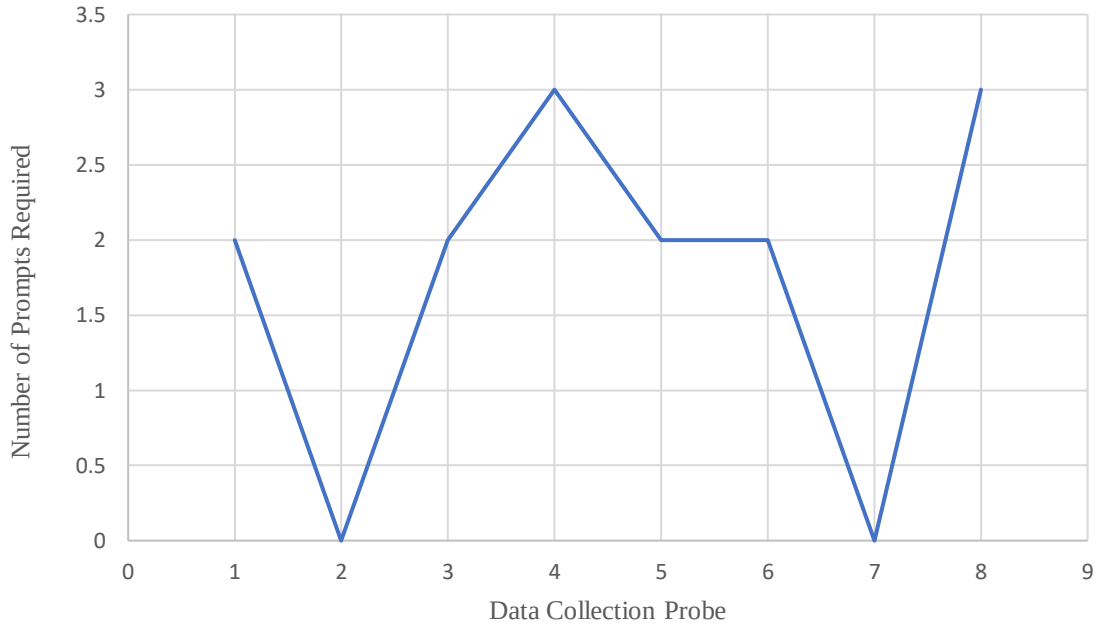
As stated in the data collection section of chapter four of this action research project, special education data are largely analyzed on an individualized basis. Student baseline data are compared to progress monitoring data to measure individual student growth based on a set of individualized needs in accordance to each study participants Individualized Education Plan (IEP) goals and objectives. For the purpose of this action research, I felt most appropriate to analyze data on an individualized basis as well.

Student A Data Analysis. Student A showed a general decline in the average number of verbal prompts at the beginning of the secondary data collection period as compared to the end of the secondary data collection period. According to the research presented by Hume and Odom (2006), it would be expected that over a period of time the degree of independence would

increase over a period of time. In regard to visual prompts, Student A's progress was less consistent as you see in the line graph below. Student A required as many as 3 visual prompts on the final day of the study and as few as 0 visual prompts on days 2 and 7 of the study. This inconsistency was puzzling simply because the research I had done pointed to consistent implementation and support leading to greater independence over time.

Figure 1

Student A Secondary Visual Prompts

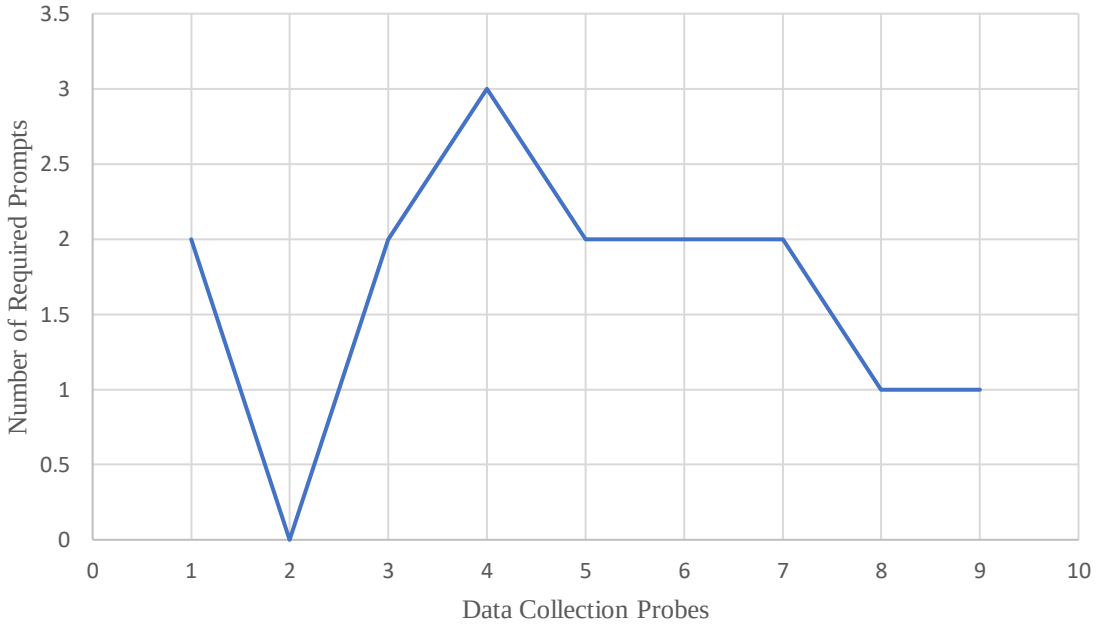


Student A was present for all randomly selected data collection days (pre-selected prior to the beginning of the secondary data collection period) and participated without argument. In retrospect, I would suggest adding a notes section to my data collection chart to track notes regarding the observable behavior(s) presented during the data collection process. Other pertinent information to consider would have been the activities going on in the immediate environment of Student A as distractions were more prevalent during certain days of the study.

Student B. Based off of my experiences working with Student B, I would have expected his ability to independently manage a work sequence using the structured work task system in the general education setting to be superior to that of Student A due to functional level and past skill demonstration. As noted in the table for Student B above, Student B did demonstrate a greater degree of independence when comparing the beginning of the study to the end of the study. Student B's verbal prompts showed a slight decrease over time, while Student B's visual prompts remained relatively consistent as demonstrated in the line graph below.

Figure 2

Student B Secondary Visual Prompts



Student B was also present for all randomly selected data collection probes during the Extended School Year (ESY) secondary data collection period. One thing to note in regard to Student B's data collection period was that the work space in Student B's general education setting was much more communal in that Student B did not have a separate, quiet work space as Student B would typically have when completing independent work. The Hume 2013 study from

the Literature Review in chapter two of this action research further explains that while the intended purpose of structured work task systems is to first be taught in the small group setting and then carried out into various settings, I do find that the surroundings of Student B made focus more difficult for them as I noticed that during the data collection probes Student B appeared to be more distracted.

Conclusion

As the end goal of this action research study was to determine the generalized skill of managing a structured work task system independently from one setting to another, I am confident that the data collected represents this assertion. Data collected was done so in an objective, observable manner that left little to no opportunity for subjective observations of study participant ability. In general, data represent a slight decrease in the number of verbal prompts required for students to complete a work sequence in the general education setting, while visual prompts needed were inconsistent across the data collection period.

CHAPTER FIVE

IMPLICATIONS FOR PRACTICE

Action Plan

Since the completion of my study, I have taken time to reflect upon the process of development and implementation of my action research project. I have spent the past three years serving students with skill deficits in task management and transition between activities among other functional skills. I have been on the hunt, per se, to find ways to bridge these gaps so that my students can continue to receive educational services in the least restrictive environment (LRE). By seeking out further opportunities to plan, instruct upon, and implement various supports for my students I can continue to work toward this goal.

Over the course of my three years spent in the classroom, I have often found that I have difficulty breaking down long term projects into smaller more attainable portions while also keeping my long term goal in mind. When planning for my action research I was forced to be intentional every step of the way as I analyzed whether or not the steps I took to carry out my student directly correlated with the intended study outcome. As I progressed through the planning period, I found that I needed to rewrite my research question because the way it was written didn't reflect my end goal which was skill generalization. In the past, this would have frustrated me enough to quit the process altogether and go back to what was familiar. However; due to the nature of this project I stuck it out and am pleased with my ability to go head first into a process I was not originally comfortable with.

Toward the end of the 2020-2021 school year, I accepted a position as the Special Education Coordinator for my district through the Southwest West Central Service Cooperative and will also serve as the Autism licensed individual on our Special Education Assessment Team

(SEAT). While we are fortunate to have a SEAT team, I have had little opportunity to participate in special education assessments, and had some nerves regarding completing student observations for their initial and annual evaluations. Because of the complexity and focus that this study required, I feel confident in doing further observations of students as I now understand how to be objective with observations and collect data with the intended goal or objective in mind.

The impact that this study will have on future students is that I now have a more holistic understanding of using data to measure the overall effectiveness of my planned interventions. I also know how to tailor a long term plan (such as an IEP) to the intended goal of furthering student success and skill mastery in determined areas and make a plan of action in order to pursue these goals. This also impacts parents as parents have long term investment in their child's ability to succeed as whole adults beyond the classroom and into the community and not solely as students in elementary school.

Plan for Sharing

In my new position on the SEAT team, I will have the opportunity to help my district implement a new curriculum geared toward meeting the needs specifically of students with Autism Spectrum Disorders (ASD): the STAR program. The STAR program focuses a great deal on finding means to support students across various settings using visuals such as structured work task systems. Because of the strong correlation between this action research project and the core interventions included as part of the STAR program I am able to speak to actual data as it relates to our very own students, classroom(s) and district itself.

Further, I intent to join the New Leaders cohort as part of my membership to Minnesota Administrators for Special Education (MASE). This cohort allows for new special education

administrators to gather, network and share ideas and experiences as a means of growing as new leaders in the profession. I recognize the opportunity to share the benefits of action research to our schools as I can recall numerous experiences learning for my colleagues and superiors in the profession as they have shared their own growing opportunities in the field.

In conclusion, I look forward to continuing to share this action research not only with my current colleagues but also my colleagues of the future. The current state of education and the teacher shortage crisis we are facing requires those of us in the profession to foster a love for learning, teaching and education in the next generation of educational professionals. There is no better time to implement the “grow your own” approach by actively pursuing opportunities to mentor and guide young adults as they enter the profession.

REFERENCES

Ashburner, J., Costley, D., Keen, D., Macdonald, L., Trembath, D. (2018) The use of visual schedules and work systems to increase the on-task behavior of students on the autism spectrum in mainstream classrooms. *Journal of Research in Special Education Needs, 18,* 254-266.

Barton, E. E., Goldman, S. E., Glover, C.A., Lloyd, B. P., Mello, M. P., (2018) Effects of Parent Implemented Visual Schedule Routines for African American Children with ASD in Low-Income Home Settings. *Exceptionality*, *26,* 162-175.

Hume, Kara, Odom, Sam. (October 27, 2006). Effects of an Individual Work System on the Independent Functioning of Students with Autism. *Journal of Autism and Developmental Disorders.* (37), 1166-1180. Doi: 10.1007/s10803-006-0260-5

Hume, Kara, Plavnick, Joshua, Odom, L. Samuel. (February 3, 2012). Promoting Task Accuracy and Independence in Students with Autism Across Educational Setting Through the Use of Individual Work Systems. *Journal of Autism and Developmental Disorders.* (42), 2084-2099. doi: 10.1007/s10803-012-1457-4

Lord, C. & McGee, J. P. (2001). *Educating Children with Autism*. Washington, DC. National Academy Press.

Michling, L. C., Savidge, E. J. (2010) Using a Personal Digital Assistant to Increase Completion of Novel Tasks and Independent Transitioning by Students with Autism Spectrum Disorder. *Journal of Autism & Developmental Disorders, 41,* 687-704

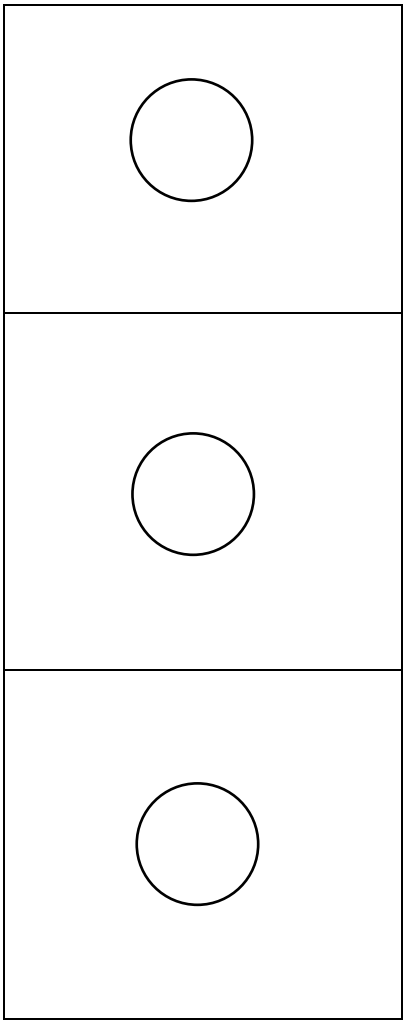
Minnesota Department of Education. (2017). *Autism Spectrum Disorders.* Minnesota Department of Education. https://education.mn.gov/MDE/dse/sped/cat/aut/index.htm

Wambaugh, Julie. (December 2014). *Single-Subject Experimental Design: An Overview.*

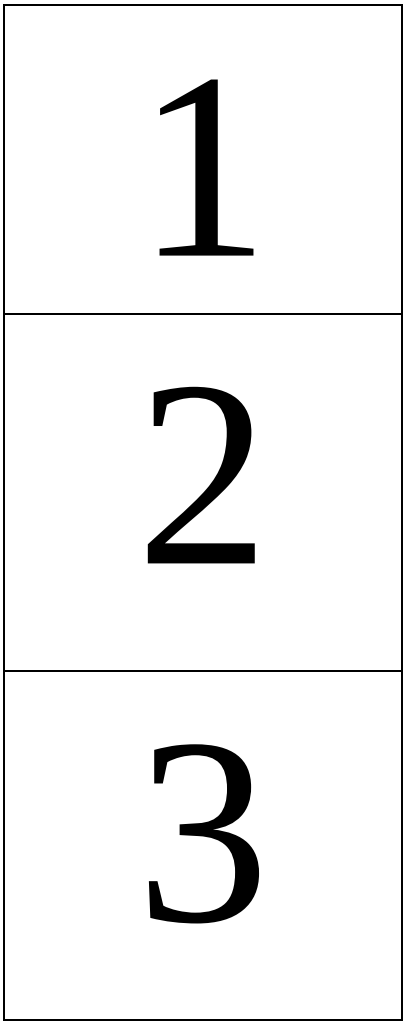
Retrieved from https://academy.pubs.asha.org/2014/12/single-subject-experimental-design-an-overview/

APPENDIX A

Example of the Introductory Structured Work Task Visual



This piece has a piece of Velcro (as shown by the small circles in the middle of each (square), where the student add the numbered 1-3 pieces as they complete each piece of work.



Each of these three squares is cut apart and has a piece of Velcro attached to the back. They are then put above each piece of work in the structured work task system (for this system, there would be 3 pieces of work). Once the work is complete, the child adds the task number to the piece on the right to demonstrate that each work is complete.

APPENDIX B

Sample Data Collection Sheet

Date	Number of Verbal Prompts Needed to Complete Tasks (Tally Marks)	Number of Visual Prompts Needed to Complete Tasks (Tally Marks)

APPENDIX C

Institutional Review Board

MINNESOTA STATE UNIVERSITY MOORHEAD

DATE:	July 6, 2021
TO:	Ximena Suarez-Sousa, Principal Investigator McKenzie Helgeson, Co-Investigator
FROM:	Lisa Karch, Chair Minnesota State University Moorhead IRB
ACTION:	**DETERMINATION OF EXEMPT STATUS**
PROJECT TITLE:	[1767442-1] Using Structured Work Task Systems to Foster Generalized Task Management and Independence in Kindergarten and First Grade Students with Autism Spectrum Disorders
SUBMISSION TYPE:	New Project
DECISION DATE:	July 6, 2021

Thank you for your submission of New Project materials for this project. The Minnesota State University Moorhead IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations under 45 CFR 46.104.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the Minnesota State University Moorhead IRB. Please include your project title and reference number in all correspondence with this committee.

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Minnesota State University Moorhead's records.