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I, Wesley J. Sheeley , hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in School Psychology.

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An Investigation of Two Class-Wide Interventions for Student Desk Organization

Student's name: **Wesley J. Sheeley**

This work and its defense approved by:

Committee chair: Renee Oliver Hawkins

Committee member: Connie Schnoes, PhD

Committee member: David Barnett

Committee member: Stephen Kroeger

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An Investigation of Two Class-Wide Interventions for Student Desk Organization

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By

Wesley J. Sheeley

B.A. University of Kentucky, 2004

M.S. Eastern Kentucky University, 2005

Psy.S. Eastern Kentucky University, 2007

Dissertation Committee: Renee Hawkins, Ph.D. (Chair)

Dave Barnett, Ph.D.

Stephen Kroeger, Ph.D.

Connie Schnoes, Ph.D.

Abstract

Organization in the classroom has been shown to be a contributing factor to school success and a variable noticeably deficient in children with ADHD and other disabilities. However, organization skills are often overlooked and not taught to children in primary and secondary schools. This study investigates the effectiveness of two class-wide interventions for students' desk organization, comparing teacher instruction on desk organization and positive reinforcement with a social script protocol and positive reinforcement with first- and second-grade classrooms in a primary school in a Midwestern city of the United States. Using a combined multiple baseline with a within series component design, baseline levels of desk organization and work completion were compared to intervention levels of performance in three classrooms, as well as for six students identified by their teachers as most in need of an intervention for organization. Results indicate positive changes in student performance for both interventions, with greater improvement as intervention intensity increased to the second intervention package. Social validity, implications, and future areas of research are discussed.

Keywords: Desk Organization, Response to Intervention, direct instruction, social script, positive reinforcement, class-wide intervention

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Ephesians 6:2-3 says "Honor your father and mother" (3) "that it may go well with you and that you may live long in the land." Countless sacrifices, hours of time, and tear-filled moments of both joy and pain were endured so that I might stand upon their shoulders since the first day of kindergarten, to this body of work and whatever else the future holds. This, however small or large, represents the upmost honor I hold for them, the ideals they imparted to me as their child, and the commitment they have shown to me in passionately pursuing a means to help others. Thank you to my parents Gregory and Carol Sheeley.

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An Investigation of Two Class-Wide Interventions for Student Desk Organization

Educators across the United States strive to create orderly schools with classrooms conducive to student learning (Sugai, Lewis-Palmer, Todd, & Horner, 2001). Levine (2001) suggests that effective organizational behaviors in students may set apart those students who exhibit competency from those that demonstrate inefficient school performance. Desk organization is one teachable skill related to student organizational behaviors.

Desk Organization in the Classroom

Researchers examining classroom settings have found organization of classrooms and student preparation for learning to be pivotal for shaping an educational environment (Taylor, Pearson, Clark, & Walpoke, 2000). Organization includes individual student's work space, the topic of this research. Brophy (1983) depicts successful learning environments as directly incorporating organization. A classroom environment can impact student performance and classroom culture to foster more opportunities for learning, access to materials, and decrease transition times to allow for more time for instruction. Paine, Radicchi, Rosellini, Deutchman, and Darch (1983) noted that disorganization of classroom materials could significantly hinder student's classroom engagement. Thus, in order for a classroom to function efficiently and effectively, materials should be readily available to students.

Students with good organizational behaviors gain increased ease of access to materials, higher likelihood for work completion and submission of their work to teachers, and reduced transition times between activities (Brophy, 1983). Thought devoted to these issues may maximize the degree to which students gain the intended benefit from classroom equipment and activities (Brophy, 1983). Teachers as well stand to benefit from reduced transition times between activities with better organized classrooms. Reduced time in transition should greatly

benefit students as more time is spent in instruction or actively engaged in a task as a result. Brophy (1983) contends that items must be stored, and removed and replaced easily; each with its own place. If an organized classroom has the possibility of increasing students' engagement, then interventions targeted at classroom organization would benefit school functioning.

When teachers effectively manage the behaviors related to organization of their students, it produces a classroom environment that helps promote the acquisition of core content (Brophy, 1983). Moreover, studies of teacher and classroom organization have shown increased time for instructional activities and decreased time in transitions when classrooms are more organized (Cameron, Connor, & Morrison, 2005). Children who have difficulty organizing materials face difficulties such as misplacing their forgotten homework, lost notes, overlooked reading assignments, and a generally unprepared attitude for class (Williamson, 1997). However, while teacher and classroom organization has shown to impact efficiency of classroom functioning, individual student organization and the impact on performance is still largely unknown.

Evans, Schultz, White, Brady, Sibley, and Eck (2009) investigated the effects of improved organization in individual students on academic performance and showed mixed results across subject areas. Students showed a correlation of higher grades in math and language arts as organizational skills increased, but other subject areas were largely unaffected. Evans and colleagues hypothesized their results were related to number of assignments and increased work completion, but were unable to confirm such a relationship within that study. As the collective body of research has shown, better organized classrooms lead to higher achievement and increased instruction time, thus interventions increasing organization for teachers and students should continue to be developed, and the relationship to academic performance should be further investigated.

Desk Organization and Inclusion Variables

Other variables impacting organization are individual student characteristics. Organization is particularly important in an era of inclusive education and the call for teachers to make accommodations for students with disabilities and other needs in the regular classroom (Waldron, 1996). Teachers are confronted with a variety of student needs on a daily basis. Students present with various conditions that impact processing and organization of stimuli, as well as personal organization. Levine (2001) posits that all individuals display signs of disorganization in some form, but for some students the deficit is more widespread and perpetual. Levine recommends examining organizational deficits by localizing performance to areas of need (i.e., material-management, time-management, transitional, prospective retrieval, and integrative). The current study's interventions are implemented at the classroom level of support, while separately monitoring those students identified by teachers as having more perpetual deficits in desk organization, representative of those students that may potentially need further assessment and intervention for school material and assignment deficits in organization.

Specific instruction and practice are key for students with disabilities to learn organization strategies (Sedita, 1995). One disability that is characterized by disorganization and failure to finish tasks is Attention Deficit/Hyperactivity Disorder (ADHD) (Barkley, 1990). Atkins, Pelham, and Licht (1985) used inspection of children's desks as a direct measure of children's classroom organization, and found that variables of neatness for desks contributed somewhat discriminant information for children with ADHD independent of other classroom observations. Their study showed large median differences for all desk check variables, particularly those of chair pushed into desk, crumpled papers in desk, and trash on floor, for 'ADD' children as compared to a control group, though between-group mean differences were

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not significant. Atkins and colleagues (1989) found that aspects of neatness for desks correlated significantly with variables of inattention and over-activity. They contended that inattention/over-activity was uniquely related to messy and disorganized desks that are lacking necessary materials. Desk inspection has been shown to be potentially unobtrusive and effective for measuring neatness and preparedness (Atkins et al, 1985).   Students' classroom desks may be a worthwhile target for interventions focused on organization.

Teaching students to maintain organization in their desks and personal workspace should be seen as a preventative intervention for a transitional skill set meant to generalize beyond desks. As children continue their education into middle school and secondary education, they no longer have a specified place in the classroom in which to keep their belongings. Organizational demands imposed by secondary settings assume more autonomy and responsibility of students for their own classroom preparation that is necessary to attain success (Snyder & Bambara, 1997). Organization as a pre-academic skill is assumed to be exhibited at the secondary level and is therefore not taught directly, increasing the need for organization to be addressed in primary grades (Zigmond, Kerr, & Schaeffer, 1988). More attention should be paid to helping students develop organizational skills (e.g., Wenz-Gross & Siperstein, 1998). Organizational skills are often not taught because teachers lack training and report not being comfortable teaching the skill (Thomas, 1993). According to Fry (1996), teachers acknowledge organization skills are important but are unclear on whose responsibility it is to teach those skills to students. While there are opinions regarding the importance of student and classroom organization and when students should be taught organizational skills, there is a paucity of research investigating effective strategies for teaching organizational skills and the effects of organization on academic performance. This study contributes to the literature by examining the effects of interventions

designed to improve desk organization of elementary students. The effect of improved desk organization on the timeliness of work completion is also investigated. Teachers are often expected to focus on content areas, not organizational skills. Teachers with too much material to teach are forced to bypass basic skills such as getting organized (Thomas, 1993). It is important that interventions oriented for the classroom be effective, but feasible as well, so that teachers are appropriated time and resources to obtain positive results (Mitchem & Young, 2001). Optimal strategies for intervention must not only be effective, but cost effective and efficient for teachers to use (Brophy, 1983).

Response to Intervention and School-wide Positive Behavior Supports

Response to Intervention (RtI) is a service delivery model that focuses on prevention, progress monitoring, and data-based decision making for students with varying needs to ensure effective services, rather than a snap-shot assessment and placement that was formerly characteristic of special education (Kershner, 1990; Lyon, Fletcher, Shaywitz, Shaywitz, Torgesen, Wood et al., 2001). In RtI service delivery models, instruction and intervention services are determined across tiers of increasing intensity so as to accommodate a range of student needs (Batsche, Elliott, Graden, Grimes, Kovaleski, Prasse et al., 2005). Originally conceptualized for evaluating academic performance, behavioral assessment and interventions are also encompassed in the RtI model as a tiered approach or similarly as positive behavior supports. Tier 1 represents core behavioral and academic instruction that may include large group interventions, often for entire classrooms, schools or districts. Tier 1 also may include low intensity interventions that do not require a great deal of teacher time or system resources for individual students. Tier 2 targets those students unsuccessful in Tier 1 still struggling to perform at the level of their peers and need additional services, often delivered in small group

format. Tier 3 represents those students with the highest need of intervention and services are delivered on an individualized basis. Tier 1 interventions seek to address behavioral or academic needs and use methodologies that can be applicable to a large number of students (Batsche et al., 2005).

Decisions and data collection procedures ideally take into account the organizational structure of the classrooms and schools in which they are used, and are tailored to individualized routines and schedules (Fox & Little, 2001). Educators must not only take into account the composition of the intervention for a desired population and group size, but effective curriculum, teaching, and behavior management methods as well.

Focus on Tier 1. Using foundational principles of curriculum, teaching, and behavior management, Tier 1 interventions can often result in great progress for students while maximizing time and resources of the educators. Tier 1 interventions that supply students with preventative supports and establish behavioral control in schools are pivotal to subsequent tiers and problem solving efforts. This study investigates Tier 1 interventions to improve desk organization behavior that maximizes time and resources of educators.

Research has shown that school personnel have become increasingly reliant on punishment-based techniques (e.g., expulsion and suspension; Matson & Minshawi, 2006; Shea, 2004; Mayer, 1995; Mayer & Sulzer-Azaroff, 1990) to manage classroom behavior. Punitive approaches are likely to engender undesirable side effects (e.g., aggression, negative associations) (Brophy, 1983). There is compelling evidence suggesting that punishment-based interventions do not result in a consistent decrease in undesirable or antisocial behaviors (Gary, 1996). Positive behavior supports (PBS) is an alternative approach for reducing problem behaviors and increasing desired behaviors.

PBS was originally developed as a proactive and preventative intervention after evidence for low social skills acquisition in individuals with disabilities was found to be due in part to a lack of teaching and experience of more socially appropriate behaviors. It has since expanded as classroom behavior management that promotes teaching behaviors in place of interventions based solely on reinforcement and punishment after a behavior has already occurred. PBS strategies, including School-wide Positive Behavior Supports (SWPBS), emphasize a broad perspective that considers multiple components including the student, teacher, and the environment (e.g., Carr, Dunlap, Horner, Koegel, Turnbull, Sailor et al., 2002; Lewis & Sugai, 1999; Ruef, Higgins, Glaeser, & Patrode, 1998). PBS strategies consist of interventions that alter environments, teach skills, and reinforce desirable behaviors. PBS interventions utilize clearly defined behavioral expectations and directives that are introduced and taught explicitly via group instruction (Stormont, Lewis, & Beckner, 2005). Often expectations and directives are visually accessible throughout the day and can be composed as a set of classroom rules. Teachers make use of frequent exposure to expectations, as well as examples and non-examples of rule following behaviors. Feedback and reinforcement of socially appropriate behaviors also strengthen the effectiveness of PBS (Stormont et al., 2005). PBS strategies have been shown to be effective with elementary age students, both with and without disabilities (Fantuzzo & Polite, 1990; Kern, Ringdahl, Hilt, & Sterling-Turner, 2001).

In contrast to PBS where students receive instruction on appropriate classroom behavior in order to prevent problem behaviors from occurring, reactive classroom management techniques are those that are implemented in response to a particular behavior problem (Sugai, Horner, & Gresham, 2002). Some reactive classroom management techniques can be effective at decreasing the frequency of student's behavior problems. Specifically, when reactive

interventions are functionally based, (e.g., reinforcing incompatible behaviors with a desired reward), positive outcomes have been reported (Horner, 1994). Unfortunately, many reactive classroom management techniques are punishment based.

Scripted instructional plans. More consistent with PBS strategies is a proactive approach to increasing desirable behaviors in which students are given instruction and clear expectations for performance. Students are essentially directed towards behaviors of what to do, as opposed to what not to do. Behaviorally, effective classroom managers incorporate follow up and remind students of procedures, with contingent consequences for desired behaviors. Children show better outcomes when settings include clear and consistent rules that are enforced, present opportunities for inclusion, have clear social norms for behavior, are governed by practices that support both autonomy and responsibility, provide opportunities to learn valued skills, and consistent in expectations as communicated to the child (Bartko, 2005).

In many cases, a scripted approach allows for educators to transition students easily into the material an intervention seeks to improve upon. A well-documented PBS intervention is to have the instructions and strategies for target behavior encompassed and presented as a social story (Horner, 2000). Social stories typically describe social situations, relevant cues, and desired responses to a given situation (Gray & Garand, 1993). Social stories have been used successfully as a teaching tool for children with Autism (Thiemann & Goldstein, 2001), but have yet to be fully explored for use with typically developing children. Gray's (2000) development of social stories follows a distinct and specific format of both sentence structure and sequence. Sentences are characterized as descriptive, perspective, directive, or control and collaboratively seek to provide students with as much information about a social situation as possible (Gray, 2000). The interventions used in this study utilize teaching classroom expectations by similarly

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providing students with the necessary information for successful execution of desk organization as a behavior. However, the interventions do not follow Gray's model of sentence structure and sequencing for social stories, and may be better described as social scripts.

Various forms of scripts exist in the literature, but typically present an overarching theme of specifying activities beneficial for students' learning, and avoiding those behaviors which may be detrimental (Weinberger, Ertl, Fischer, & Mandl, 2005). Scripts are conducive to large scale (classroom or school-wide) interventions and may be well suited for the topic of student organization, specifically desk organization. Achieving classroom organization and ensuring adherence to rules require instruction and follow up of expectations (Brophy, 1983). Expectations are made clear and focus on what students should be doing and how to do it (Brophy, 1983).

A more intensive script for desk organization. In RtI, interventions are evaluated and increase in intensity as needed. A social script for desk organization may follow basic instruction by teachers. "The Desk Fairy" (DF) intervention uses a fantasy-based construct in a book format that utilizes instruction, visual indicators, and positive reinforcement to help teachers establish desk organization. It was derived from **t**he Sleep Fairy (Burke, Kuhn, & Peterson, 2004; Peterson & Peterson, 2003) which uses brief explicit instruction to identify desirable bed-time behaviors and the criterion for reinforcement. Its use of overt instruction makes the concepts easy to obtain for children and the behavioral principles and contingencies are well established (Cooper, Heron, & Heward, 2007) as is modeling (Bandura, 1971). This study seeks to investigate the effects of instruction delivered via a script, and positive reinforcement incorporated in Tier 1, class-wide interventions for student organization skills.

The Current Study

This study was designed to evaluate class-wide intervention strategies to improve desk organization. The two interventions implemented incorporated procedures from the research found to have positive effects on student behavior including instruction and positive reinforcement. The first intervention included teacher instruction on desk organization behavior and positive reinforcement. The Instruction with Positive Reinforcement intervention (I+R) used in this study is a combination of instruction delivered by the teacher and contingent positive reinforcement in the form of a tangible prize. Teachers visually and verbally taught desk organization to students as well as criteria to obtain a prize for performance.

The second intervention incorporated the use of a social script and positive reinforcement. "The Desk Fairy" (DF) intervention is a script that uses a fantasy-based construct in a story book format and includes instruction to criterion, visual indicators, and contingent positive reinforcement to help teachers establish desk organization.

The study was designed to answer the following research questions:

1. Will the I+R intervention improve class-wide student desk organization and work completion behavior?

2. Will the I+R intervention improve the desk organization and work completion of students identified as being most in need of intervention?

3. Will the DF intervention improve class-wide desk organization and work completion behavior as compared to the I+R intervention?

4. Will the DF intervention improve the desk organization and work completion of students identified by teachers as being most in need of intervention as compared to the I+R intervention?

The study contributes to the literature on desk organization by examining the comparative effects of two interventions organized by increasing intensity based on teacher's preparation and management of the intervention. Further, the study investigates the impact of desk organization on academic performance.

Method

Participants and Setting

Participants were 44 students enrolled in three classrooms, one from grade 1 and two from grade 2, in a K-6 elementary school in the Midwestern United States. The school's principal was approached to participate in the study and was offered consultative support to teachers interested in implementing interventions for desk organization. The principal referred the researcher to teachers who were approached for potential participation. The classrooms of the first three teachers who agreed to participate were included in the study. Participation was voluntary and no identifying information of teachers or students was collected throughout the study. Students with IEPs were not excluded from the study. Although the desks of all students across the three classrooms were examined, participating teachers also identified two desks in their classrooms that belonged to students they thought were in most need of an intervention for desk organization for further desk checks and data analysis.

Experimental Design

A multiple baseline across classrooms with within series component analysis (Cooper et al., 2007; Kazdin, 2010) was used to evaluate the effects of the I+R and DF interventions on desk organization. Assessment and data collection procedures remained constant across baseline and intervention conditions for all dependent variables.

Prior to the start of the study, a decision rule was established that after collecting at least five data points, if 80% or more of students in a classroom meet the criteria for having an

organized desk for two consecutive days, the B or C condition would not be implemented in that classroom. However, this scenario did not occur and all classrooms received both interventions. In addition, an intervention condition was not implemented until a stable trend in data of the previous condition was observed. Using this multiple-baseline with within series component analysis design, evidence was collected to indicate the effectiveness of the B and C conditions across and within classrooms. The introduction of the I+R condition (B) and DF condition (C) were staggered by time across classrooms.

Dependent Variables

Organized desk behavior and percentage of work completed (PWC) were monitored each school day each day throughout the study. Data on desk organization were reported as percent of students meeting criteria for having an organized desk (PMC) and the average number of tallies students received for disorganized materials (ANT). Observations for desk organization utilized a code looking at six variables that compose desk organization (Appendix A). The following six items were used to assess for perceived desk organization:

1. Books and folders piled neatly to one side; Papers neatly stacked with books or in a folder
2. All pens and pencils in the pencil box; All markers, colored pencils, and/or crayons inside their box, or the pencil box
3. No trash in the desk; No trash or materials on the floor or surrounding the desk
4. No loose items in the desk; All miscellaneous school materials in the pencil box (glue stick, scissors, erasers, etc.)
5. Chair is on top of the desk, or pushed under the desk
6. Desk is within 6 inches of the designated spot/pod

Items were derived from inspection of desks in primary classrooms and from previous criteria for 'neatness' when inspecting desks in previous research (Atkins et al., 1985). Observers marked a tally for each of the six variables that were not present for an individual student's desk, including multiple points deducted for a single grouped variable (i.e. books, folders, and papers stacked neatly). A grouped variable could not be tallied more than 5 times in an observation, and items 5 and 6 could only be tallied once per their criterion. This allowed for 22 possible tallies in a given observation. As an example, if a child were given 5 deductions for loose papers, and 2 deductions for crayons not in the box, their overall rating would be 7 total deductions. A 5 deduction max for each variable was chosen as a criterion after which further deductions were not counted. Students receiving two tallies or less achieved the criteria for desk organization and were eligible for reinforcement from the teacher during condition B, and the 'Desk Fairy' during condition C. For example, a student with one book out of place and one pencil not in the pencil box was rated as having an organized desk and received two tallies. A child with one piece of trash, one pencil out of the box, and two papers out of place did not meet organized desk criteria, and received four tallies. The primary dependent variable used in the multiple baseline design was percentage of students per classroom achieving organized desk criteria or percent met criteria (PMC). The average number of tallies for disorganized materials (ANT) served as secondary measure of desk organization.

Work completion (PWC) was calculated as a percentage determined by the number of completed assignments turned into the teacher divided by the number of assignments given to students and multiplied by 100. Completed assignments and assignments given were recorded by teachers and reported to the primary investigator after each school day.

Doctoral interns and post-doctoral fellows in school psychology collected data on desk organization following training on data procedures. Each data collector read and understood the definitions of the desk organization variables. Initially, the observers were given an observation form (Appendix A) to review. Prior to classroom observation, the observers and classroom teachers attended a training session lasting approximately 30 minutes. During this session, the primary investigator reviewed and identified the six variables within the observation code at the research site, and how teachers were to teach what an organized desk was for condition B. Teachers and observers were given time to ask questions regarding the coding definitions and to seek clarification on any items that caused confusion. Observer reliability was taken during baseline to ensure a criterion of 80% or higher was met.

Data Analysis

Visual inspection of the graphed data was used for analysis of the MBL and within series conditions. Class-wide averages for each of the dependent variables are presented graphically. In addition, teachers identified two desks in their classroom belonging to students they believed to be most need of an intervention for organization. No identifying information was collected on these students, but their data were graphed separately. Descriptive statistics also were calculated and included means, standard deviations, and percentage of non-overlapping data (*PND*) to further supplement visual analysis of the data. Visual analysis was used to evaluate variability of the data within and across conditions, overlapping data across conditions, for latency and rate of change, as well as, level and trend across conditions and classrooms as well as targeted students.

PND (Scruggs, Mastropieri, and Casto 1987) also was described. *PND* is calculated by identifying the highest (or lowest) data point in baseline and counting the number of data points in the treatment condition that exceed (or are below) this point. This value is divided by the total

number of data points in the treatment condition and then multiplied by 100. Data were used to compare the effects of each intervention condition to baseline performances at the classroom level, as well as comparing an individual classroom's performance between intervention conditions. Further, data were then compared across classrooms to evaluate changes in performance. Data from different dependent variables were compared for similar trends in data paths and for nominal comparison of immediacy and level change, considering sensitivity and accuracy of progress monitoring the observed changes in performance. Data from students referred by teachers were similarly inspected for impact of intervention compared to baseline, and between intervention conditions. Data of referred students were compared to one another, grouped by classroom they were referred from, by both within the same classroom and across classrooms. Data from referred students was also evaluated across dependent variables for nominal changes when comparing the effects of interventions on performance. Finally, data from referred students were compared to data from whole classrooms to compare and contrast intervention effects on those students identified by their teachers as most in need of an intervention for organization to all students in the classroom.

Procedures

Following baseline, the I+R intervention package (B) was implemented on a daily basis during a selected academic instructional period of the teacher's discretion. The I+R intervention was implemented after a stable trend in baseline data was observed. Each day, for a minimum of five days, used to evaluate for PMC and trend, the students were given instruction and/or prompts regarding organized desk behavior and one student was randomly selected to potentially access reinforcement for displaying organized desk behavior. Upon introduction of the C condition, the DF intervention package also was implemented daily.

Research team members arrived at the end of the school day to assess individual desks in classrooms for organized desk criteria. Based on the observations of the research team, those students earning two tallies or less met criteria to receive reinforcement. During the I+R condition, teachers gave reinforcement to the student whose desk they assessed, if criteria were met, via a small tangible reward (e.g., sticker, eraser, pencil). The teacher verbalized if the desk met organized desk criteria to the student, and placed a reward on top of the student's desk if earned. Researchers, not teachers, rewarded students meeting criteria for an organized desk during the DF condition. Rewards were left on top of the students' desks. The DF intervention was implemented after a stable trend in data of initial intervention condition B (I+R) was observed.

Baseline. During baseline (A), the teacher was directed to continue with usual classroom management strategies. Data collection for desk organization was collected at the end of each school day without any changes to classroom instruction or behavior management.

Instruction + Reinforcement (I + R). In this condition, the teacher was directed to instruct the students as a class on what an organized desk is and looks like. During this condition, the teacher instructed students using verbal instruction and visual written criteria, visible to the entire classroom (i.e., chalkboard). Teachers also placed two pictures, given to them by the researchers, underneath description of desk organization that served as visual reminders of an organized desk and a desk that is not organized. The teacher gave a verbal and visual prompt, as a reminder of organized desk criteria, for each day of the I+R condition. No less than an hour later but before the end of the school day, the teacher selected one student at random to assess their desk for organization. The teacher verbalized if the desk met organized desk criteria or not, and supplied reinforcement by placing a reward on top of the student's desk

if the student met criteria.

At the end of the first day of this condition, the teacher informed the students they had 10 minutes of "free time," meant for students to organize their desks but not labeled as such. This did not occur for the remainder of the intervention. Researchers observed for organized desk criteria at the end of the school day but did not deliver reinforcement for other students meeting organized desk criteria during this condition. The teacher and researcher script for this condition of the research study can be found in Appendix B.

"Desk Fairy" Intervention (DF). In the DF intervention condition (C), the intervention including the contingency was implemented daily. The teacher explained to the class that they had a new "book" to read aloud. The teacher then read aloud the DF book, lasting approximately 2-5 minutes, which detailed the criteria for an organized desk. The DF book, as read by the teacher, gave directives for what children should do to receive reinforcement from the Desk Fairy. Students knew what behavior was being monitored, and that they had the chance to earn reward via the DF story.

At the end of the first day of the DF intervention condition, the teacher informed the students they had 10 minutes of "free time," meant for students to organize their desks but not labeled as such. This did not occur for the remainder of the intervention. Researchers observed for organized desk criteria and delivered rewards contingently for all students after each school day had ended during this condition. A teacher script for this condition of the research study can be found in Appendix C.

Observer Reliability

To assess inter-observer agreement (IOA; Kazdin, 2010) two researchers independently reviewed 20% of all classroom desk observations, with no less than 20% of observations per experimental condition. To calculate IOA for PMC the following formula was used:

$$\frac{\text{\# of Agreements}}{\text{\# of Agreements + Disagreements}} \times 100 = \text{IOA}$$

Average agreement for all PMC co-observations was 93%. Classroom 1 average agreement was 94%, with a range of 88% to 100%. Classroom 2 average agreement was 93%, with a range of 83% to 100%. Classroom 3 average agreement was 93%, with a range of 83% to 100%.

Average agreement for all ANT co-observations was 89%. Classroom 1 average agreement was 90%, with a range of 82% to 97%. Classroom 2 average agreement was 89%, with a range of 83% to 96%. Classroom 3 average agreement was 88%, with a range of 80% to 95%. Average agreement by variables within ANT showed similar reliability. The first variable of books, folders, and papers stacked neatly showed an average agreement of 84%, with a range of 80% to 89%. The second variable of pencils, pens, markers, and crayons put away in their boxes showed an average agreement of 96%, with a range of 89% to 100%. The third variable monitoring trash showed an average agreement of 87%, with a range of 85% to 92%. The fourth variable of loose school materials showed an average agreement of 94%, with a range of 88% to 97%. The fifth variable of the chair pushed under or on top of the desk showed an average agreement of 100%, and did not vary between raters. The sixth variable of the desk being in the right spot showed an average agreement of 100%, and did not vary between raters.

PWC was calculated from permanent product as recorded in each teachers grading book and was not observed during desk assessments. In addition, measures to ensure reliability of data entry were taken using Microsoft Excel. 100% of values for each dependent variable were entered twice and checked for accuracy of the entered value.

Intervention Adherence

Teachers completed a daily log to record the date and time of when the intervention procedures were implemented. Teachers then emailed the date and time of when the intervention procedures were implemented to the researchers that same day. Using the logs and email records from each teacher, three percentages of adherence were calculated: percent of days in intervention conditions B and C that teachers recorded the date and time of implementing procedures in their individual log, percent of days in intervention conditions B and C that teachers emailed the researcher the date and time of implementing procedures, and percent of overlap, or co-occurrence, of both noting the date and time of implementing procedures in their individual log and emailing the same information. All three percentages were found to be 100% for all three teachers, shown in Table 1, for the durations of both the I+R and DF conditions.

Adherence also was evaluated through direct observation for approximately 20% of all intervention sessions using the teacher intervention scripts as a checklist. All three teachers were observed to exhibit 100% of intervention steps noted on the I+R intervention checklist for implementation. All three teachers were observed to exhibit 100% of the intervention steps noted on the DF intervention checklist for implementation.

Table 1

Teacher Intervention Adherence

Classroom	Condition	Log Note	Email	Overlap	Observation
	Baseline	100%	100%	100%	N/A
1	I+R	100%	100%	100%	100%
	DF	100%	100%	100%	100% 100%
	Baseline	100%	100%	100%	N/A
2	I+R	100%	100%	100%	100%
	DF	100%	100%	100%	100% 100%
	Baseline	100%	100%	100%	N/A
3	I+R	100%	100%	100%	100%
	DF	100%	100%	100%	100% 100%

Social Validity

Social validity was assessed by ratings based on an adaptation of the Behavior Intervention Rating Scale-Revised (BIRS-R; Sheridan & Steck, 1995). The BIRS-R is a 24-item scale that utilizes a 6-point Likert scale to assess for acceptability, satisfaction, and efficacy. The BIRS-R was given to the principal and all participating teachers (Appendix D). All surveys were completed anonymously. The survey utilized a 6-point Likert-type scale (1 = strongly disagree; 3 = disagree slightly; 4 = slightly agree; 6 = strongly agree). Space was provided for additional

comments.

Results

The results of this study show that the I+R intervention led to improvements in desk organization for classrooms and individual students identified as being most in need of intervention for organization. The DF intervention showed further improvement to desk organization for classrooms as well as referred students. However, data collected on work completion did not yield significant visual changes across classrooms or individual students. Results of the study are presented by dependent variable, with analysis of each classroom done in sequence. Individual student data are then analyzed.

Percent Met Criteria

Percent Met Criteria (PMC) was defined as the percentage of students per classroom achieving organized desk criteria of two tallies or less for an observation. Figure 1 displays PMC across classrooms. Baseline data for Classroom 1 were relatively stable with a slight downward trend ($M = 2.80$, $SD = 3.80$). With the introduction of the I+ R condition, there was an immediate increase in the level of PMC ($M = 25.60$, $SD = 6.00$). Although data remained above baseline levels throughout the condition, there was a slight decreasing trend in the data. Summary statistics reported in Table 2 support this visual analysis with 100% *PND*. Observations indicated that further intervention for Classroom 1 students was needed, as PMC did not approach 80% of students during the I+R condition. Upon implementation of the DF intervention, there was an immediate increase in PMC in Classroom 1 ($M = 67.10$, $SD = 19.20$). Data remained above baseline and I+R levels throughout the condition, with an increasing trend in the data. Summary statistics reported in Table 4 support this visual analysis with no overlap data compared to both baseline and the I+R condition.

Baseline data for Classroom 2 were stable with a slight downward trend ($M = 2.30$, $SD =$

3.60). There was an immediate increase in the level of PMC (M = 12.00, SD = 5.40) at onset of the I+R condition. There was a slightly decreasing trend in performance, and data did not remain above baseline level. The I+R intervention had a moderate overlap of data compared to baseline (PND = 60%). There was an immediate increase in PMC in Classroom 2 (M = 73.20, SD = 16.20) upon introduction of DF the intervention. An increasing trend in data is observed, and data remained above baseline and I+R levels throughout the condition. This visual analysis was supported with no overlapping data compared to baseline (PND = 100%) and the I+R condition (PND = 100%).

Classroom 3 shows a stable baseline with no change in trend (M = 0.00, SD = 0.00). The I+R condition shows there was an immediate increase in the level of PMC (M = 10.20, SD = 3.80). There was a slight decreasing trend in the data, although the data remained above baseline levels throughout the condition. No overlap in data,100% PND, supported visual inspection of the data. Implementation of the DF intervention shows an immediate increase in PMC in Classroom 3 (M = 41.40, SD = 15.80). Data remained above baseline and I+R levels throughout the condition, with an increasing trend in the data. Further support of 100% PND compared to baseline and the I+R condition supported visual analysis.
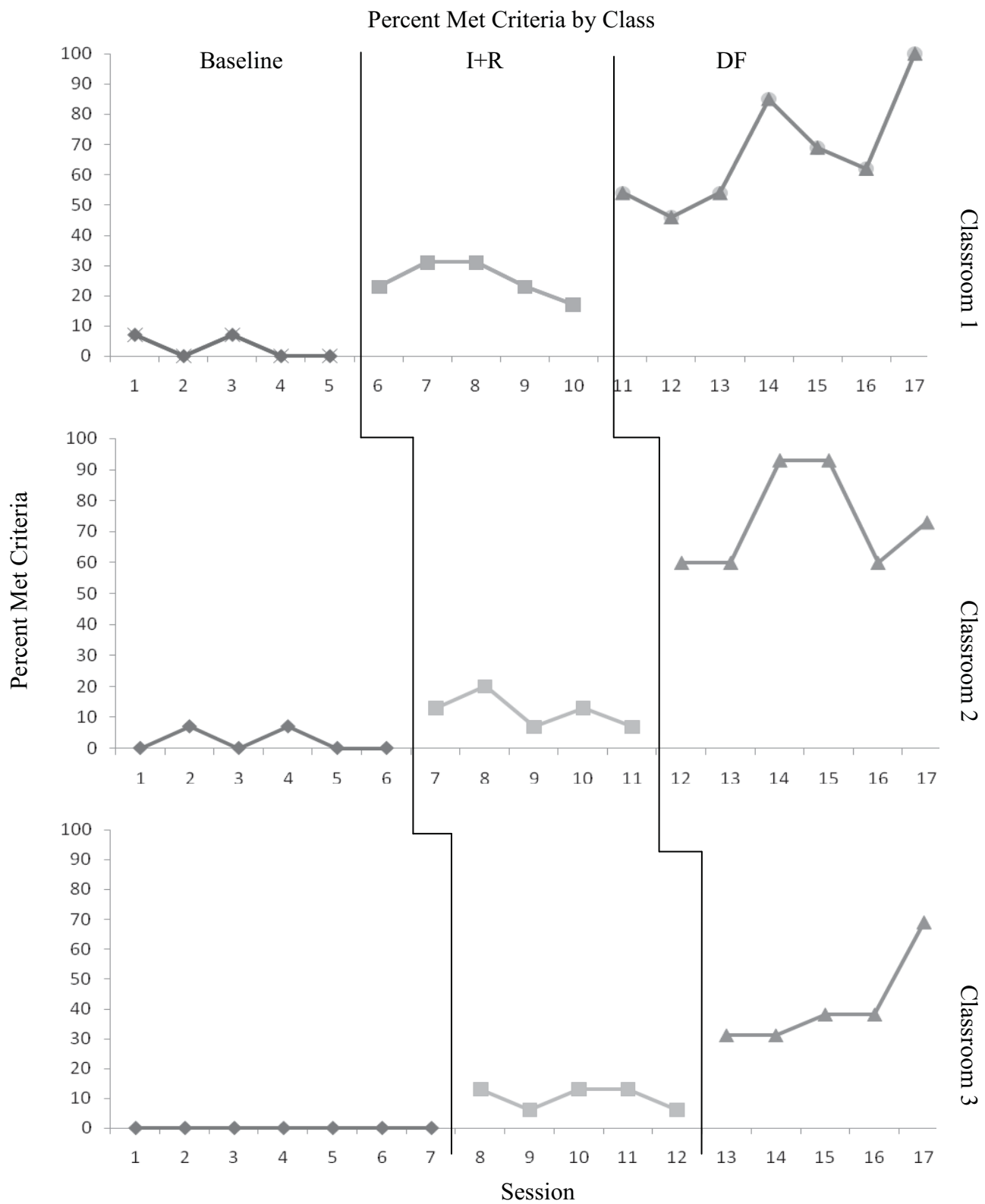
Figure 1: A multiple baseline graph of the I+R and DF conditions' effects on PMC by classroom.

Table 2
PMC Descriptive Statistics

Classroom	Baseline			I+R				DF				
	Data Points	Mean	SD	Data Points	Mean	SD	PND	Data Points	Mean	SD	PND to BL	PND to I+R
1	5	2.80	3.80	5	25.00	6.00	100%	7	67.10	19.20	100%	100%
2	6	2.30	3.60	5	12.00	5.40	60%	6	73.20	16.20	100%	100%
3	7	0.00	0.00	5	10.20	3.80	100%	5	41.40	15.80	100%	100%

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When analyzing data for the individual students, PMC becomes a mutually exclusive variable as an individual student either did or did not meet the criteria for having an organized desk. Table 3 shows the percentage of data points in which these students achieved criteria for potential reinforcement across conditions for the individual students identified by their teachers as being most in need of intervention for desk organization. These percentages are reflective of the visual results observed for the students' respective classrooms shown in Figure 1. Classroom 1 Student 1 shows a gradually increasing PMC across conditions, and met criteria for 100% of observations during the DF condition. Classroom 1 Student 2 does not show as much progress comparatively with Student 1, but also was shown to successfully achieve organized desk criterion for approximately 57% of observations in the DF condition.

Classroom 2 Student 1 shows a similar progression in achieving organized desk criterion as Classroom1 Student 2. This student does not achieve criterion for having an organized desk during baseline and I+R conditions, but does so for approximately 83% of observations in the DF condition. Classroom 2 Student 2 achieves organized desk criterion once, or approximately 20%, during the I+R intervention condition, and for 100% of observations in the DF condition.

Classroom 3 Student 1 shows the least amount of change in performance for organized desk criterion. This student shows 0% performance for both baseline and I+R conditions, but does achieve organized desk criterion once (approximately 20%) during the DF condition. Classroom 3 Student 2 shows a more similar performance to previous students, with approximately 80% of observations successfully meeting organized desk criteria during the DF condition, and 0% for the previous baseline and I+R conditions.

Overall, baseline performance of PMC behavior was stable at or below 7% of students in a classroom for all classrooms; often at a percentage of 0 for baseline observations in each

classroom. PMC showed an increase across all three classrooms when under I+R condition compared to baseline behaviors of desk organization. The I+R condition did not yield significant lasting change to behaviors of desk organization as measured by PMC, and showed a downward sloping trend across classrooms and individual students. The introduction of the DF condition showed a significant increase in level from I+R across classrooms and individual students. The DF condition also yielded shifts to upward sloping trends in PMC data for all classrooms and individual students.

Table 3

Individual Students' Percent of Days per Condition Meeting Organized Desk Criteria

Classroom-Student	% Baseline	% I+R	% DF
C1 – S1	0	40	100
C1 – S2	0	0	57
C2 – S1	0	0	83
C2 – S2	0	20	100
C3 – S1	0	0	20
C3 – S2	0	0	80

Average Number of Tallies

The average number of tallies (ANT) was calculated by adding the number of tallies per student in a classroom together, and then dividing by the number of students observed. This variable was used to further investigate the effects of interventions used in the study on desk

organization behavior, depicting changes in overall desk organization and not just those students meeting criterion for an organized desk. Figure 2 displays ANT across classrooms. Baseline data for Classroom 1 were stable with an increasing trend in data ($M = 9.20$, $SD = 1.80$). With the introduction of the I+R condition, there was an immediate decrease in the level of ANT ($M = 5.30$, $SD = 0.70$). Although data remained below baseline levels throughout the condition, there was a slight increasing trend in the data. Summary statistics reported in Table 4 support this visual analysis with 100% *PND* compared to baseline data. Upon implementation of the DF intervention, there was an immediate decrease in ANT in Classroom 1 ($M = 1.50$, $SD = 0.70$). Data remained below baseline and I+R levels throughout the condition, with a slight decreasing trend in the data. Visual analysis was further supported with 100% *PND* compared to baseline and the I+R condition.

Baseline data for Classroom 2 were stable with a slight increasing trend in data ($M = 10.50$, $SD = 1.10$). At the introduction of the I+R condition, there was an immediate decrease in the level of ANT ($M = 6.40$, $SD = 0.80$). There was a slight increasing trend, though data remained below baseline levels throughout the condition. Visual analysis was supported by summary statistics with no overlap in data ($PND = 100\%$). Implementation of the DF intervention shows an immediate decrease in ANT in Classroom 2 ($M = 2.00$, $SD = 1.10$). Data remained below baseline and I+R levels throughout the condition, with a slight decreasing trend in the data. There was no overlap in data compared to both baseline and I+R at 100% *PND*.

Table 4
ANT Descriptive Statistics

	Baseline			I+R				DF					
Classroom	Data Points	Mean	SD	Data Points	Mean	SD	PND	Data Points	Mean	SD	PND to BL	PND to I+R
1	5	9.20	1.80	5	5.30	.70	100%	7	1.50	.70	100%	100%
2	6	10.50	1.10	5	6.40	.80	100%	6	2.00	16.20	100%	100%
3	7	10.90	1.30	5	7.20	.30	100%	5	4.60	15.80	100%	100%

28
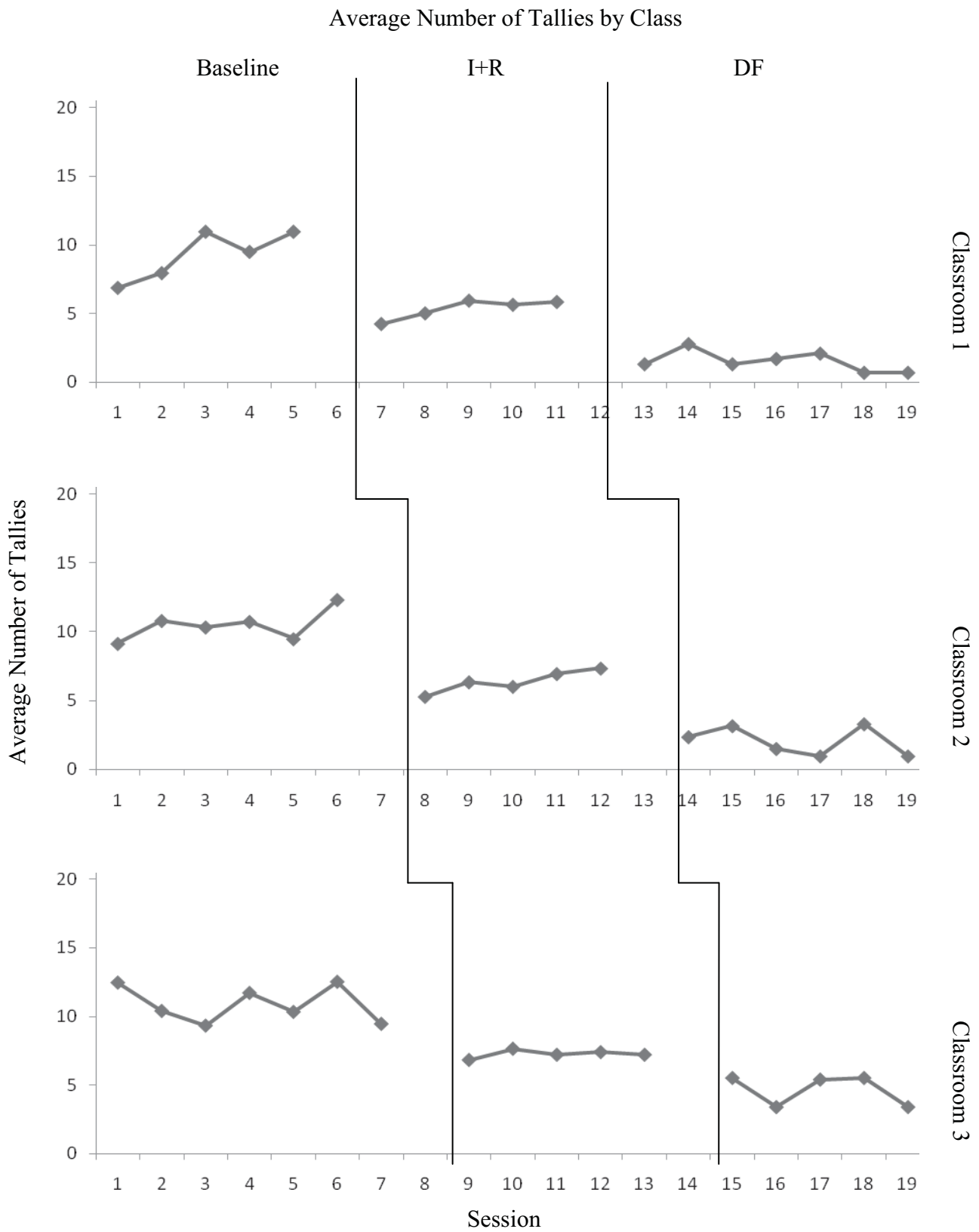
Figure 2: A multiple baseline graph of the I+R and DF conditions' effects on ANT by classroom.

Classroom 3 shows a stable baseline with a nearly level data ($M = 10.90$, $SD = 1.30$). Visual inspection shows an immediate decrease in the level of ANT ($M = 7.20$, $SD = 0.30$) when the I+R condition is introduced. Data remained below baseline levels throughout the condition, while there was a shift to a slightly increasing trend in data. Summary statistics support this visual analysis with 100% *PND*. There was a large impact on behavior when the DF condition is introduced, with an immediate decrease in ANT in Classroom 3 ($M = 4.60$, $SD = 1.10$). Data remained below baseline and I+R levels throughout the condition, with a slight decreasing trend in data. Summary statistics support this visual analysis with 100% *PND* compared to baseline and the I+R condition.

Figure 3 displays ANT across referred students. Baseline data for Classroom 1 Student 1 were stable at baseline, with a slight increasing trend in data and relatively low level compared to other students who were monitored at the individual level ($M = 6.40$, $SD = 0.50$). With the introduction of the I+R condition, there was moderate effect on behavior with an immediate decrease in the level of ANT ($M = 3.20$, $SD = 1.30$). A slight increasing trend in the data is observed. Data remained below baseline levels throughout the condition. Summary statistics reported in Table 5 support this visual analysis with no overlap (*PND* =100%). The DF condition shows a large effect on behavior with an immediate decrease in ANT ($M = 0.40$, $SD = 0.80$). After the initial data point for the DF condition, subsequent data points remained below I+R level the remainder of the condition. Data were below baseline throughout the DF condition. *PND* compared to the I+R condition was 86%, and 100% compared to baseline.

Table 5

ANT Descriptive Statistics for Individual Students

Classroom-Student	Baseline			I+R				DF				
	Data Points	Mean	SD	Data Points	Mean	SD	PND	Data Points	Mean	SD	PND to BL	PND to I+R
C1 – S1	5	6.40	.05	5	3.20	1.30	100%	7	.40	.80	100%	86%
C1 – S2	5	12.00	2.00	5	5.20	.80	100%	6	2.40	1.30	100%	71%
C2 – S1	6	13.00	2.40	5	7.40	1.90	100%	6	1.70	1.80	100%	83%
C2 – S2	6	13.20	3.50	5	4.80	1.90	100%	6	.30	.50	100%	100%
C3 – S1	7	15.30	2.40	5	14.80	2.60	0%	5	5.80	3.70	80%	100%
C3 – S2	7	13.60	2.80	5	5.80	.80	100%	5	2.40	.90	100%	100%

Average Number of Tallies by Individual Student

Baseline   I+R   DF
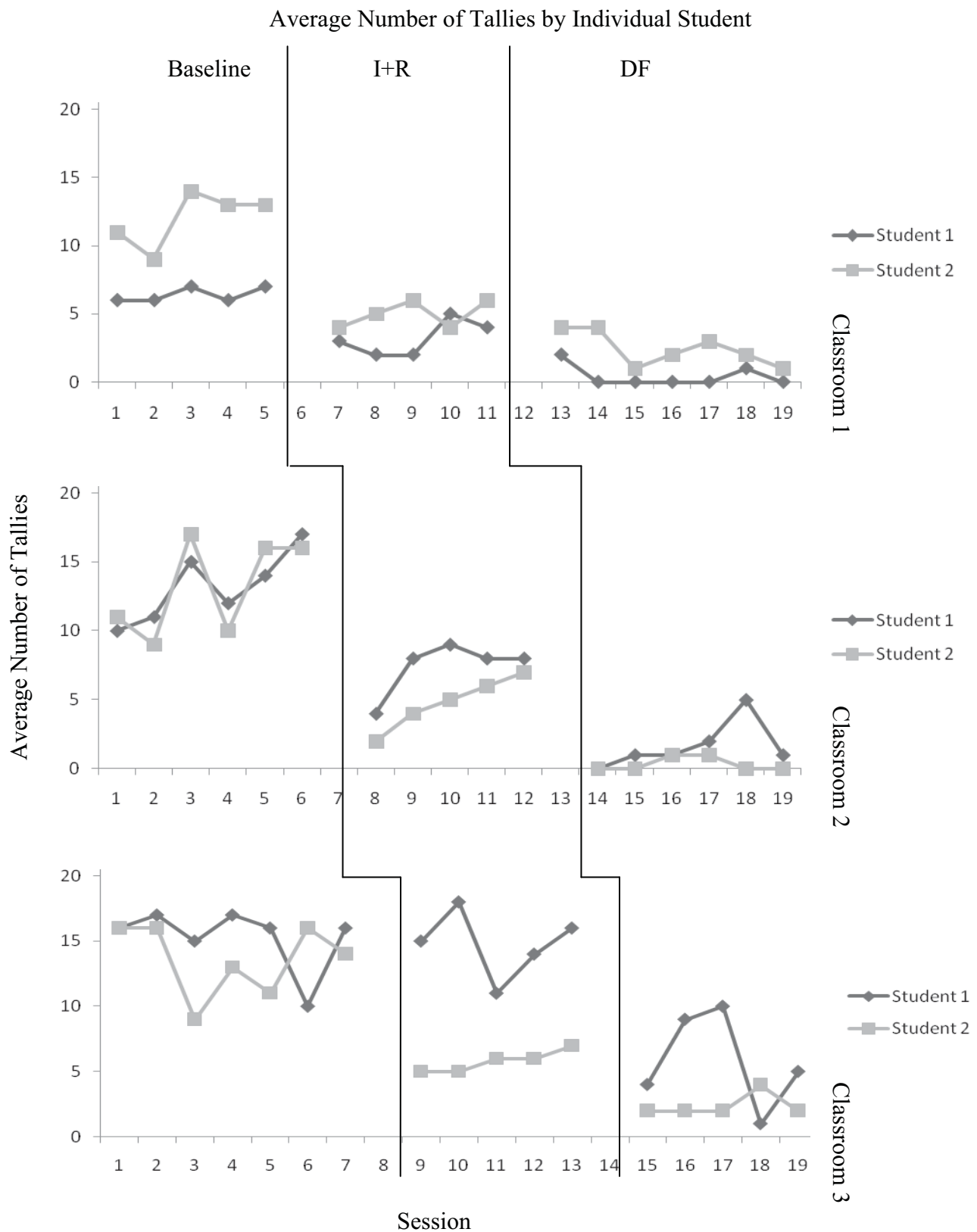
Figure 3: A multiple baseline graph of the I+R and DF conditions' effects on ANT by student.

Baseline data for Classroom 1 Student 2 were relatively stable with a slight increasing trend in data ($M = 12.00$, $SD = 2.00$). The I+R condition shows a large effect on behavior with an immediate decrease in the level of ANT ($M = 5.20$, $SD = 0.80$). Although the data remained below baseline levels throughout the condition, there was a shift to a slight increasing trend in data. Summary statistics support this visual analysis with no overlap in data ($PND = 100\%$). At the onset of the DF intervention, there was a slightly delayed decrease in ANT ($M = 2.40$, $SD = 1.30$). After the slight delay, data remained below baseline and I+R levels the remainder of the condition, with a decreasing trend in data. PND compared to the I+R condition was 71%, and 100% compared to baseline, further supporting visual analysis.

Baseline data for Classroom 2 Student 1 were stable with an increasing trend in data ($M = 13.00$, $SD = 2.40$). I+R condition implementation shows an immediate decrease in the level of ANT ($M = 7.40$, $SD = 1.90$). Data remained below baseline levels throughout the condition, with an increasing trend in data. 100% PND further supports this visual analysis and observed effects on behavior. Implementation of the DF intervention shows there was an immediate decrease in ANT ($M = 1.70$, $SD = 1.80$). Though data initially appeared stable below I+R levels, there is a slight increasing trend in data. Summary statistics show little to no overlap in PND: 84% compared to the I+R condition, and 100% compared to baseline.

Classroom 2 Student 2 baseline data were stable with an increasing trend in data ($M = 13.20$, $SD = 3.50$). There was an immediate decrease in the level of ANT ($M = 4.80$, $SD = 1.90$) with the introduction of the I+R condition. There was an increasing trend in data, which remained below baseline levels through the condition. Table 7 shows summary statistics that support this visual analysis with no overlap in data at 100% PND. Onset of the DF intervention shows there was an immediate decrease in ANT ($M = 0.30$, $SD = 0.50$). A level trend is

observed, while Data remained below baseline and I+R levels throughout the condition. When DF is compared to baseline and the I+R condition, summary statistics support this visual analysis with 100% *PND*.

Data for Classroom 3 Student 1 during baseline were relatively stable with a slight decreasing trend in data ($M = 15.30$, $SD = 2.40$). Implementation of the I+R condition led to no observable change in level of ANT ($M = 14.80$, $SD = 2.60$). The data remain overlapping with baseline levels throughout the condition, with a slight increasing trend in data. Large overlap in data (0% *PND*) support this visual analysis. The DF intervention shows a large effect on behavior, as there was an immediate decrease in ANT ($M = 5.80$, $SD = 3.70$). Data remained below I+R levels, and below baseline levels excluding one data point, throughout the condition, with a slight increasing trend in data. *PND* compared to the I+R was 100% with no overlap, and little overlap at 80% when compared to baseline.

Baseline Data for Classroom 3 Student 2 were fairly stable with a slight increasing trend in data ($M = 13.60$, $SD = 2.80$). At the onset of the I+R condition, an immediate decrease in level of ANT ($M = 5.80$, $SD = 0.80$) is observed. There is a slight increasing trend, and the data remain below baseline levels throughout the condition. Visual analysis is supported by summary statistics, with 100% *PND*. DF implementation was followed by an immediate decrease in ANT ($M = 2.40$, $SD = 0.90$). Data remained below I+R and baseline levels throughout the condition, with a slight increasing trend in data. There is 100% *PND* when DF is compared to both baseline and I+R.

Overall, ANT data were observed to be stable and consistent across classrooms during baseline data collection. ANT showed significant decreases across all classrooms when the I+R condition was introduced. to a classroom. Similar to PMC data, during the I + R condition, ANT

showed trends toward baseline levels of performance across classrooms and individual students. The DF condition yielded larger changes in level of performance for classrooms and individual students. The DF condition showed shifts in trend from upward sloping in the I+R condition, to downward sloping toward desired behavior.

Percentage of Work Completion

Percentage of Work Completion (PWC) was calculated by totaling the number of assignments turned in on time that day, as recorded by the teacher, divided by the total number of assignments due that day, as reported by the teacher. This number was then multiplied by 100 and reported as an average of completed assignments for the day by class. PWC was a variable monitored across conditions to measure impact of the I+R and DF conditions on academic performance. Figure 4 displays PWC across classrooms.

Baseline data for Classroom 1 were stable (M = 97.30, SD = 1.90). With the introduction of the I+R condition, there was no change in level of PWC (M = 100.00, SD = 0.00). Throughout the condition data remained at baseline levels. Summary statistics reported in Table 6 show PND of 0%. Upon the implementation of the DF intervention, there was no change in level of PWC (M = 94.00, SD = 4.00). Data remained at baseline levels throughout the condition with 0% *PND*.

Table 6
PWC Descriptive Statistics

Classroom	Baseline			I+R				DF				
	Data Points	Mean	SD	Data Points	Mean	SD	PND	Data Points	Mean	SD	PND to BL	PND to I+R
1	4	97.30	1.90	4	100.00	0.00	0%	4	94.00	4.00	0%	0%
2	6	91.30	6.80	5	90.80	8.40	0%	6	90.30	6.30	0%	0%
3	4	85.80	13.40	4	91.00	14.90	50%	5	91.40	16.10	60%	0%

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Percent of Work Completed by Classroom
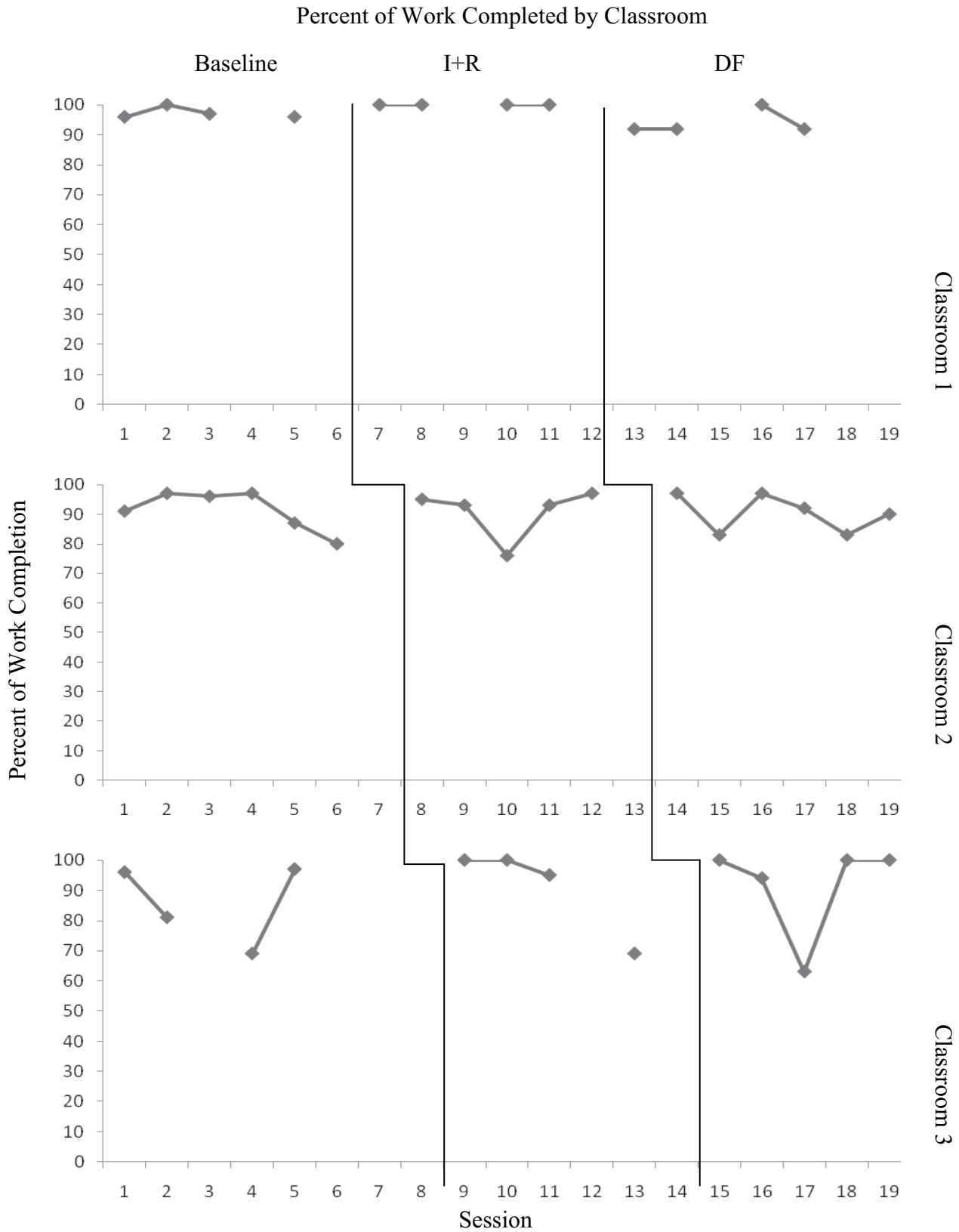
Figure 4: A multiple baseline graph of the I+R and DF conditions' effects on PWC by Class.

Classroom 2's baseline data were stable with a slight decreasing trend in data ($M =$ 91.30, $SD = 6.80$). The introduction of the I+R condition showed no change in level of PWC ($M = 90.80$, $SD = 8.40$). Data remained at baseline levels throughout the condition, with no observable trend in the data and 0% *PND*. No significant change in level of PWC ($M = 90.30$, $SD = 6.30$) is observed when the DF intervention is introduced. Data remained at baseline levels with a slight decreasing trend in data and 0% *PND* compared to I+R and baseline.

Baseline data for Classroom 3 were relatively stable with no observable trend in the data ($M = 85.80$, $SD = 13.40$). Data show no change in level of PWC ($M = 91.00$, $SD = 14.90$) when the I+R condition was introduced. There was a decreasing trend in data and moderate data overlap of 50%. Data remained at baseline levels throughout the condition. Onset of the DF intervention does not show significant change in level of PWC ($M = 91.40$), $SD = 16.10$) with data comparable to baseline performance and *PND* of 0% compared to I+R, and 60% compared to baseline.

Baseline data for Classroom 1 Student 1 were stable ($M = 100.00$, $SD = 0.00$). With the introduction of the I+R condition, there was no change in level of PWC ($M = 100.00$, $SD = 0.00$) and 0% *PND* (Table 7). Upon the implementation of the DF intervention, there was no significant change in level of PWC ($M = 100.00$, $SD = 0.00$) and 0% *PND*.

Table 7
PWC Descriptive Statistics of Individual Students

Classroom-Student	Baseline			I+R				DF				
	Data Points	Mean	SD	Data Points	Mean	SD	PND	Data Points	Mean	SD	PND to BL	PND to I+R
C1 – S1	4	100.00	0.00	4	100.00	3.00	0%	4	100.00	0.00	0%	0%
C1 – S2	4	100.00	0.00	4	100.00	0.00	0%	4	100.00	0.00	0%	0%
C2 – S1	6	94.50	13.50	5	93.40	14.80	0%	6	100.00	0.00	0%	0%
C2 – S2	6	75.00	41.80	5	93.40	14.80	0%	6	96.70	8.20	0%	0%
C3 – S1	4	45.80	41.70	4	68.80	47.30	0%	5	66.60	47.20	0%	0%
C3 – S2	4	87.50	25.00	4	100.00	0.00	0%	5	100.00	0.00	0%	0%

Percent of Work Completed by Individual Student

Figure 5: A multiple baseline graph of the I+R and DF conditions' effects on PWC by student.

Baseline data for Classroom 1 Student 2 were stable (M = 100.00, SD = 0.00). The introduction of the I+R condition did not lead to changes in level of PWC (M = 100.00, SD = 0.00, PND = 0%). Also, there was no significant change in level of PWC (M = 100.00, SD = 0.00, PND = 0%) upon the introduction of the DF condition.

Classroom 2 Student 1 baseline data were stable with a slight increasing trend in data (M = 94.50, SD = 13.50). There was no change in level of PWC (M = 93.40, SD = 14.80) at onset of I+R. Data remained comparable to baseline levels throughout the condition with 0% PND. Upon the implementation of the DF intervention, there was no obvious change in level of PWC (M = 100.00, SD = 0.00, PND = 0% as compared to I+R and baseline).

Baseline data for Classroom 2 Student 2 were variable with a decreasing trend in data (M = 75.00, SD = 41.80). The I+R condition showed no change in level of PWC (M = 93.40, SD = 14.80, PND = 0%). At implementation of the DF intervention, there was no significant change in level of PWC (M = 96.70, SD = 8.20, PND = 0% as compared to I+R and baseline).

Classroom 3 Student 1 showed baseline data that were variable with an increasing trend (M = 45.80, SD = 41.70). With the introduction of the I+R condition, there was no change in level of PWC (M = 68.80, SD = 47.30, PND = 0%). Introduction of the DF intervention showed no significant change in level of PWC (M = 66.60, SD = 47.20, PND = 0% as compared to I+R and baseline). Baseline data for Classroom 3 Student 2 were variable with an increasing trend in data (M = 87.50, SD = 25.00). I+R condition did not show a change in level of PWC (M = 100.00, SD = 0.00, PND = 0%). There was no significant change in level of PWC (M = 100.00, SD = 0.00, PND = 0% as compared to I+R and baseline) upon introduction of the DF intervention.

Overall, PWC data were not indicative of changes in performance across conditions for

both classrooms and individual students. PWC data showed high levels of baseline performance

for all classrooms and most referred students, and was observed to yield high percentages of

overlapping data points across conditions as a result.

 Social Validity Results

Teacher ratings of the I+R intervention can be found in Table 7, which displays the

ratings across the three participating teachers. Positive responses by teachers of the I+R

intervention showed that they felt the I+R condition did not result in negative side effects. This

is particularly important given the public evaluation aspect of the I+R condition. Teachers also

rated the I+R intervention as appropriate for a variety of children, and viewed the procedures as

consistent with interventions they have used previously. Teachers also rated I+R as 'fair' in

handling the identified problem. Teachers viewed the I+R intervention as 'reasonable' for the

identified problem. However, these ratings also show that teachers did not highly rate the I+R

intervention as acceptable for the identified problem. Other notable low responses showed that

teachers rated the I+R intervention as low in effectiveness, low in suggesting the intervention to

other teachers, low suitability for the problem, low likelihood of using the intervention again,

and low identifying the intervention as a 'good' way to handle the identified problem. Of

particular note was the teachers' rating for liking the procedures of the I+R intervention. This

rating indicates that overall the I+R intervention implementation in the classroom was not

desirable to teachers.

Table 8 also shows teacher ratings of the DF intervention. Notable high ratings showed

that teachers viewed the DF intervention as acceptable, effective, a suggestible intervention to

other teachers, low in negative side effects, having desirable procedures, and was a 'good way'

to handle the identified problem. However, teachers rated the DF intervention low in appropriate

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for a variety of children. Comparing these ratings with those of the I+R intervention, teachers appear to evaluate the DF intervention as more effective in changing desk organization than the I+R intervention. Teachers showed higher ratings for desirability of procedures used in the DF intervention over those used in I+R. This is particularly important when compared to the higher likelihood that teachers would suggest the DF intervention to other teachers, over the I+R intervention, despite rating it as low in appropriateness for a variety of children. It is important to note that teachers were not responsible for assessment of desks and delivery of reinforcement in the DF condition of this study.

The principal was also asked to rate both the I+R and DF interventions (Table 9). Principal responses were very similar overall to those given by the teachers. The principal rated the DF intervention as more effective and appropriate for the identified problem, as well as likelihood to suggest the intervention to other teachers, and desirability of procedures. It should be noted that the principal rated the severity of the problem behavior at a 5, indicating a slightly higher level of importance placed on desk organization as a target variable.

Table 8
Teacher Social Validity Ratings of the I+R and DF interventions

Question	I+R			DF		
	T1	T2	T3	T1	T2	T3
1. The XXX intervention was an acceptable intervention for the identified problem.	4	4	3	5	5	5
2. Most teachers would find the XXX intervention appropriate for problems in addition to the one described.	4	4	4	5	4	4
3. XXX intervention was effective in changing the identified problem.	4	4	3	6	6	5
4. I would suggest the XXX intervention to other teachers.	4	3	3	5	5	5
5. The problem was severe enough to warrant use of the XXX intervention.	4	4	4	3	4	4
6. Most teachers would find the XXX intervention suitable for the problem addressed.	3	3	3	5	5	4
7. I would be willing to use the XXX intervention again.	4	3	3	5	5	4
8. The XXX intervention did not result in negative side-effects for the students.	5	5	4	5	4	4
9. The XXX intervention would be appropriate for a variety of children.	5	4	4	4	4	3
10. The XXX intervention is consistent with other interventions I have used.	4	5	5	5	4	3
11. The XXX intervention was a fair way to handle the identified problem.	5	5	4	5	4	4
12. The XXX intervention was reasonable for the identified problem.	5	4	4	5	5	4
13. I liked the procedures used in the XXX intervention.	3	3	2	6	6	5
14. The XXX intervention was a good way to handle the identified problem.	4	4	3	6	6	5
15. Overall, the XXX intervention was beneficial for students.	4	3	3	5	5	4

Table 9
Principal Social Validity Ratings of the I+R and DF
interventions

Question	I+R	DF
1. The XXX intervention was an acceptable intervention for the identified problem.	4	6
2. Most teachers would find the XXX intervention appropriate for problems in addition to the one described.	4	5
3. XXX intervention was effective in changing the identified problem.	4	5
4. I would suggest the XXX intervention to other teachers.	3	5
5. The problem was severe enough to warrant use of the XXX intervention.	5	5
6. Most teachers would find the XXX intervention suitable for the problem addressed.	4	4
7. I would be willing to use the XXX intervention again.	4	5
8. The XXX intervention did not result in negative side-effects for the students.	5	5
9. The XXX intervention would be appropriate for a variety of children.	5	5
10. The XXX intervention is consistent with other interventions I have used.	5	5
11. The XXX intervention was a fair way to handle the identified problem.	5	5
12. The XXX intervention was reasonable for the identified problem.	5	5
13. I liked the procedures used in the XXX intervention.	4	6
14. The XXX intervention was a good way to handle the identified problem.	3	5
15. Overall, the XXX intervention was beneficial for students.	3	5

Discussion

The results of this study indicate that strategies used in the I+R and DF interventions were effective at increasing desk organization behavior in elementary age students. The onset of the I+R condition yielded immediate, observable changes in desk organization target variables for classrooms and most of the students who were more closely monitored based on teacher referral. However, data in the I+R condition often showed trends towards baseline levels of behavior, indicating changes in behavior did not maintain over time. The first research question of this study was, will the I+R intervention improve class-wide student desk organization and work completion behavior? These results show supportive evidence that the I+R intervention did lead to improved desk organization as evidenced by observable changes in both desk organization dependent variables across classrooms. Though I+R data showed improvement as compared to baseline at the onset of the intervention condition, this condition did not typically show trends in data indicative of continued improvement in desk organization performance. The I+R condition did not appear to impact work completion at the classroom level.

The second research question of this study was, will the I+R intervention improve the desk organization and work completion of students identified as being most in need of intervention? These results show that the I+R intervention improved desk organization behavior for the majority of individual students; both for PMC and ANT data. However, results show that I+R was not impactful for one referred student from Classroom 3. Trend lines for referred students mirrored data at the classroom level, and largely did not indicate improvement in desk organization behavior. The I+R condition did not impact work completion at the individual student level.

The third and fourth research questions targeted the effects of the DF intervention on desk organization and work completion at the classroom and individual student level. The implementation of the DF intervention showed immediate changes in desk organization behavior as measured by PMC and ANT and as compared to the I+R condition across classrooms. These results provide supportive evidence that the DF intervention effectively improved desk organization compared to the I+R intervention. Data during the I+R condition indicated that more intense intervention was needed to approach a criterion of PMC at 80% or more students. The DF intervention showed improved performance of PMC above 80% of students for Classrooms 1 and 2. The most notable support for the DF condition's improvement in desk organization behavior is the changes in trend observed throughout implementation. Trends across classrooms for both PMC and ANT data are indicative of continued improvement in desk organization behavior not observed in the I+R condition. DF led to improvements in PMC and ANT data for all referred students as well, further supporting its use with those students most in need of intervention and application as a Tier 1 intervention. Like the I+R intervention, the DF intervention did not impact work completion at the classroom level, nor for individual students. The PWC variable, overall, showed high levels of student performance during baseline observations and did not change across conditions for classrooms and referred students. Implications for these results and the use of work completion as a dependent variable are discussed further.

This study was the first to investigate strategies explicitly targeting the improvement of desk organization in elementary age students. However, there is an extensive body of literature supporting the use of positive reinforcement, modeling, and instruction to improve a variety of classroom behaviors. The results of this study are consistent with this previous body of research.

Both the I+R and DF conditions included these key intervention components and both led to improvements in students' desk organization.

Previous research identifies student organization as linked to student academic performance (Brophy, 1983; Evans et al., 2009) at various levels. Evans et al. (2009) showed that increased organization in middle school students correlated with improved grades, and postulated that improvements were likely due to the increases in work completion of high assignment subject areas. Though this study found the interventions employed to have positive effects on desk organization behavior, the interventions did not appear to impact work completion. However, this may be attributed to limitations associated with using work completion as the sole measure of academic performance. PWC monitored a permanent product as recorded by the teacher(s), and was not sensitive to potential delays in turned in assignments or extended time given to students by their teachers. PWC also monitored work completion via the number of turned in assignments, which is likely lower for primary students than high school students, and lower still for those students of younger age within primary grades. A more sensitive measure observed directly would likely better assess the impact of desk organization on academic performance, such as time spent in instruction and/or time spent in transition. Further research is needed to investigate the correlation and/or causal relationship of desk organization as a target variable linked to improvements in academic performance.

Onset of the I+R intervention showed nearly uniform changes in level across classrooms and most individually-monitored students, though visually trends indicated that observed change was not likely to maintain student performance. It should be noted that instruction of desk organization behavior during the I+R condition, though similar in composition and use of intensive-explicit instruction, did not repeat teacher instruction delivered on the first day of

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intervention as was the case during the DF condition, in which students were read the DF each day. The immediacy of observed changes at onset of the I+R condition indicate that students adequately obtained material and the new behavior of organized desks. This is most notable in the case of referred students, where five of six students indicated changes representative of the classroom level as well. It would also stand to reason that the DF condition benefitted from the instruction to desk organization behavior that occurred during the I+R condition, which may be reflected in the results, particularly the immediacy of observed impact. Though classrooms and individual students both reflected significant changes in student performance, PMC did not approach 80% for any of the three classrooms, and trends in data indicated behaviors would not maintain overtime, thus more intervention was needed and the DF condition was implemented.

An important variable that must be considered when evaluating the results of this study is the potency of effects on behavior as a result of observed reinforcement of a group member, versus direct reinforcement to an individual. Positive reinforcement has been shown to increase human behavior across age and cognitive ability (Glenn, Ellis, & Greenspoon, 1992; Skinner, 1966). In particular, continuous reinforcement has been shown to be effective at establishing new, previously unlearned, behaviors (Cooper et al., 2007). The DF intervention utilized an independent group-oriented contingency, such that it allowed for any student to obtain the potential reinforcer directly, each day. The I+R condition held the same potential if implemented on a long enough time-line (i.e. enough days to allow for each student's desk to have been assessed by the teacher). In this study, the I+R intervention was implemented for five days, such that only a potential maximum of five students would have directly received reinforcement, leaving a large majority evaluated based on the observation of reinforcement to a group member. Modeling of human behavior and observation of others' behavior has been shown to impact

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existing behavior, as well as establish previously unlearned behaviors (Bandura, 1971). Both the I+R and DF conditions benefitted from potential intrinsic motivation (i.e. students feeling positively for their peer having received reinforcement; Bandura, 1997), but the I+R condition did not benefit from as many students receiving direct reinforcement as occurred in the DF condition, which is a likely contributing factor to the observed differences in performance between conditions (Cooper et al., 2007).

A related factor is the classification of desk organization as a new behavior for students. No formal efforts to obtain information about teacher strategies to achieve student desk organization were conducted for this study. It is likely however given the teachers' interest in desk organization that previous efforts were employed and the effectiveness of those efforts are evident in the baseline data collected. As such, desk organization was likely not a new behavior but rather a behavior further addressed in the I+R and DF conditions. It is likely the DF condition offered a more unique approach to teaching desk organization. The I+R condition was designed to reflect standard teaching or direct instruction with the incorporation of reinforcement.

In addition to a streamlined reinforcement schedule across conditions, another variable to consider for the DF condition is the impact of the DF story itself. The effect of the story itself is observable for the initial data point at onset of the DF condition for each classroom. The first data point for each introduction of the DF condition represents an isolated point of performance. The initial data point for each DF condition represents the effect of a social script alone, without the impact of reinforcement on student behavior. Students were assessed for organized desk behavior after school hours, and thus this initial point was evaluated after the 'story' of the Desk Fairy had been read, and before delivery of reinforcement by researchers; an element of the

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intervention not found in the I+R condition. This point, as discussed previous, shows an immediate and significant change in student performance. It should also be noted that the story of the Desk Fairy does imply reinforcement, as similar to most pop-culture notions of 'the tooth fairy,' but does not imply a continuous schedule of reinforcement in any way. Thus, it could be hypothesized that students engaged in more behaviors of desk organization without knowing if reinforcement was guaranteed for any student; whereas students knew at least one student in the classroom would be assessed and eligible for reinforcement in the I+R condition.

This study did not compare the quality of the content of the teacher instruction included in the I+R condition to the social script content of the DF. The method of instruction via the social script in the DF condition may have been impacted by the instruction delivered in the I+R condition. It is possible that the DF condition benefitted from the exposure to organized desk behaviors and instruction to criteria, resulting in increased performance in students. This exposure would have a greater impact if it were the first exposure for students to desk organization. However, it is unlikely this was their very first exposure in their educational experiences to desk organization.   None the less, the I+R condition impairs the ability of researchers to assess for the perceived impact of the DF condition as an isolated strategy on desk organization behavior.

The DF instructional model contained more salient research-supported instructional features than were utilized in the I+R condition. Such features included a social script format, and stronger, more frequent verbal and visual prompts. The visual prompts of desk organization contained more pictures, color, and contextual variables illustrating the target behavior.   The script format used in the DF condition also has provided more contextual information surrounding the desirability and social validity of the target behavior.

Another contributing factor to performance could be the perceptions of ease of intervention implementation by teachers involved in the study. Ratings of the intervention conditions may have been impacted if teachers had been responsible for full implementation. The principal's rating for desirability of procedures was also likely to have been impacted by the level of responsibility for implementation placed on the teachers, and may have changed given increased/decreased teacher participation in assessment and reinforcement. When evaluating appropriateness for a variety of children, it is possible that teachers viewed the increased verbiage of the DF intervention as less appropriate for use with students with lower verbal skills, or the content within the DF 'story' and use of a fairy construct as impacting generalization to older students, thus impeding effectiveness. It is also important to note that teacher ratings of the severity of the problem were both above 3, but were not high relative to perceptions of other interventional aspects assessed in the protocol. Though considered the more efficient and less pervasive intervention by design, teachers rated the I+R condition as significantly less desirable for use in the classroom compared to the DF condition. The I+R condition, though utilizing a less frequent reinforcement schedule and more efficient, quick prompts for organized desk behavior, required significantly more time for training and implementation than the DF condition. Teachers were required to undergo a 20-30 minute training session for delivery of instruction, desk assessment, and reinforcement procedures. This then required teachers to select students for assessment, assess their desk, and then reinforce the student if applicable. The DF condition was significantly less strenuous on participating teachers because their only task was to read the story to students, and not participate in any requirements for assessment and delivery of reinforcement. Both conditions required that teachers email and notate their participation daily, as well as be subject to observations for adherence. It is likely that teacher perceptions of

intervention desirability for the DF condition would be significantly impacted if required to implement the assessment and reinforcement delivery of this condition. Teachers may have rated the DF condition as less desirable if required to fully implement the DF condition without the help of the researchers. It should be noted, however; that anecdotally teachers commented on the benefit of anonymity in the DF condition. In the I+R condition teachers reported that they found being asked questions and identified as the responsible party for denial of reinforcement to those desks not meeting organized desk criteria as aversive. In the DF condition, 'The Desk Fairy' was identified as the entity responsible for assessment and reinforcement was delivered externally by researchers. This potentially served to allow teachers to be negatively reinforced by avoiding negative associations from students due to increased validity to deny answering questions relative to performance from students. This element of anonymity would likely remain constant even if teachers had been responsible for aspects, or the entirety, of assessment and reinforcement in the DF condition.

Another possible factor that could have impacted student performance would be the rewards selected for use in the study. Anecdotally it was observed that students showed varying preferences for different tangibles used in both the I+R and DF intervention conditions. Stickers were used in both the I+R and DF conditions and were reported by teachers to be the least desirable prizes awarded. Teachers reported that other rewards, such as friendship bracelets and bookmarks, were noticeably preferable, relative to other selected prizes. Prizes were selected on the basis of minimal distraction to classroom functioning, assumed teacher acceptability, price, and assumed student desirability. On these bases, rewards were not edible, did not make sound, or roll or bounce easily. As consistent with previous research, it is highly likely that had more preferable rewards been selected on the basis of student desirability, this would have resulted in

improved performance (Cooper et al., 2007) in organized desk behavior regardless of condition.

Implications for Practice

The DF condition incorporated several teaching principles shown to have an impact on student learning (visual indicators, repetition to instruction, student attention), this condition was also coupled with more direct reinforcement to students than was used in the I+R condition. It is unknown if the Desk Fairy as a construct would be as appealing to older grades, but appears successful in increasing student buy-in in younger primary grades. This, however; was not assessed for social acceptability in participating students, and is conjecture.

Teachers may rate the DF condition less favorably if required to administer full implementation of the DF condition procedures. Thus, when selecting an intervention, as supported in previous research, teacher acceptability, amount of implementation responsibility, and impact should be considered for maintenance and continued use of intervention protocol(s) in the classroom.

Limitations and Future Research

First, in this study, teachers were asked to identify desks of students in most need of intervention in order for researchers to track the effectiveness of a Tier 1, or large group, intervention on the highest needs students. The selection process for referred students was not standardized and was subject to teacher interpretation and ability to nominate those students in most need of intervention. It appears that teachers were mostly effective at nominating students for progress monitoring, though in some cases, such as Classroom 1 Student 1, baseline data did not indicate this student was in more need of intervention than other students in the same classroom. A standardized format for identifying those students in most need of intervention for desk organization would improve the ability to compare data between individual students.

Students identified as having both messy desks and co-occurring performance deficits might improve efficiency and ease of implementation for teachers, but outcomes for students as well.

Second, the change of increased rate of direct reinforcement from the I+R condition to the DF condition made evaluating the impact of the teacher instruction model of instructing organized desk behavior to the DF social script model of instruction more difficult. Establishing a set schedule of reinforcement constant between conditions would have improved the ability for researchers to evaluate the differing methods of instruction used in the intervention conditions of the study. Similarly, holding the method of instruction constant across conditions would have allowed for comparisons between the different reinforcement schedules. Given teacher perceptions of responsibility for intervention implementation and need for efficiency, future research investigating schedules of reinforcement and fading procedures that maintain changes to desk organization behavior should be considered. An improved criterion for student selection may similarly serve this same purpose of increasing efficiency for teacher use.

The criterion of two or fewer tallies for an organized desk and eligibility for reinforcement may have been too strict. These criteria did not allow for those students organizing loose materials in their desk to be eligible for reinforcement, and thus be represented in the data as achieving an organized desk. An unanticipated improvement observed during the intervention conditions was what appeared to be the arrangement of loose materials such as erasers or pencils in the desk. These items were tallied due to being 'loose' in the desk though organization within the desk was evident. Thus, PMC data was the most impacted by this strict criterion. It is likely that more desks, including some of the individually monitored students, would have been observed to achieve criteria for an organized desk during baseline and the I+R and DF conditions if neatly organized items had not been tallied. The extent to which the change

in criteria regarding organized loose items would have impacted the results for students

achieving PMC is unknown. Review of the data obtained indicates a greater margin for

improvement in the I+R condition compared to the DF condition, giving rise to question the need

for the DF intervention at all, potentially, had the I+R condition showed student performance

above 80% for PMC given a change in criteria. The DF condition already showed high levels of

performance in the PMC variable, with some classrooms already achieving and/or approaching

100% of students. The results obtained for the DF condition limit the potential impact of altered

criteria due to the ceiling effect observed. Less strict criteria for an organized desk would likely

further support the DF condition as impactful to desk organization behavior as a Tier 1

intervention.

This change in criteria may have resulted in fewer tallies and improved performance of

the ANT variable as well. However, there was no means for determining across conditions

which loose items were neatly organized and which were in disarray. As a result, the criteria

were maintained across all conditions. The data reveal improvement in desk organization for

both the I+R and DF conditions. A change in criteria may have resulted in further improvement;

however the actual extent of the impact on the data is unknown. An associated effect of altered

criteria for desk organization may be related to exposure of students to reinforcement. More

students may have experienced reinforcement and more students may have observed more

classmates receive reinforcement. These experiences with reinforcement may have strengthened

students' efforts to achieve an organized desk to obtain reinforcement. That is they may have

perceiving reinforcement as more attainable thus worked more diligently to obtain it. Similarly,

a simplified format of desk assessment by teachers may also improve teachers' perceptions of

both interventions.

Another possible limitation of the study is the measure of academic performance selected. It is unclear if the intervention conditions failed to effect work completion or if this dependent variable was not sensitive enough to change. It was hypothesized that work completion would likely improve as organized desk behavior increased, but baseline levels of performance in PWC indicated little to no need for intervention across classrooms, as well as in individually referred students. Thus, students thought to be in most need for intervention for desk organization did not indicate a need for intervention relative to work completed in the classroom, along with their higher performing classmates. It is possible that work completion as a dependent variable was not adequate given the grades used for observation in this study. It would stand to reason that 1st and 2nd grade students would not be subject to the same number of assignments as secondary students, and thus the impact of improved desk organization on academic performance may be better assessed longitudinally for students exposed to interventions in primary grades. However, multiple data points for PWC were assessed with only one assignment in any core content subject due for that observation. It is unknown if secondary students would have substantially more assignments required for daily or weekly turn-in that adequately increased the variable of PWC to be sensitive enough for observable change from baseline to an intervention condition. The age of students participating in this study should also be considered, along with the climate of typical primary grade classrooms. It is possible that teachers of primary students may be more prone to help students finish assignments or complete work left at home than teachers of secondary students. It is also more likely that primary grade teachers are more likely to provide school materials necessary to complete assignments if forgotten or lost by students. Similarly, primary grade classrooms are also more likely to provide access to school materials than secondary classrooms, such as writing utensils, books, or

papers. Secondary students are also more likely to require materials not found in primary grade

classrooms such as graphing calculators or various computer software.   Future research is

needed to assess the impact of desk organization and other areas of student, teacher, and

classroom organization on academic performance. Selection of a sensitive dependent variable

for tracking change in academic performance should be prioritized when doing so. Some

potential variables to consider could be time on task, time in transition, time spent in instruction,

and/or tardiness to class (for students with self-guided class transitions).

Reinforcer selection is another potential limitation of this study. As noted previously,

teachers reported varying levels of student preference for various tangible rewards selected for

this study; namely rewards such as stickers were seen as having low desirability for students,

while rewards such as friendship bracelets and bookmarks were seen as having high desirability.

It is likely that on a given day's observation, selection of rewards for the student(s) exhibiting

organized desk criteria would have impacted the following day's performance. An example

might be that that an observation following the use of stickers as a reward would show

potentially a smaller increase, or even possibly a decrease in desk organization behavior due to

student assessment of the availability of a more preferred reward; which in this case would be

any number of classroom behaviors incorporating the lack of engaging in organizational

behavior as an escape function (i.e., homework completion, studying, socializing, or various off-

task behaviors). Conversely, organized desk behavior could have been increased on days

following the distribution of rewards such as the bookmarks or bracelets that were reinforcing to

students. Future research incorporating the use of these or other interventions with tangible

rewards would benefit from more experimental control for student desirability of rewards. One

potential solution could be the use of a short preference assessment before the introduction of an

intervention condition, in which students rate a list of potential reinforcers on a likert-scale.

Researchers could then choose the top ranked rewards available for use in the study. Similarly a

preference assessment incorporating teacher ratings of identified rewards may potentially teacher

buy-in if researchers can avoid distributing prizes viewed as undesirable in the classroom.

Conclusions

Results from this study indicate that both the I+R and DF interventions improved desk

organization behavior above baseline levels of performance. The potential impact of the I+R

condition on desk organization behavior was limited by criteria for an organized desk and should

be further investigated using a change in criteria, as well as varying reinforcement schedules. It

is likely that a change in criteria, or even measurement of desk organization that reflects a

simplified criteria taking into account organized loose materials, would better represent the

impact of interventions targeting desk organization on PMC and increase the ease of

implementation for teachers. The DF intervention, too, should be further investigated using

varying reinforcement schedules to evaluate efficiency and ease of implementation for teachers.

At present, results of this study would support the use of the I+R and DF interventions in

younger primary students for those teachers wanting to improve student desk organization. It is

likely that both interventions, or modified versions of either intervention, could be successfully

applied to improve desk organization from a multi-tiered perspective in elementary classrooms.

More research establishing the validity of desk organization and other aspects of student

organization as improving student academic performance is pivotal. Results from this study

draw into question the validity of desk organization as improving academic performance in the

form of work completion. While the construct of the 'Desk Fairy' may prove difficult for

implementation with older students, the aspects of the intervention (i.e. positive reinforcement,

modeling, script, and/or imaginary construct) are still impactful across age and work completion may be found to be a more suitable and sensitive dependent variable in secondary students. Other dependent variables pivotal to academic performance, such as time spent in instruction or time spent in transition, may prove to be better suited as measures for interventions targeting student or desk organization. Further research may indicate that desk organization is not significant in improving academic performance in students, and thus other aspects of student organization should be researched as well.

References

Atkins, M. S., Pelham, W. E., & Licht, M. H. (1985). A Comparison of Objective Classroom Measures and Teacher Ratings of Attention Deficit Disorder. *Journal of Abnormal Child Psychology, 13(1)*, 155-167.

Atkins, M. S., Pelham, W. E., & Licht, M. H. (1989). The Differential Validity of Teacher Ratings of Inattention/Overactivity and Aggression. *Journal of Abnormal Child Psychology, 17(4)*, 423-435.

Bandura. A. (1971). *Social learning theory.* New York: General Leaming Press.

Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman: New York.

Barkley, R. A. (1990). *Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment.* New York: Guilford.

Bartko, Todd (2005) The ABCs of engagement in out-of-school-time programs. New Directions For Youth Development, No. 105. doi: 10.1002/yd.110

Batsche, G., Elliott, J., Graden, J., Grimes, J., Kovaleski, J., Prasse, D., et al. (2005). *Response to intervention: Policy considerations and implementation.* Alexandria, VA: National Association of State Directors of Special Education.

Brophy, J. E. (1983). Classroom Organization and Management. *The Elementary School Journal, 83 (4)*, 264-285.

Brophy, J. E., & Good, T. L. (1986). "Teacher Behavior and Student Achievement." In Wittock, M.C. (Ed) *Handbook of Research on Teaching.* New York: Macmillan

Burke, R. V., Kuhn, B. R., & Peterson, J. L. (2004) A "Storybook" Ending to Children's Bedtime Problems – The Use of a Rewarding Social Story to Reduce Bedtime Resistance

and Frequent Night Waking. *Journal of Pediatric Psychology, 29 (5),* 389-396. doi:

10.1093/jpepsy/jsh042

Cameron, C. E., Connor, C. M., & Morrison, F. J. (2005). Effects of variation in teacher

organization on classroom functioning. *Journal of School Psychology, 43,* 61–85.

doi:10.1016/j.jsp.2004.12.002

Carr, G., Dunlap, R. H., Horner, R. H., Koegel, R. L., Turnbull, A.P., Sailor, W., Anderson, J.

L., Albin, R. W., Koegel, L. K., & Fox, L. (2002). Positive Behavior Supports:

Evolution of an Applied Science. *Journal of Positive Behavior Interventions, 4 (1)*, 4-16.

doi: 10.1177/109830070200400102

Cooper, J.O., Heron, T.E., and Heward, W.L. (2007). Applied behavior analysis (2nd ed.). New

York: Prentice-Hall.

Evans, S.W., Schultz, B.K., White, L.C., Brady, C., Sibley, M.H., & VanEck, K. (2009). A

school-based organization intervention for young adolescents with ADHD. *School

Mental Health, 1*, 78-88. doi: 10.1007/s12310-009-9009-6

Fantuzzo, J. W., & Polite, K. (1990). School Based, Behavioral Self-Management: A Review

and Analysis. *School Psychology Quarterly, 5 (3),* 180-198.

Fox, L. & Little, N. (2001). Starting early: School-wide behavior support in a community

preschool. *Journal of Positive Behavior Interventions, 3*, 251-254. doi:

10.1177/109830070100300406

Fry, R. (1996). *Get Organized*. Franklin Lakes, NJ: Career Press.

Gary, L. 1996. Some perspectives on drug abuse prevention through family interventions: The

case of African-Americans. Unpublished paper presented at NIDA as Family Intervention

Research Symposium, January 25-26, 1996, Gaithersburg, MD.

Glenn, S.S., Ellis, J., & Greenspoon, J. (1992). On the revolutionary nature of the operant as a unit of behavioral selection. *American Psychologist, 47*, 1329-1336.

Gray, C., & Garand, J. (1993). Social Stories: Improving Reponses of Students with Autism with Accurate Social Information. *Focus on Autistic Behavior, 8*, 1-10.

Gray, C. (2000). The New Social Story Book: Illustrated Edition (second edition). Future Horizons.

Horner, R. H. (1994). Functional assessment: Contributions and future directions. *Journal of Applied Behavior Analysis*, *27*, 401-404.

Horner, R. H. (2000). Positive Behavior Supports. *Focus on Autism Other Developmental Disabilities, 15 (2),* 97-105. doi: 10.1177/108835760001500205

Kazdin, A. E. (1982) *Single case research designs: Methods for clinical and applied settings.* New York: Oxford University Press.

Kern, L., Ringdahl, J. E., Hilt, A., & Sterling-Turner, H. E. (2001). Linking Self-Management Procedures to Functional Analysis Results. *Behavioral Disorders, 26 (3)*, 214-226.

Kershner,J.R.(1990).Self-concept and IQ as predictors of remedial success in children with learning disabilities. *Journal of Learning Disabilities, 23*, 368-374.

Levine, M. (2001). *Educational care: A system for understanding and helping children with learning differences at home and in school* (Second ed.). Cambridge, MA: Educators Publishing Service.

Lewis, T., & Sugai, G. (1999). Effective behavior support: A systems approach to proactive schoolwide management. *Focus on Exceptional Children, 31*(6), 1-24.

Lyon, G.R., Fletcher, J.M., Shaywitz, S.E., Shaywitz, B.A., Torgesen, J.K.,Wood, F.B., Schulte, A.,& Olson,R. (2001). Rethinking learning disabilities. In C.E. Finn, C. R.Hokanson, &

A.J. Rotherham (Eds.), *Rethinking special education for a new century* (pp.259-287).Washington, DC: Thomas B. Fordham Foundation.

Matson, J.. & Minshawi, N. (2006). *Early intervention for autism spectrum disorders: A critical analysis.* Kidlington, Oxford, England: Elsevier.

Mayer, G. (1995). Preventing antisocial behavior in the schools. *Journal of Applied Behavio r Analysis*, *28*, 467-478.

Mayer, G. R. & B. Sulzer-Azeroff (1990). Interventions for vandalism. Interventions for achievement and behavior problems. G. Stoner, M. K. Shinn and H. M. Walker. Washington, DC, National Association of School Psychologists Monograph**:** 559-580.

Mitchem, K. J., & Young, K. R. (2001). Adapting self-management programs for classwide use: Acceptability, feasibility, and effectiveness. *Remedial and Special Education, 22,* 75-88. doi: 10.1177/074193250102200202

Paine, S. C., Radicchi, J., Rosellini, L. C., Deutchman, L., & Darch, C. B. (1983). *Structuring your classroom for academic success.* Champaign, IL: Research Press.

Peterson, J. L., & Peterson, M. (2003). *The Sleep Fairy*. Omaha, NE: Behav'n Kids Press.

Ruef, M.B., Higgins, C., Glaeser, B.J.C., & Patnode, M. (1998). Positive Behavioral Support: Strategies for teachers. *Intervention in School and Clinic*, 34(1), 21-32.

Scruggs, T. E., Mastropieri, M. A., & Casto, G. (1987). The quantitative synthesis of single-subject research: Methodology and validation. *Remedial and Special Education, 8*, 24-33.

Sedita, J. (1995). *A Call for More Study Skills Instruction*. Orlando, FL: International Conference of the Learning Disabilities Association.

Shea, V. (2004). A perspective on the research literature related to early intensive behavioral

intervention (Lovaas) for young children with autism. *Autism.* S(4). 349-367. doi: 10.1177/1362361304047223

Sheridan, S.M., & Steck, M. (1995). Acceptability of conjoint behavioral consultation: A nation survey of school psychologists. *School Psychology Review, 24*, 633-647.

Skinner, B.F. (1966). Operant Behavior. In W.K. Honig (Ed.) *Operant behavior: Areas of research and application* (pp.12-32) New York: Appleton-Century-Crofts.

Snyder, M.C., Bambara, L.M. (1997). Teaching Secondary Students with Learning Disabilities to Self-Manage Classroom Survival Skills. *Journal of Learning Disabilities, 30*, 534-543.

Stormont, M., Lewis, T.J., & Beckner, R. (2005). Positive behavior support systems: Applying key features in preschool settings. *Teaching Exceptional Children, 37 (July/August)*, 42-49.

Sugai, G., Horner, R.H., & Gresham, F.M. (2002). Behaviorally effective school environments. In M. Shinn, H. Walker, & **G.** Stoner (Eds.), *Interventions for academic and behavior problems II: Preventive and remedial approaches* (2nd ed., pp. 315-350). Bethesda, MD: National Association of School Psychologists.

Sugai, G., Lewis-Palmer, T., Todd, A., & Horner, R. H. (2001). *Schoolwide evaluation tool* . Eugene: University of Oregon, Educational and Community Supports. doi: 10.1177/10983007040060010201

Taylor, B. M., Pearson, P.D., Clark, K., & Walpole, S. (2000). Effective Schools and Accomplished Teachers: Lessons About Primary-Grade Reading Instruction in Low-Income Schools. *The Elementary School Journal, 101 (2),* 121-165.

Thiemann, K. S., & Goldstein, H. (2001). Social Stories, Written Text Cues, and Video

    Feedback: Effects on Social Communication of Children with Autism. *Journal of*

    Applied Behavior Analysis, 34, 425-446. doi: 10.1901/jaba.2001.34-425.

Thomas, A. (1993). *Study Skills.* (Report No. ISSN-0095-6694). Eugene, OR: Oregon School

    Study Council.

Waldron, K. A. (1996). *Introduction to a Special Education: The Inclusive Classroom.* Albany,

    NY: Delmar.

Weinberger, A., Ertl, B., Fischer, F., & Mandl, H. (2005). Epistemic and social scripts in

    computer-supported collaborative learning. *Instructional Science, 33*(1), 1-30. doi:

    10.1007/s11251-004-2322-4

Wenz-Gross, M., & Siperstein, G.N. (1998). Students with Learning Problems at Risk in Middle

    School: Stress, Social Support, and Adjustment. *Exceptional Children, 65 (1)*, 91-100.

Williamson, R. D. (1997). Help me organize. *Intervention in School and Clinic, 33* (1), 36-40.

Zigmond, N., Kerr, M.M., & Schaeffer, A. (1988). Behavior Patterns of Learning Disabled and

    Non-Learning Disabled Adolescents in High School Academic Classes. *Remedial and*

    Special Education, 9, 6-11.

Appendix A

Name:_____

Date:_____

Classroom:_____

Desk 1
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 2
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 3
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 4
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 5
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 6
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 7
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 8
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Desk 9
B/G
_____-Books and Folders piled neatly to one side
_____-Papers neatly stacked with books or in a folder
_____-All pens and pencils in the pencil box
_____-All markers, colored pencils, and/or crayons   inside their box, or the pencil box
_____-No trash in the desk
_____-No trash or materials on the floor or   surrounding the desk
_____-No loose items in the desk
_____-All miscellaneous school materials in the pencil   box (glue stick, scissors, erasers, etc.)
_____-Chair is on top of the desk, or pushed under the   desk
_____-Desk is within 6 inches of the designated   spot/pod
                        Rating_____

Appendix B

Teaching Organized Desk Behavior

1. Select a time during the day on _____ to introduce what makes an organized desk to your students. (Introduction is attached.)
   a. You teach organized desk behavior to the students the first day, then give a reminder the following days until notified by Connie / Wes to stop.
   b. We anticipate you will remind and reinforce organized desk behavior for approximately 5 days.
   c. You do not need to remind students, or reinforce a desk, at the same time each day.
2. *Make sure you have your students' attention.*
3. *Write these 6 behaviors legibly on any surface that will remain in the students' view for approximately 5 days:*

   1. Books, folders, and papers stacked neatly to one side
   2. All pens, pencils, crayons, and markers in their box or your pencil box
   3. No trash in or around the desk
   4. All loose school materials in the pencil box (glue stick, scissors, erasers, etc.)
   5. Chair on top of the desk, or pushed under the desk
   6. Desk in the right spot
4. *Arrange the seating so that all students are seated where you and the rules are in view and listening distance.*
   - *You could have all students sitting on the carpet in front of you.*
   - *You could have all students remain at their desk, but place yourself in the front of the room.*
   - *Make sure all students can hear you with the seating arrangement you chose; ask if everyone can hear you.*
5. Announce a new topic to the students as you typically would in your classroom and say: "I'm going to start looking for students with organized desks. Each day I will select one desk to check for organization. If the desk I choose is organized, that student will get a surprise. You won't know when in the day I will choose a desk, or whose desk I will choose, so do your best to be prepared. When I look at a desk for organization, here's what I'm looking for…"
   - Read aloud the 6 behaviors that make an organized desk that you have written
   - Display the organized and disorganized pictures of desks given to you by Connie/Wes, and point out the behaviors you see in each
   - Speak with a clear tone of voice and enunciate so that all children can hear you.
   - Teaching organized desk behavior should last approximately 3-7 minutes
6. *After finishing teaching organized desk behavior for <u>the very first time only</u>, allow your students 10 minutes of free time.
   - Label the 10 minutes as Free Time, and <u>not</u> as time to clean their desks for the Desk Fairy.
   - Do not deliberately allow a 10 minute break for cleaning their desks the rest of the time using this intervention. Free time should be used at your discretion, but not as part of the intervention after the first day.
7. Remind students each day that you will be choosing a desk to check for organization and verbally and visually direct them to the 6 behaviors of an organized desk.
8. After teaching or reminding students of organized desk behavior each day, wait at least an hour and then select a desk at random to assess for desk organization.
   a. Let students know you are selecting a random desk to check and the results.
   b. You may use any random process you choose (i.e. name from a hat, blindly pointing at a name on a roster, etc.), but please make sure the selection is completely random.
   c. Assess the desk using the tally system described to you by Wes
   d. If the desk has 2 tallies or less, place a reinforcer you selected from those given to you by Wes, and place it on top of their desk.

9. After teaching or reminding students of organized desk behavior, record the time next to the date of the teaching/reminder on the schedule given to you by the research team (attached to this page).
10. After assessing a desk for organized desk behavior, record the time of your assessment, results, and if the student was give a reinforcer on the schedule given to you by the research team (attached to this page).
11. After recording the time you taught organized desk behavior to your students, and the results of your desk assessment, email Connie to report results for that day.
    - Your email should contain: your last name, time of day you taught to your students, time of day you assessed a random desk, and if a reinforcer was given.
    - Email the Research team at: Connie.Schnoes@boystown.org

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Reminders:
- *Do NOT prompt your students to put away surprises* or trash that result from surprises; the reminder of organized desk behavior is meant to serve as this prompt. Organize and run your classroom just like normal.
- The Research Team will notify you when you should stop reminding students of organized desk behavior, and reinforcing random desks with surprises. This is normal and is part of the intervention selection process. You will be notified when you should resume delivering this intervention, or begin a different intervention for desk organization.

Appendix C
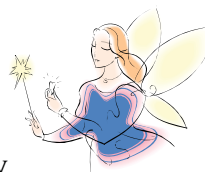
The Desk Fairy

1. Select a time during the day on _____ to introduce and read the Desk Fairy book to your students. (Introduction is attached.)
    a. You will read the Desk Fairy to the students daily until notified by Connie / Wes to read it less frequently.
    b. We anticipate you will read it daily for one week, although you may do so longer.
    c. You do not need to read it at the same time each day.
2. *Make sure you have your students' attention.*
3. *Arrange the seating so that all students are seated where you and "The Desk Fairy" book are in view and listening distance.*
    - *You could have all students sitting on the carpet in front of you.*
    - *You could have all students remain at their desk, but place yourself in the front of the room.*
    - *Make sure all students can hear you with the seating arrangement you chose; ask if everyone can hear you.*
4. Read "The Desk Fairy" book in the same manner you read to your students for a typical book reading.
    - Speak with a clear tone of voice and enunciate so that all children can hear you.
    - Use excitement and other emotions while reading
    - Turn each page slowly and show it to the students
    - Point out positive and negative attributes of desks or student behavior pictured in the book
    - Reading the book should last approximately 5-10 minutes
5. *After finishing reading "The Desk Fairy" for the very first time only, allow your students 10 minutes of free time.
    - Label the 10 minutes as Free Time, and not as time to clean their desks for the Desk Fairy.
    - Do not deliberately allow a 10 minute break for cleaning their desks the rest of the time using this intervention. Free time should be used at your discretion, but not as part of the intervention after the first day.
    - Read "The Desk Fairy" every day until notified by Connie / Wes.
    - Be sure to continue using the reading skills you used the first time reading "The Desk Fairy."
    - Connie / Wes will be contacting different teachers at different times to begin and end reading the book to a class.
6. After reading "The Desk Fairy", record the time next to the date of the reading on the reading schedule given to you by the research team (attached to this page).
7. After recording the time you read the Desk Fairy to your students email Connie to report reading the story that day.
    - Your email should contain: your last name, and time of day you read the book to your students.
    - Email the Research team at: Connie.Schnoes@boystown.org

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Reminders:
- *Do NOT prompt your students to put away surprises* or trash that result from surprises; the reading of "The Desk Fairy" is meant to serve as this prompt. Organize and run your classroom just like normal.
- The Research Team will notify you when you should momentarily stop reading "The Desk Fairy" book all together, and reinforcement via the surprises will momentarily stop as well. This is normal and is part of the intervention. You will be notified when you should potentially return to reading the book and reinforcement via surprises will resume.

Appendix D

TEACHER INTERVENTION RATING PROFILE Please rate the Desk Fairy intervention along the following dimensions. Please click/check the box that best describes your agreement or disagreement with each statement.						
	1 - Strongly Disagree	2 - Disagree	3 - Disagree Slightly	4 - Slightly Agree	5- Agree	6- Strongly Agree
1. The Desk Fairy was an acceptable intervention for the identified problem.	☐	☐	☐	☐	☐	☐
2. Most teachers would find the Desk Fairy intervention appropriate for problems in addition to the one described.	☐	☐	☐	☐	☐	☐
3. The Desk Fairy intervention was effective in changing the identified problem.	☐	☐	☐	☐	☐	☐
4. I would suggest the Desk Fairy intervention to other teachers.	☐	☐	☐	☐	☐	☐
5. The problem was severe enough to warrant use of the Desk Fairy intervention.	☐	☐	☐	☐	☐	☐
6. Most teachers would find the Desk Fairy intervention suitable for the problem addressed.	☐	☐	☐	☐	☐	☐
7. I would be willing to use the Desk Fairy intervention again.	☐	☐	☐	☐	☐	☐
8. The Desk Fairy intervention did not result in negative side-effects for the students.	☐	☐	☐	☐	☐	☐
9. The Desk Fairy intervention would be appropriate for a variety of children.	☐	☐	☐	☐	☐	☐
10. The Desk Fairy intervention is consistent with other interventions I have used.	☐	☐	☐	☐	☐	☐
11. The Desk Fairy intervention was a fair way to handle the identified problem.	☐	☐	☐	☐	☐	☐
12. The Desk Fairy intervention was reasonable for the identified problem.	☐	☐	☐	☐	☐	☐
13. I liked the procedures used in the Desk Fairy intervention.	☐	☐	☐	☐	☐	☐
14. The Desk Fairy intervention was a good way to handle the identified problem.	☐	☐	☐	☐	☐	☐
15. Overall, the Desk Fairy intervention was beneficial for students.	☐	☐	☐	☐	☐	☐