SELF-MANAGEMENT FOR STUDENTS WITH DISABILITIES: THE IMPORTANCE OF TEACHER FOLLOW-UP

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Researcher-teacher collaboration occurred during the design and implementation of self-management instruction for two middle school students with different disabilities and for two different target behaviors. One student with physical disabilities was taught to increase safe hall travel during school transitions, and the other student with learning disabilities was taught to increase on-task behaviors. After each student had been trained to use self-management, their teachers were not able to follow-up with them immediately. Contrary to their teacher's anticipated impact of self-management, neither student's behaviors reached satisfactory levels until their teachers followed-up with them. Implications include the necessity for adults to follow-up with students after teaching self-management to ensure the intervention is progressing as planned and that the desired impact on students' behaviors occurs. *The work described in this paper was funded by the U.S. Department of Education Field-Initiated Research Grant # H023C70066. The views expressed are the author's and do not necessarily represent the policy of that agency, and no endorsement by the federal government should be inferred. Immense appreciation is extended to the educators, Elena Dennis and Karen Cessna, for their significant time investment and valuable reflections in working with the researcher on these projects. Additional credit belongs to the research data collectors (Ted Crimy, Mary Keefer, Mary Gohng, and Sabita Raman), who were fastidious in gathering research data.*

Self-management instruction is a well-researched technique that has wide applications across students, age levels, behaviors, and disability labels (Browder & Shapiro, 1985; Horner & Brigham, 1979; Prater, Hogan, & Miller, 1992; Strain, Kohler, Storey, & Danko, 1994). Self-management can take on many forms, including self-monitoring (recording the occurrence or nonoccurrence of one's behavior), self-evaluation (judging the quality of one's behavior using a rating scale), and self-reinforcement (having performed a predetermined behavior to a predetermined quality rating such that a chosen reward is accessed) (Carpenter, Musy, & King-Sears, 1997; Falk, Dunlap, & Kern, 1996; Lalli & Shapiro, 1990).

Self-management can be used, independent of adult supervision, as a method to promote student independence and desirable behaviors across a variety of settings (Pierce & Schreibman, 1994; Wood, Murdock, & Cronin, 2002). Although self-management has the potential to empower students in controlling their own behaviors, there are elements of adult's involvement in both teaching students to self-manage and monitoring students' performance after instruction to ensure the desired impact is occurring (Freeman & Dexter-Mazza, 2004). Several researchers note the individualized effects of self-management interventions, and

caution that all students may not respond immediately and with desired proficiency after learning self-management (Graham, Harris, & Reid, 1992; King-Sears & Bonfils, 1999).
For example, McDougall and Brady (1998) conducted self-management research with students who did and did not have mild disabilities in a general education math class and found differential effects on students' academic behaviors. Most students with and without disabilities benefited from self-management, but one student with attention deficit hyperactivity disorder did not make substantial gains as the other students did. McDougall and Brady concluded that, for some students, self-management components may need to be enhanced and/or combined with other management techniques for students to sufficiently benefit. Accordingly, student's performance after being trained to use self-management needs to be monitored to ensure desired benefits are occurring.

When students with disabilities learn to self-manage, they are more likely to rely on themselves than others for decision-making, they empower themselves for determining areas where they desire to improve, and the need for other adults or peers to assist in controlling their behaviors is minimized or eliminated (Firman, Beare, & Loyd, 2002; King-Sears, 1999; Hughes, Copeland, Agran, Wehmeyer, Rodi, & Presley, 2002). However, students with disabilities are not likely to learn how to self-manage unless their teachers select it as an instructional intervention, and know how to teach self-management to them (Grigal, Neubert, Moon, & Graham, 2003).

Self-management is frequently cited as one of several necessary skills that lead students with disabilities toward being more self-determined youngsters who can appropriately and proactively take control of aspects of their life, in and out of school settings. Self-determination skill sets have been a major topic in special education for over a decade, but research on how to best combine components such as goal-setting, self-managing, choice making, and decision making are still emerging (Karvonen, Test, Wood, Browder, & Algozzine, 2004). Nonetheless, with a well-established research base for self-management as an intervention, it would seem that its use would be more prevalent in schools. Despite self-management's potential impact, it may be set aside as an intervention for a variety of reasons, including issues in translating research-based practices into school-based interventions.

There is considerable rhetoric about the gap between what is available versus what is used in schools (Carnine, 1997; Gersten, Morvant, & Brengelman, 1995; Klingner, Ahwee, Pilonieta, & Menendez, 2003). Malouf and Schiller (1995) caution that research to practice is not simply a linear model in which research knowledge can be directly applied in practice. They note that a linear model *draws a fairly clear distinction between research and practice--innovations are developed and validated by research, then applied in practice* (p. 421). Malouf and Schiller posit that such a distinction ignores a multitude of factors that actually impact practice, including teachers' procedural knowledge about how to use techniques and conditions for implementing new practices. Billups (1997) suggests that researchers and practitioners establish more opportunities to work together, emphasizing the need for researchers to receive direct feedback from practitioners on what happens when their research is used in classrooms. Lloyd, Weintraub, and Safer (1997) further note the need to examine practices within the realistic environments under which practitioners are expected to implement research-based methods, and note that environmental factors may *make or break an innovation* (p. 536). The research described in this article was designed as a researcher-practitioner partnership to determine how well techniques, which work well when tightly-controlled research occurs, transfer as success when teachers implement them around the day-to-day, and sometimes uncontrollable, factors that represent realistic environments and *real life* for them.

A distinctive feature of this research was that the researcher sought participation from the practitioners in designing content for the self-management intervention. The framework for designing and implementing self-management was pre-determined based on a synthesis of

previous research, but the details for the content were co-constructed between the practitioners and researcher around specific student behaviors. Collaboration requires dialogue, discussion, and compromise. Consequently, there were some aspects of control that the researcher relinquished in deference to what the practitioners, who usually provided indirect and consultative services for the two students, were able to accomplish given the logistics of their case loads and responsibilities with other students. Conversely, the practitioners committed to aspects of self-management implementation, such as adherence to direct instruction on self-management, that were predetermined requirements for the research. The purpose of this research was to determine the impact of self-management on students' behaviors when their teachers collaborated with a researcher to design and implement aspects of the intervention.

Method

Teacher Training

The researcher recruited educators who were interested in the potential of self-management to promote students' independence with tasks that the students had already demonstrated they could perform, yet the students' performances were inconsistent and/or dependent on reminders and cues from adults in the environment. The two educators who participated in this study were both working with students on a consultative basis, and they had limited time for direct instruction with the students. One educator was a special education teacher with a master's degree in special education and two years of teaching experience. The other educator was a physical therapist with licensing as a therapist and over ten years of experience.

Each educator met with the researcher across several sessions to discuss the self-management design and implementation framework, which is represented by the acronym SPIN (King-Sears & Carpenter, 1997; King-Sears, 1999; King-Sears & Bonfils, 1999):

- Select the student's target behavior.
- Prepare to teach self-management.
- Instruct the student using the 10-step instructional sequence.
- Note the impact of self-management on the student's target behavior.

The educators already had several students and student behaviors in mind when they volunteered to participate in this research, so initial conversations with the researcher focused on narrowing down the specific students they would work with, and the specific student behaviors they wanted to focus on for self-management instruction. The total amount of time for training and material development approximated 12 hours, which also included discussion of research parameters, dialogue about self-management content, observation of possible target students and their behaviors, and development of scripted lesson plans and student materials.

After selecting each student's target behavior (see Dependent Variables), the focus shifted to preparation activities. These included determining what type of self-management device to use (e.g., self-monitoring, self-evaluation, or self-reinforcement), developing the device, and scripting the lesson plans for instruction on self-management. The focus during much of this time was on the 10-step instructional sequence (see Table 1 below, and the Independent Variable section), which became the teacher's lesson plans and training scripts for measuring fidelity of treatment.

Participants

The middle school special educator selected 8th grader (13 years old) Jason, a student labeled as *other health impaired* (for attention deficit disorder and gifted/learning disabilities) who was enrolled in general education classes throughout the day. Jason's most recent psychological report indicated that on the WISC III, his Verbal IQ was 130, Performance IQ was 102, and Full Scale IQ was 122. Strengths included superior verbal skills, creativity, reasoning skills, and short-term memory. Weaknesses included attention to task, impulsivity,

and social awareness. Standard scores for all academic areas measured by the WIAT ranged from 112 to 138.

Table 1
INSTRUCT: 10-Step Instructional Process for Teaching Students to Use the Self-Management System

10-Step Instructional Process
Introduce the target behavior
Identify and demonstrate examples and nonexamples of the target behavior. Discuss the importance of the target behavior. Provide practice of the target behavior and identify mastery criteria.
Introduce the self-management system
Describe the self-management system and its benefits. Model (think-aloud) the self-management device while performing the target behavior.
Provide practice and assess mastery
Provide guided practice for using the self-management device while performing the target behavior within a role-play situation. Assess student's mastery of the self-management device for guided practice within the role-play situation. Discuss the actual situation in which self-management will be used. Provide independent practice opportunities for using the self-management device while performing the target behavior within the actual situation. Assess student's mastery of the self-management device for independent practice within the actual situation.

Source: King-Sears, M. E., & Carpenter, S. L. (1997). Teaching self-management to elementary students with developmental disabilities (p. 25). Innovations (Research to Practice Series). Washington DC: American Association on Mental Retardation

Jason's behaviors or concern related to his on-task performance and attentiveness during classes. His teachers were concerned that he was inconsistent in staying on-task and that he had variable attention to tasks throughout class periods. He was described as a *bright, capable student who had trouble with organizational skills and work completion.* On the Behavior Assessment for Children, disparity between his superior level of cognitive abilities (especially verbal) and the level of his social awareness was reported.

The physical therapist selected John, a 12-year-old 6th grade student whose primary disability label was multiple disabilities. He received special education services for academics, speech and language therapy for significant expressive and receptive language disabilities. He also received consultative services from an occupational therapist and physical therapist. John had received some type of specialized services since he was a toddler, when he was initially diagnosed with cerebral palsy with spastic hemiplegia and developmental disabilities. During 6th grade, he participated in general education elective courses for 28% of the school day. On the WISC III, his Verbal IQ was 58, Performance IQ was 68, and Full Scale IQ was 60. On the Woodcock Johnson Achievement Battery, standard scores for Broad Reading was 79, Math was 78, and Writing was 66. On the Morrison McCall Spelling Inventory, his grade equivalent was 3.9. On the Peabody Picture Vocabulary Test-R, the standard score was 57, and on the Expressive One-Word Picture Vocabulary Test, the standard score was 55. The physical therapist was addressing IEP goals related to accessing his locker and transitioning between classes.

John's behavior of concern was his hallway travel behavior, which consisted of running in the halls, rushing down the steps, jumping down steps, and running into classrooms. He was physically able to ambulate independently on level ground, but had a history of rushing and not slowing down in hallways. He used a reciprocal gait pattern in ascending and descending

stairs, and had been asked to use the hand rail on stairs but he did not consistently comply with this request. His therapist was particularly concerned because he was likely to harm himself and others when he ran in the halls and jumped down steps.

Settings

For Jason, his general education math class was targeted as the setting for intervention. Block scheduling for classes occurred at this middle school, so math was a 90-minute block every-other day.

For John, hallway transition time between 5th and 6th periods were targeted, primarily because that was the time during the day that the physical therapist could commit to overseeing his performance. For this hallway travel, John needed to walk out of his classroom to his locker in the same hallway, down the hallway to walk down the stairs to a second hallway, and down the second hallway into the next classroom (the gymnasium for physical education class).

Dependent Variables

The dependent variable for Jason was his on-task behavior during math class. Data for Jason's on-task behaviors were gathered using a 10-second partial interval recording system for 20 minutes during the first half of a 90-minute math class. On-task behaviors were operationally defined around five categories: movement, material use/gathering, talk, eye focus, and writing. Off-task behaviors that occurred at any point during the 10-second interval constituted the entire interval scored as off-task (i.e., partial interval recording). On-task intervals were recorded only when the entire interval consisted of on-task behaviors (whole interval recording). The data collector wore a headset with a cassette recorder containing a cassette tape that emitted tones every 10 seconds. For 20 minutes during the first half of the 90-minute period, research data were gathered randomly at the beginning, in the middle, and at the end of instructional sessions.

The dependent variable for John was safe walking in the hallway. Data for John were gathered using a 10-second momentary time sampling recording system during the time he was traveling in the hallways. Safe hall travel behaviors were operationally defined as safe/appropriate or unsafe/inappropriate for movement. Safe movement in the hallways was walking at all times with no stopping, and movement was considered unsafe if he was running, skipping, or jumping. Because the general case of safe and appropriate hall travel was targeted, talking was also operationally defined as appropriate in that he could wave to peers or teachers or say hello and have conversations with peers or teachers as he was walking in the hallway. The data collector wore a headset attached to a cassette tape that emitted tones every ten seconds. When she heard the tone, she noted whether or not John was traveling safely at that moment in time. The data collector positioned herself in the stairwell so that she could observe John as he walked out of his 5th period class and down the first hallway, and she could unobtrusively watch him in the stairwell by standing near a corner on the landing, and then she could follow him as he walked in the second hallway to his 6th period class. The data collector was cautioned not to run or endanger herself to follow John when he was running, but to follow him safely and note intervals as *cannot see* if he was out of her line of vision.

Interobserver Reliability

Data collectors initially viewed videotapes of the students to practice and refine data collection activities, and then practiced in the school settings to both desensitize students to their presence and attain inter-rater reliability. Four data collectors were trained as two teams (one team per school), and each team achieved above 80% inter-observer reliability prior to commencing research data collection activities in the school settings. All data collectors were blind to experimental treatments throughout the study. Inter-observer reliability sessions for research data were conducted approximately one time per week using the most stringent

reliability measures recommended by Tawney and Gast (1984), which involved cell-by-cell matches. Reliability was determined by first counting the number of cells that matched and dividing that number by the total number of cells with a notation and multiplying that number by 100. When occurrences of the behavior occurred less than 75% of the session, the number of occurrences agreed upon were divided by the number of cells with agreements and disagreements for occurrences, and that number was multiplied by 100. When occurrences occurred more than 75% of the session, then the number of non-occurrences agreed upon were divided by the number of cells with agreements and disagreements for non-occurrences, and then that number was multiplied by 100.

Design and Condition Sequence

For both students, a changing conditions design was planned, consisting of baseline (A), training for self-management (B), and independent use of self-management (C). Alberto and Troutman (1999) define changing conditions as an experimental design that requires sequentially changing the conditions for student's behaviors to determine the relative impact on the target behavior. Because previous studies had indicated that concurrent generalization can occur when students are being trained on self-management (King-Sears, 1999; King-Sears & Bonfils, 1999), there was some evidence to indicate that a similar pattern might occur in Condition B for this study. As will be noted later in this article, there were some problems with teacher follow-up during the student's independent use of self-management (Condition C) which necessitated a fourth condition (D) of teacher follow-up.

The design selected for this research is not reflective of researchers' desire for a design that supports a functional relationship. However, as the researcher also desired to examine what happens when well-researched methods are used by practitioners, the changing conditions design was an area where the researcher deferred to the practitioners' desire for confining their implementation to one setting. Moxley (1998) also notes that a *treatment only* design can be more realistic and practical for teachers to use.

Materials Used for Self-Management Instruction

Materials of packets of Cue Cards were developed to provide written information about self-management (i.e., the target behaviors with examples and non-examples were written down, definitions of self-management and goal-setting were provided, and practice sheets were included), structure for sequencing the instruction, and note-taking formats for student use during instruction.

Each teacher developed the self-management devices for her student to use. Jason's (see Table 2 next page) was a self-monitoring device that he used to note whether he was displaying productive (on-task) or interfering (off-task) behaviors when a tone sounded. Two sets of cassette tones were developed; one had tones that were 10 to 60 seconds apart, which was used when he was first learning about how to use the device. The second cassette had tones every 3 to 5 minutes for the duration of 45 minutes (which was half of the 90-minute block math period).

John's self-management device was for self-evaluation, in which he noted whether he earned a "0" or a "1" rating for safe hall travel for each of three segments of the travel route when he arrived at his next class (see Table 3). Both self-management devices also contained a section for students to set individual goals for themselves. The goal-setting component for self-management was used to (a) *set the stage* for self-determination and self-advocacy skills, (b) promote students' awareness of and responsibility for their own behaviors, and (c) explicitly incorporate student involvement in predicting and reflecting on their performance.

Table 2
Jason's Self-Management Device

Name:_____ Date: _____

Class: _____ Today's productivity goal: _ _____

Did I write down my homework?	yes	no

Am I working productively when I hear the tone?

Productive?	
Interfering?	

Did I reach my goal?	yes	no

Table 3
John's Self-Management Device

Student Name: Week beginning date:

My Weekly Goal # is _____.

Day	Daily Goal	Daily Total	Travel Areas	Safety Rating
Monday			upstairs hall	
			stairs	
			gym hall	
Tuesday			upstairs hall	
			stairs	
			gym hall	
Wednesday			upstairs hall	
			stairs	
			gym hall	
Thursday			upstairs hall	
			stairs	
			gym hall	
Friday			upstairs hall	
			stairs	
			gym hall	
WEEKLY TOTAL		**Did you meet your weekly goal?**		

Safety ratings: **"1"** for completely safe travel for that area, **"0"** for any unsafe travel for that area

Daily goal: On the days that you meet your daily goal, place ***** in that Daily Goal box.

Independent Variable: Procedures for Teaching Self-Management
Self-management was taught using a 10-step instructional sequence (the **I**nstruct phase of the SPIN framework). The 10-steps fell within three stages (refer to Table 2): (a) introduce the target behavior; (b) introduce the self-management system; and (c) practice self-management with mastery.

Prior to beginning the Steps, each teacher briefly described the instructional unit's purpose, identified benefits students could derive from participating in the instruction, and asked students if they were interested in hearing more about a technique that could assist them in school. Throughout instruction, each day's session began with an advanced organizer of what would be covered during that session, and concluded with review statements that summarized that session and involved the students in practicing the content from that day's session and previous sessions.

Introduce the target behavior: Steps 1, 2, and 3. Step 1 involved identifying and demonstrating examples and non-examples of the targeted behavior. Educators named the behaviors, described what each looked like, and demonstrated all examples and non-examples.

Describing benefits from using self-management was Step 2. Key to this Step was discussing with and eliciting from the students benefits that they valued from self-managing particular behaviors. For both educators, the tendency to impose their benefits was tempered with the requirement that each student contribute at least one reason that he valued for self-managing. Each educator had several benefits already developed in their lesson plans and written on Cue Cards, but each student was expected to contribute to those benefits, too. For example, for Jason a benefit that he targeted was how increasing his productivity behaviors could help him get better grades on his report card.

Step 3 required students to participate in practicing the target behavior and to identify mastery criteria. Each student demonstrated and identified the examples and non-examples of their respective targeted behaviors, and referred to their Cue Cards whenever they wanted to.

Introduce the self-management system: Steps 4 and 5. Step 4 was the first time that the self-management device itself was shown to the students. Content on the device was thoroughly explained, including definitions and analogies for the terms *self-management* and *goal-setting.* Each student watched his teacher demonstrate the device's use and discuss the content on the device. Explicit links to how the device is used to monitor the previously discussed examples and non-examples of targeted behaviors occurred in Step 4. Setting goals was also described and then demonstrated:

Step 5 involved the teacher modeling how to use the self-management device while performing the targeted behavior. The demonstration from Step 4 continued to occur, only in Step 5, the teacher conducted *think alouds* for her thought process while using the device.
OK. I've just walked into class. Hmmm...I need to remember what Ms. Dennis and I practiced for productive working and getting all my work done. OK. The first thing I need to do is write down my homework. To do that, I need to get out my materials. Do I have everything I need? I need to look...yes, I do...now I need to look at the board and copy the homework. I better hurry--I remember Ms. Dennis said I have less than a minute to do this. OK. I'll copy the homework now. There's the beep--was I being productive just now? Yes, so I mark my form...

Jason's teacher used a cassette tape with more frequent tones (10 to 60 second intervals) at first. Then they used the cassette tape with the authentic tones (3 to 5 minutes).

John's therapist practiced in a small classroom initially, and then practiced in varied hallways at the school. Content from previous steps continued to be reviewed and emphasized (e.g., benefits, identifying examples and non-examples, telling why a behavior is safe/productive), and demonstrating and modeling roles were traded back and forth (sometimes the teacher

modeled examples and non-examples, sometimes the student modeled examples and non-examples).

Provide practice and assess mastery B. Then use it! Steps 6, 7, 8, 9, and 10. Step 6 consisted of providing guided practice within role-play situations, and students' active involvement and intense practice escalated during this step. Role plays continued, with the emphasis in this step to decrease the teacher's involvement and increase the student's proficiency with how, when, why, and where to use the self-management system.

Step 7 focused on the student's mastery of using the self-management device. Students needed to show that they knew when to use self-management, how to use the self-management device accurately, and that they could perform the behaviors necessary for using self-management while using the device. Then for Step 8, students were reminded of both the specific setting in which they would begin using the device and the date when they would begin using the device. Steps 9 and 10 were actually combined, and consisted of observing the student on one occasion using self-management in the actual setting and determining whether the educators observed improved student performance relative to the target behaviors. Step 9 and 10 occurred on the first occasion of the student using self-management in the actual setting. These steps then flowed into the *N* segment of the SPIN framework: Note the student's performance.

Fidelity of Treatment

Instructional sessions occurred individually with each student. Each teacher developed a script that described the lesson plans for each of the 10 Steps. Three of the instructional sessions were videotaped for fidelity of treatment analysis. A data collector who was blind to the treatments viewed the videotapes and used a 10-second whole interval recording technique to determine if the teachers were (a) following the script, (b) using an appropriate pace for the lesson, and (c) providing appropriate practice. Interobserver reliability was conducted for one of the three videotaped lessons using the same stringent computations as those used for interobserver reliability.

Each educator also kept a journal to document the date, the Step number, how long each session lasted, and a general description of how each instructional session went. Educators included subjective comments, impressions, and observations about student's responses and reactions to the instruction. Jason's teacher taught the 10-step sequence across four sessions for a total of 2 hours and 5 minutes of instruction. John's teacher taught the 10-step sequence across twelve sessions for a total of 6 hours and 30 minutes of instruction. For neither teacher were the sessions on consecutive days; each was needing to fit in the instruction around their schedules.

Results

Baseline Data

During math, Jason's baseline on-task behaviors were 45%, with a range from 32 to 57% (see Figure 1). John's baseline safe hallway travel was 50%, with a range from 20 to 75% (see Figure 1). The variability in these ranges are not unusual, and typically ranges such as these indicate that self-management is a good match as an intervention. That is, the variable ranges indicate that the students can perform the target behaviors, but do not perform them consistently and at desirable levels.

Data During Self-Management Training

During the time that Jason was being trained to use self-management in a separate classroom, his on-task behaviors in the math classroom increased to 77% (range 73 to 80%). While John was being trained to use self-management in a separate classroom, his safe hallway travel increased to 61% (range 0 to 100%).

Figure 1.
Research data for Jason and John.

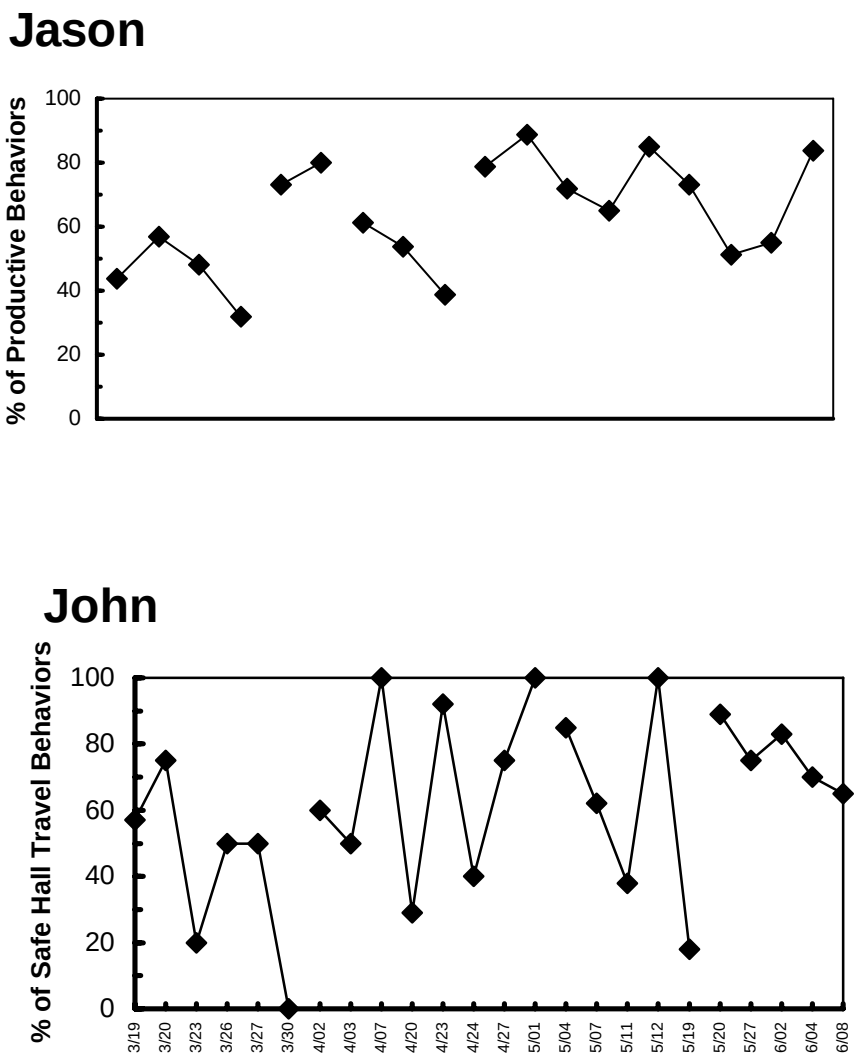
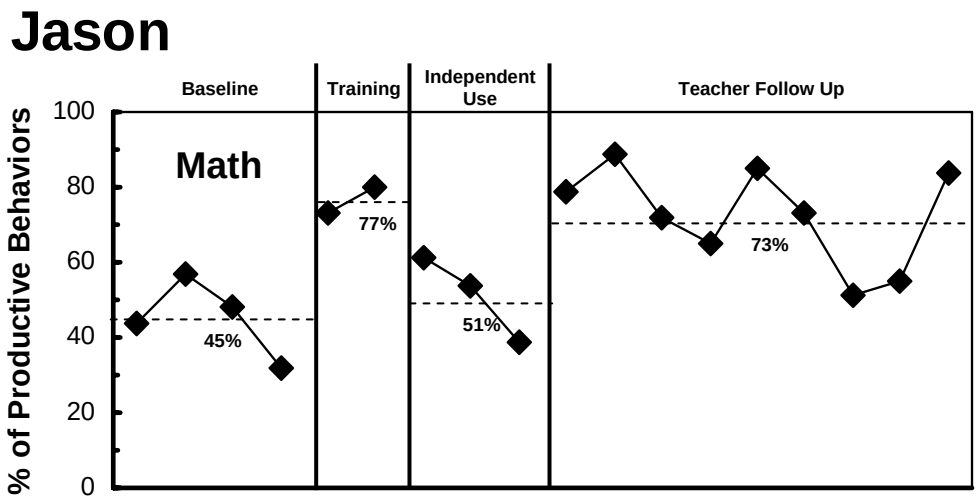
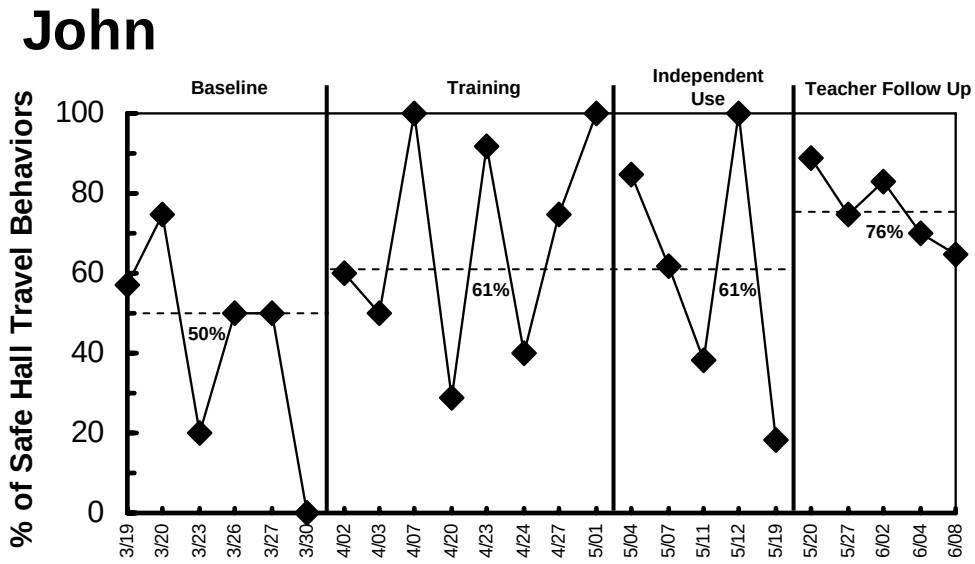


Figure 1.
Research data for Jason and John.





Note: Graphs on this page inserted by researcher to show complete information for all phases of research and data averages-per-phase

Data After Self-Management Training
After self-management training was completed for Jason and he began using self-management independently, his on-task behaviors for math were 51% (range 39 to 61%). After self-management training was completed for John and he began using self-management independently, his safe hallway travel was 61% (range 38 to 100%).

Examining the reasons for Condition C data. Neither student's data was as high during independent use of self-management as was anticipated, and so the researcher queried the teachers about what they perceived was going on. Upon examining the events occurring for each student, the last component of the SPIN sequence was not occurring. Neither teacher was Noting the student's performance and following-up with them about how self-management was working for them.

Prompting teachers to follow-through and follow-up. The researcher shared the students' data with their teachers and discussed whether omission of the teacher follow-up could be the factor impacting the students' data. Each teacher then followed-up with the student, and more details on the nature of the follow-up are provided in the Discussion section.

Data After Teacher Follow-Up Occurred
After Jason's teacher followed up with him, his on-task behaviors increased to 73% in math (range 51 to 89%). After John's teacher followed up with him, his safe hall travel behaviors increased to 76% (range 65 to 89%).

Inte-robserver Reliability for Researcher Data
For the data collectors watching Jason, the inter-observer reliability was 83% for cell-by-cell reliability. For the data collectors watching John, the inter-observer reliability was 97% for cell-by-cell reliability.

Discussion
The data indicated that while each student was being trained to use self-management, concurrent generalization was occurring in the targeted settings. Yet when the instruction ended and the student was expected to use his self-management system independently, although data indicated students' performances were improved from baseline, the data were not as high as they were when the students were being trained, which was also when they were frequently seeing the educator for the self-management training.

Although there had been frequent communication between the researcher and practitioners, all assumed that the majority of their work had occurred in designing and implementing the self-management intervention. Indeed this was true, because the majority of the hours needed for designing and implementing self-management occur prior to the student using it independently. However, their work did not end when students' independent use of self-management began, and the data for each student's Condition C prompted further examination of why anticipated success was not occurring

Fidelity of treatment was high and had occurred for the 10-step instructional sequence (Instruct) of SPIN. Fidelity, however, needed to extend to include the follow-up as designed in *Note the student's performance using self-management*. Although the researcher anticipated that the teachers were following-through on follow-up, for various reasons they were not able to do so.

Follow-Up With Jason
Jason's teacher presumed that because self-management was designed to result in a student's independent performance of the target behaviors that her role was complete after she had completed the Instruct component (i.e., using the 10-step instructional sequence). She anticipated that once Jason learned the self-management, the instruction was complete and

she did not need to continue to oversee his performance. Conversely, the researcher presumed that Jason's teacher realized that adhering to the final phase of SPIN required follow-up immediately after instruction ended for the purpose of ensuring that self-management was having its desired impact. Two critical components of the self-management intervention's success with Jason would not have been realized if follow-up had not occurred. First, Jason informed his teacher that he anticipated seeing her weekly to share his performance with her, and that he was discouraged when those weekly meetings were canceled by her due to her responsibilities elsewhere. Second, Jason reported that shortly after he began to use the self-management system independently in math class that another student had taped over the toned tape. The teacher was unaware of this until she followed-up with Jason after the researcher informed her of the research data. Recall that as a consulting teacher, she was not typically seeing Jason on a regular basis (except during self-management training) and did not have a frequent communication system in place with him.

When she was able to briefly follow-up with the student (within two weeks she was able to have a brief hallway conversation with Jason about his use of self-management), more promising results occurred. Implications may be that follow-up does not need to be extensive and time-consuming, but it does need to occur. Encouragingly, during brief conversations with Jason, he related to his teacher that he was anxious to receive a new audiotape and resume using the system.

Follow-Up With John

John's therapist reported a different type of reason for not being able to follow up with John, and that was because she was ill for two weeks immediately after John completed his instructional sequence. Consequently, she was unable to directly follow-up with John until she returned to the school site after recovering from her illness. She reported that, although John claimed he had been using the system, that the number of blank self-management devices in his locker indicated that he was not using it consistently nor frequently. John began to use the self-management during the first week after he completed training, as evidenced by his completed devices for that week. No self-management notations were on subsequent devices for the remaining time until the therapist returned to school and followed up with him. In absence of someone checking on his use of self-management, he was not consistently using it. After the therapist returned to school and followed-up with John, his performance improved.

Limitations and Lessons

A changing conditions design precludes evidence of a functional relationship between an intervention and target behavior, so although visual inspection of the data may tentatively indicate a functional relationship, the design itself is not conducive toward proof of such. It is also difficult to claim that the impact of self-management instruction would occur similarly for other students, based on these data from two students. As noted at the onset of this article, there were some compromises between the researcher and practitioners regarding the stringency of some aspects of the research. For example, the researcher would have preferred consecutive sessions for training the students on self-management, but the practitioners were not able to fit that into their schedules. Some of this research was suspended during school break periods (e.g., spring break, school-wide assessments), which also impacted some of the desired consistency for implementation.

Limitations of this study also include that two different students' behaviors were studied with two different educators implementing the self-management interventions. Even when both students did not increase desired behaviors consistently until teacher follow-up occurred, that relationship may be unique to these two particular students. Of further interest is that similar effects occurred for two very different students in terms of their characteristics, profiles, and targeted behaviors. Such information does have implications for practitioners who set out to

teach self-management in hopes of immediate and lasting effects, absent some amount of teacher follow-up.

This study was also clearly an attempt to examine whether well-researched techniques, when implemented by practitioners working around a variety of real-life factors, maintain results attained in highly-controlled research settings. At least for these students, simply teaching the self-management system and then asking them to independently use the system in another setting does not suffice. Similarly, Freeman and Dexter-Mazza (2004) found that adult feedback was necessary for an adolescent with disruptive classroom behavior to increase desired behaviors. They concluded that adult feedback may be an essential component when using self-monitoring as an intervention.

Although the SPIN framework includes a component for follow-up, some teachers may feel that is an expendable component and feel that after instruction has occurred, the students' independent and proficient performance should commence and be sustained. The data from this study indicates that follow-up was necessary, albeit for different reasons, for both of these students. For some students who are taught self-management, teachers need to plan and adhere to a follow-up system that provides opportunities for them to Note whether self-management is having its desired impact, reinforce the student's use of the newly-acquired behavior, and make adjustments if any components need revisions or refinements.

These results may seem contradictory of what self-management is intended to be: a way that students can control themselves without teachers prompting them. However, it may be that expecting some students, even after sufficient instruction in which they've demonstrated mastery, to transfer the system to the authentic setting without any follow-up or feedback is unreasonable, too. Ideally, students could automatically use and internalize the techniques whenever they need to use them; however, some students with disabilities, even when self-management is the technique, may not immediately perform well without some continued follow-up and accountability. In both of these situations, follow-up was conducted briefly (e.g., 5 to 15 minutes) on two to three occasions, and consisted of updates on the student's progress, determining if the intended benefits were occurring, and reviewing the targeted behaviors. The follow-up sessions seemed to be the extra boost that students needed to resume accurate and consistent use of the self-management systems.

Carnine (1997) suggests that research results may be perceived as more usable by practitioners if they are involved in the research to increase its relevance, if practitioners collaborate during the research to increase its practicality, and if implementation settings are extended to increase its transportability. The collaboration between the researcher and practitioners in this study was designed to *increase the transportability* of self-management as an intervention. In doing so, the major lesson learned seems to be how critical it is for follow-up to occur. Because the practitioners were involved in designing the self-management system and instruction, they reported afterwards that they felt more knowledgeable and capable of designing similar systems with other students. Had they not been so heavily involved in the design of self-management, they noted they would not necessarily have felt confident about designing other self-management systems. Moreover, they also acknowledged that they were unaware that when they discarded some aspects of interventions that they may also be inadvertently compromising the interventions' potential for success. It must be noted that their time investment thus far had been considerable, yet clearly the *final pieces* of following up with the students were also critical pieces for ensuring its success.

At face value, self-management appears to be a straightforward procedure with clear benefits. However, the underlying motivation and students' internalization to use self-management cannot be sold short; systematic instruction on self-management may need to include *checkups* that promote students' sustained use and reinforcement as students are acquiring internal controls. Given the relationship among self-management, self-determination, and

independence (Doll, Sands, Wehmeyer, & Palmer, 1996; Palmer & Wehmeyer, 2003), the issue should not be whether to teach self-management, but to continue explorations that translate research to practice by teaming with practitioners. Well-researched techniques that make their way into practitioners' hands need to maintain the critical components that led toward their initial success with students. When critical components are omitted, desired success with students may not be achieved.

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