

Reducing Time Spent in a Classroom Bathroom with Preschool Student with Autism: Effects of Timing and Consequences

Janie Rasmussen-Pryor¹, T. F. McLaughlin², K. Mark Derby³

Department of Special Education

Gonzaga University

Melina Robison⁴

Spokane Public Schools

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Currently a general education teacher in Spokane Public Schools. Requests for reprints should be addressed to Janie Rasmussen, Browne Elementary School, North 200 Bernard, Spokane, WA 99202 or via e-mail at janiep@spokaneschools.org

Abstract: The purpose of the case study was to examine the efficacy of timing and contingent adult attention to teach a 6-year-old preschool student with autism toileting skills. Data were gathered on the length of time required for our participant to either self-toilet or request that he did not need to use the classroom toilet per session. The intervention included providing adult attention contingent spending less time on the toilet based on a changing criteria. Our results indicated a decrease in the time to toilet that was near or below his criterion. A brief return to baseline produced an increase in the time required to toilet. The replication of timing and consequences resulted in a decrease in the time required to complete a toilet visit. The implementation and evaluation of these procedures in a classroom setting were discussed.

Keywords: autism; preschool child, toilet training, self help skills, changing criterion and reversal single case design, classroom research, data-based decision making

The importance of acquiring self-help skills remains an important goal in preschool instruction and a developmental milestone (Hall, 2009; Howard, Williams, & Lepper, 2009). According to Wheeler (2007), the wetting and soiling of clothes results in a large amount of time, energy, and resources being devoted to an individual's personal care needs. The amount of time spent in the bathroom results in time missed in the classroom, and in the end, may have a negative effect of the child's education. This is why it is very important for young children to learn to use the restroom.

Toilet training can often become problematic because the child does not to emit enough toileting behaviors (Mahoney, Van Wagenen, & Meyerson, 1971). To further complicate toileting, a teacher or other caregiver may not easily be able to set the occasion for a child to empty their bladder (Honig, 1993). The toileting programs developed by Azrin and Foxx (1971, 1974) have been widely implemented in both home and school settings. Their procedures are robust and effective, and modified within several replication studies (Chung, 2007). To increase the likelihood of urination, the Azrin and Foxx procedure includes scheduled periods of sitting on the toilet. They also recommended increased fluid intake to increase the likelihood of urinating during toileting sessions. Azrin and Foxx (1971) hypothesized that toilet training also needed to be conducted on a daily basis until the child was 100% successful. Their method often requires a great deal of time, and supervision to be effective. These factors might make it somewhat impractical treatment implemented in naturalistic settings such preschool classroom. To reduce the manpower problem, we implemented two components of their program; access to a toilet in the classroom at specific times and the use of consequences for leaving the bathroom in less time. Finally, to reduce the amount of time needed for toileting, we employed a timed criterion for time spent in the classroom bathroom.

Research on toileting in the classroom supports the need for continued research. Sells-Love, Rinaldi, and McLaughlin, (2002) employed increased intake of liquids and using the toilet at specific times. They and were able to reduce the frequency of inappropriate urination in a classroom setting. Recently, Chung (2007) reported that employing a modified version of rapid toileting (Foxx & Azrin, 1974) with a 12-year-old student with developmental disabilities. Chung, like Sells-Love et al. were able to teach toileting in a classroom setting. McManus, Derby, and McLaughlin, (2003) utilized the Foxx and Azrin procedure with a young child with Fragile X. In their case report, the child would not consume the fluids necessary to establish the need to urinate. Thus, McManus et al. employed rewards in the form of high sodium food (pepperoni) to increase the child's requests for water.

A common trait with children with autism is having issues in the area of adaptive skills. With this often times come difficulties in toileting (Wheeler, 2007). According to Dalrymple and Ruble (1996) there may be a wide variety of reasons for this difficulty. These may include such issues as constipation, avoidance of bathrooms, toilet fears, painful defecation, attention deficits, psychological stresses, medical interventions, and possibly diet. It is important that children with autism are exposed to toileting early. It takes much exposure to toileting for the child to become comfortable with toileting. Because children with autism learn well with schedules and routines, this can be used to help a child to learn to properly use the bathroom (Wheeler, 2007). It is important in children with autism to understand their different needs and to use that knowledge in toilet training.

The purpose of this study was to decrease the time spent in the bathroom by a preschool student with autism. An additional goal was to have the student complete all the steps required when using in the toilet in his preschool classroom. We viewed this as a very important self-help for him to transition to a general education kindergarten setting the following school year. If a child is not trained in how to properly use the restroom and requires a great deal of time, he/she will miss out on school, therefore missing out on very crucial information that is taught. This can cause great disadvantages to the child, and affect their educational opportunities. It would also be very difficult for a child without proper toileting skills to be successful in a general education kindergarten classroom setting.

Method

Participant and Setting

“John was a six-year-old boy enrolled in an all day preschool in a large urban school district in the Pacific Northwest. He was diagnosed with autism spectrum disorder (ASD) by a licensed clinical psychologist at age 3. John received services in speech, occupational therapy, and physical therapy over the duration of the investigation. John’s classroom teacher felt that the main areas of concern for the student were social skills, behaviors, and some adaptive skills. According to the classroom teacher, a goal for John was to be placed in an integrated-kindergarten the following school year.

Along with the lack of certain adaptive skills, John had not yet mastered toileting. John was still in pull-ups, and was not fully toiletied. It was reported by the teacher that the subject would spend long periods of time in the bathroom. This included the amount of time the student would use the toilet and change his pull-up if it was wet or soiled. The teacher believed that it would be appropriate to try to decrease the amount of time that the subject took to use the bathroom. This would allow him be successful in the integrated kindergarten and have more time to be involved in the classroom activities.

The study took place in the preschool bathroom. The child attended preschool Monday through Thursday from 9:00 a.m. to 3:00 p.m. The preschool was an inclusion program for students with special needs ranging in age from 3 through 6 years. In the morning, there were eight students in the classroom. In the afternoon there were seven students. One lead teacher, a student teacher and three classroom aides staffed the classroom. In addition, there were at least two practicum students from a local university in the classroom through out the day.

The sessions took place within the bathroom in the preschool classroom. The bathroom was located in the back corner of the classroom. Typically John would use the toilet located at the back of the bathroom, and then use a stool to sit on and change himself. The first author would stand by the entrance of the bathroom. John was required to use the bathroom twice a

day. Sessions were conducted daily in the morning before he went outside for recess and in the afternoon before he finished his snack time.

Materials

There were various materials that were used for investigation. First, a hand-held timer was needed to determine the amount of time in the bathroom in the classroom. A stool and paper towel were needed for when the subject sat to change his pull-up. When the intervention was implemented, a large kitchen timer that allowed the subject to see the amount of time remaining to receive his reward was used. The timer also had an alarm on it that would beep to indicate when the student was out of time. John's family provided pull-ups. There were also a variety of games that required adult interaction used when reinforcing appropriate use of the bathroom.

Dependent Variable and Measurement

The behavior that was measured was the amount of time required for John to either use the toilet or go through the steps of using the bathroom if he did not have to use the restroom. The timer began when John entered the bathroom and ended when John placed the paper towel from washing his hands in the wastebasket. These data were gathered by employing a stopwatch. Once John entered the bathroom, the first author started the timer to measure the amount of time the individual spent in the bathroom. John would go through the motions of changing himself, beginning with taking his shoes, pants, and pull-up off. He would then attempt to go to the bathroom in the toilet. After John had finished using the toilet, he would place a paper towel that had been provided to him by an adult on a stool and sit down on it. He would then finish changing himself by putting on a clean pull-up, putting his pants back on, and tying his shoes. John would finish using the bathroom by washing his hands. The first author would stop the timer when the student placed the paper towel from drying his hands in the wastebasket. The number of minutes and seconds were converted to minutes. For example, 9 minutes 30 seconds would be recorded and graphed as 9.5 minutes.

Experimental Design and Conditions

The design that was used was combination changing criterion and reversal design (Barlow, Nock, & Hersen, 2008, Kazdin, 2010). The reversal was implemented to evaluate the effectiveness of timings and rewards on the amount of time in minutes John spent using the bathroom. A description of the various conditions follows.

Baseline. Baseline was conducted under normal classroom circumstances. John entered the bathroom after either the teacher or an instructional aide verbally prompted him that it was time to use the bathroom. During baseline, the adults in the classroom provided no prompting

during the toileting routine. Other than the prompt it was to go to the bathroom, no other prompts were provided. The first author remained outside the bathroom door and timed him. The location of the first author made it impossible for John to see or interact with the first author. The only time that the classroom adults would interact with John during baseline was when he needed help wiping himself. After the first author helped him wipe, she quickly left to stand back outside the bathroom. Baseline was in effect for three school days.

Timing and rewards. For the timings, an additional clock was added that allowed John to observe the time remaining for his bathroom session. His most preferred reinforcer item was to interact with one of the adults in the classroom. This had been determined by employing a paired-preference assessment (Fisher, Piazza, Bowman, Hagopian, Owens, & Slevin, 1992). It was hypothesized that he would work very hard to try and beat the timer to earn his goal to obtain adult attention. We employed various criterion ceilings. We began with 9 minutes and over the duration of the case report was reduced to 5 minutes. This phase was implemented five times for a total of 14 sessions.

Baseline 2. We carried out a return to baseline to determine if there was a functional relationship between timing and access to adult attention. Due teacher concerns, this condition lasted for one session.

Interobserver Agreement and Fidelity of the Independent Variable

Interobserver agreement was conducted once during baseline and six times during the intervention, timings with rewards sessions. John was given the prompt “go to the bathroom”. When John entered the bathroom, the researcher would start the timer. During baseline, the researcher stood outside the bathroom with the timer, and waited for John to finish. When the researcher observed that John had finished washing his hands and thrown away the paper towel used to dry his hands the timer was stopped. This same procedure was used during intervention; however the researcher stood inside the bathroom. The amount of time that John took to use the bathroom was then recorded on the data sheet.

During interobserver agreement sessions, the first author would bring the stopped timer to the classroom lead teacher to show her the time. The classroom teacher would then put her initials next to the time if it matched the time she saw on the timer.

Inter-observer agreement was conducted on seven of the eighteen sessions, or for 39% of the sessions. Inter-observer agreement was calculated by dividing agreements by agreements plus disagreements and then multiplying it by 100. The timing agreement for all observations was 100%.

Results

Baseline

The time in minutes and seconds it took John to finish using the bathroom is shown in Figure 1. During baseline, John took 8 minutes and 24 seconds to finish using the bathroom for session 1. John needed 11 minutes and 6 seconds in session 2. For session 3, John needed 9 minutes and 32 seconds to complete using the restroom. The average time in minutes it took John to use the bathroom independently during baseline was just over 9 minutes.

Timings and Rewards

When timings and rewards were employed, the time required to complete toileting decreased. He was able to steadily decrease the amount of time he spent in the bathroom over time. At session 7, he took four minutes and twenty-four seconds in the bathroom. After session 7, John spent between 3 to 5 minutes using the restroom. This was a large change from the amount of time recorded in baseline.

Baseline 2.

A return to baseline resulted in an increase in the time required for toileting. For that session 9 minutes and 25 seconds was required for successful completion of toileting.

Timings and Rewards

A return to this phase produced a decrease in the time required to appropriately use the toilet (range 4.1 minutes to 5.1 minutes).

Discussion

Employing the timer and rewards had positive outcomes with our participant. John drastically decreased the amount of time he spent in the bathroom, from baseline to intervention. As the intervention went on, it seemed that John had a better understanding of what was expected, and less prompting was needed. It seemed that the subject was very willing to work for reinforcement, which resulted in a decrease his toileting time. Overall, the study was very successful.

The present outcomes provide an additional replication of instituting and employing components of the Azrin and Foxx rapid toileting program (1971, 1974). We were able to employ the components of providing access to a toilet and the use of consequences. Also, we could employ a timing device to reduce the amount of time for our participant to complete toileting. These outcomes provide an additional example of being able to teach toileting in a classroom setting (Chung, 2007, McManus et al., 2003; Sells-Love et al., 2002).

One of the strengths of the reward was it was determined to be so through a forced choice preference assessment (Alberto & Troutman, 2012; Fisher et al., 1992). It was known that he was really enjoyed and would work for adult attention. John was very aware of what would happen if he beat the timer, so he worked very hard to do so. John enjoyed working for the reward, and would head to the restroom when asked.

There were limitations in the present case study. First, although adult attention was reinforcing, it was one that may not be as realistic John's future classroom setting, which was going to be an integrated kindergarten. The reward was determined to be one John would like, which is why we employed such a consequence. However, it was time consuming, and took John away from some activities his classmates were participating. A reward that took less time to present, such as a food item would have been easier to give, and should result in less loss of instructional time. Due to the ending of the first author's student teaching, data collection was terminated. However, additional contacts with the classroom teacher indicated that our participant has continued to take less and less time in the classroom restroom. An additional limitation was the downward trend shown in baseline. However, the changes in level as well as rapid reversal in baseline 2, may well overrule this limitation. Unfortunately, the second baseline condition on lasted for one session. This was at the request of the classroom teacher.

Overall, the study was successful. John's teacher noted how helpful it was to have the subject out of the restroom in a quick amount of time. John also enjoyed it, and was very willing to work. The intervention will continue to be carried out in the preschool; however, the reward has changed to something quicker, such as a gummy bear treat. John continues take less and less time in the bathroom.

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Figure 1. The amount of time in the classroom bathroom during baseline, timing and rewards (9, 8, 7 minutes criteria) baseline 2, and timing and rewards (6 and 5 min criteria) for our participant.

