Self-Monitoring of
Student Academic Performance

Module 5

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Karen is a sixth-grader in Mr. Daniels general education classroom. Karen qualifies for special education because of a learning disability, with a second diagnosis of an emotional disability. Karen has an engaging personality and loves to talk with her peers and adults. Her listening comprehension skills are excellent. However, she is significantly below grade level in mathematics. Although Karen is provided with math tasks that are on her instructional level, she is not successful in completing independent work. Mr. Daniels has decided to implement a self-monitoring system with Karen to improve her completion of math assignments during class time.

First, Mr. Daniels collected data for one week to determine the percentage of assignments that Karen completed each day during math. Then Mr. Daniels created a monitoring chart that would help Karen keep track of the daily math assignment she was responsible for completing. At the end of each class period Karen would check off whether or not she completed the assignment(s). Once the system was developed, Mr. Daniels spoke with Karen and explained how completing her daily assignments is an important part of getting good grades and that the self-monitoring chart would help her get her work finished. Karen and Mr. Daniels decided to begin with a completion rate of 50% per week.

Mr. Daniels knew that Karen really enjoyed socializing, so he asked Karen if she wanted to work for a teacher-hosted lunch for herself and a friend. The plan was then set up so every time Karen completed 50% of her daily math assignments for five days, she would be rewarded with a teacher-hosted lunch where she could invite a friend.

Although the first couple of days required more time and attention from Mr. Daniels, by the end of the week he spent considerably less time prompting Karen to complete her work. Mr. Daniels' plans to increase the completion rate once Karen experienced enough success to be motivated to work more independently.

Description of Self-Monitoring of Academic Performance

In the absence of proactive strategies to help identify and manage academic deficits, students often find it difficult to be successful in school. This is particularly evident in their low academic performance and low rates of academic engaged time during structured class activities (Menzies, Lane, & Lee, 2009). Recently, however, researchers have begun to place an increased emphasis on addressing student academic deficits to increase school engagement and improving graduation rates (Mooney, Epstein, Reid, & Nelson, 2003). One intervention that has demonstrated potential over the years for supporting students' academic engagement and productivity is self-monitoring. Over the past two decades studies have documented that self-monitoring is an effective intervention to increase academic engagement, decrease disruption, and enhance academic skills, including productivity and accuracy (Carr & Punzo, 1993; DiGangi, Maag, & Rutherford, 1991; Rock, 2005; Shimabukuro, Prater, Jenkins, & Edelen-Smith, 1999).

According to Reid (1996), self-monitoring of performance involves instructing students to self-assess some aspect of academic performance and to self-record the results. For example, students may self-assess their productivity (e.g., number of math problems attempted), accuracy (e.g., number of spelling words completed correctly), or strategy used (e.g., whether or not steps in a strategy were performed). Though self-monitoring does not create new skills or knowledge, it does increase the frequency or duration of existing academic behavior (The IRIS Center for Training Enhancement, 2008). Self-monitoring can be used with students of all ages and disabilities (DiGangi et al., 1991), is relatively unobtrusive, appeals to students, is inexpensive, and relatively quick to implement (Carr & Punzo, 1993; Vanderbilt, 2005).

Research Supporting Self-Monitoring

Research has shown that self-monitoring has been used successfully with individuals with a variety of disabilities, including autism, cognitive impairments, learning disabilities, attention deficit hyperactivity disorder, and emotional disabilities (Ganz, 2008; Lam, Cole, Shapiro, & Bambara, 1994; Mooney, Ryan, Uhing, Reid, & Epstein, 2005; Rafferty, 2010; Reid, 1996; Reid, Trout, & Schartz, 2005). In addition, several studies suggest that students at all grade levels (Dipipi, Jitendra, & Miller, 2001; Reinecke, Newman, & Meinberg, 1999), and in both general and special education classrooms, can benefit from self-monitoring interventions (Hughes & Boyle, 1991; Hughes, Copeland, Agran, Wehmeyer, Rodi, & Presley, 2002).

Over the last several years, there has been an increase in the research focusing on the use of self-monitoring, to target improvement in academic performance and productivity of students with behavior disorders in public schools. Some of these studies focus on academic outcomes for students placed in the general education classroom. For example, in the study completed by Rock (2005) the effects of a strategic self-monitoring intervention (i.e., ACT-REACT) was investigated on the academic engagement, productivity, and accuracy of students with and without disabilities in a general education setting during independent seat work. This study resulted in increased academic engagement and productivity for all students and math accuracy

was maintained for all students. In another study completed by Shimabukuro, Prater, Jenkins, and Edelen-Smith (1999), the effects of self-monitoring of academic productivity and accuracy on academic performance were examined. The students used self-monitoring for their academic performance for reading comprehension, mathematics, and written expression. Overall, the participants improved in accuracy in all subjects and the study showed improvements with on-task behavior.

Finally, in a study by Harris, Friedlander, Saddler, Frizzelle, and Graham (2005), self-monitoring of on-task and spelling study behavior was explored. While this study showed improvement in on-task behavior, self-monitoring of spelling produced substantially higher gains in four of the six participants. Overall, the results of these studies show that the use of self-monitoring is beneficial for helping students improve their academic performance and productivity (Harris et al., 2005; Rock, 2005; Shimabukuro et al., 1999).

When to Consider Self-Monitoring

Self-monitoring has the advantage of being relatively simple to implement as well as effective (Ganz, 2008; Vanderbilt, 2005). In addition, self-monitoring can also be used in combination with other metacognitive strategies, such as self-instruction, or goal setting (Menzies et al., 2009; Rafferty, 2010). In determining whether or not self-monitoring should be used for an individual student, several things must be considered. First, it is critical to determine if the student is able to identify or note when he or she has engaged in the target skill (Menzies et al., 2009; Nelson & Hayes, 1981; The IRIS Center for Training Enhancement, 2008). This means that the student understands and can perform the desired skill, yet may not be motivated to perform the behavior (Scheuermann & Hall, 2012). Next, the student must have the opportunity for the skill to occur frequently. Low frequency activities may be too far apart for a student and teacher to see meaningful, immediate changes in academics (Menzies et al., 2009; The IRIS Center for Training Enhancement, 2008). Finally, the behavior must be readily observable and easily recorded by the student (e.g., computing three-digit multiplication problems). The behavior must be worded in observable terms that the student can understand (Vanderbilt, 2005). Without these elements, it is unlikely that the student will be able to self-monitor their own performance.

Guidelines for Implementing of Self-Monitoring

Self-monitoring is a two-stage process of observing and recording one's behavior wherein the student: (a) discriminates occurrence/nonoccurrence of a behavior and (b) self-records some aspect of the behavior (Ryan, Pierce, & Mooney, 2008). Teaching students to self-monitor is a relatively easy straightforward process to implement (Menzies et al., 2009).

The first step in implementing self-monitoring is to identify the academic behavior that will be addressed with the intervention. For example, academic behaviors may include: improving spelling accuracy, completing a set number of math problems, or words written in ten minutes. When identifying the behavior, the teacher should be able to tell the student exactly what he or she will self-monitor (Loftin, Gibb, & Skiba, 2005; Rafferty, 2010; Vanderbilt, 2005). It is

important to address only one area at a time, so not to overwhelm the student. Students must be able to determine easily and accurately whether a behavior has occurred (Loftin et al., 2005).

Once the behavior has been identified, the teacher should then collect baseline data to determine the extent to which the behavior is performed in the classroom (Ganz, 2008). Data can be collected in many ways, including by counting the number of math problems completed during independent work or the percentage of words spelled correctly on weekly tests. The recording periods can vary, depending on the assignment. Therefore, a recording session can last for an entire class period or for only a ten-minute period. It is important to complete baseline data collection for at least three to five separate occasions that occur over several days (Ganz, 2008). Once baseline data are collected, the results should be graphed. The data allows the teacher and student to compare performance prior to and after the implementation of the self-monitoring strategy.

After collecting baseline data the teacher and student together need to meet and develop the monitoring program. The purpose of the meeting is to convince the student that he/she would benefit from a self-monitoring program (Ganz, 2008; The IRIS Center for Training Enhancement, 2008; Vanderbilt, 2005). For instance, the teacher could remind the student that "Practicing arithmetic facts each day will help you do better on your test." By stating the behavior in a positive way the student may be more willing to accept the plan; the behavior is reinforced, not punished (Loftin et al., 2005).

Once the student has agreed to try the plan, the teacher and student need to decide how frequently the student will record their behavior. The actual design of the self-monitoring plan is largely determined by the student's needs and setting in which the intervention will occur. Checklist and charts are common ways to record behavior (Loftin et al., 2005). Other examples include coloring boxes on a graph or tokens. Letting the student personalize the self-monitoring form helps with ownership and makes the process more enjoyable. In addition, it is also important that the self-monitoring form be age appropriate (Ganz, 2008; Menzies et al., 2009). For instance, when working with young children or those with limited reading skills, it may be wise to use clip art or digital pictures in place of text. When working with adolescents, it is more important to ensure the form does not draw unwanted attention from classmates.

Blocks of times should also be selected to decide how frequently the student will record their performance and when reinforcement will be provided (Menzies et al., 2009). If it is determined that the student is going to monitor their behavior during an activity (time on-task), the teacher may need to create a cue to remind the student to record their behavior for the given period of time. Otherwise, the teacher might elect to have the student simply graph their behavior at the end of class (number of math problems completed in class).

There are many advantages to breaking the day up into smaller chunks. For one, it makes the task less daunting and the student can be rewarded if he or she is successful in at least one of the time periods (Menzies et al., 2009). The use of reinforcers can also help students when attempting to reach a predetermined academic goal. Although some students are motivated by self-monitoring or improved grades alone, many students require other reinforcers (Loftin et al., 2005). At the beginning, frequent reinforcement is recommended. In addition, the student should have input regarding what items he or she wants to earn to increase motivation (Ganz, 2008).

Teaching the student to use and implement the self-monitoring procedures is the next step in program implementation. It is best to use modeling, coaching, and role-play when explaining the process to the student (Ganz, 2008; Rafferty, 2010; The IRIS Center for Training Enhancement, 2008). The teacher needs to lead the student step-by-step through the self-monitoring process and discuss any possible questions and points of confusion (Vanderbilt, 2005). This collaboration helps prevent potential problems that may occur and increases the student's investment in the intervention. At the beginning, it is important for the teacher to provide frequent positive reinforcement, feedback, and assistance to encourage the student to continue using the self-monitoring plan (Loftin et al., 2005; Vanderbilt, 2005). Over time, the teacher can decrease the level of reinforcement as performance improves.

Finally, it is essential to monitor the student's use of the plan and evaluate their progress. The teacher needs to monitor the student's performance to determine the effectiveness of the self-monitoring plan (Rafferty, 2010; Vanderbilt, 2005). They should also continue to observe the student and collect data on the frequency or duration of their performance to ensure that it is improving. Furthermore, occasionally the teacher will need to change aspects of the plan if it is not working (Vanderbilt, 2005). Once students have demonstrated consistent success with a self-monitoring plan, it should be gradually phased out until the student is maintaining their own behavior independently (Ganz, 2008; Rafferty, 2010).

To make self-monitoring effective, strategies should be used constantly and overtly at first and then faded to less frequent and more subtle use across time (Stainback & Stainback, 1980). To help maintain and generalize positive performance changes, self-monitoring should be combined with other methods that allow students to evaluate themselves against their earlier performance and to reinforce themselves for their successes (Hallahan, Kauffman, & Pullen, 2008; Smith 2002; Vaughn, Bos, & Schumm, 2000).

Cautions Regarding Use of Self-Monitoring

There are potential problems that may limit progress and adversely affect the practice of self-monitoring. According to Ganz (2008), teachers, parents, and administrators using self-monitoring should keep several points in mind. First, do not set the criteria for earning reinforcement so high that the student rarely receives reinforcement. The student should quickly earn reinforcement, particularly in the initial stages of implementation. This will help the student see the value of participating in the intervention. Next, teachers should not worry whether the student is completely accurate in self-monitoring. Students usually improve even when their self-monitoring data does not match their teachers. Finally, if self-monitoring is not working, do not quit. For most students the intervention will work with some minor adjustments. Self-monitoring of academic performance is an intervention that can help students improve their academic productivity. It has been proven to be effective with individuals of all ages and abilities. By following the simple steps, teachers will find self-monitoring to be a positive intervention that supports student improvement in many academic areas.

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Website Links
Center on the Social and Emotional Foundations for Early Learning: www.vanderbilt.edu/csefel
Example of Self-Monitoring Chart:
http://list.burnsville.k12.mn.us/ProDev/DistrictCurriculum/interventions/32.selfmonitoringtimeontask.pdf

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The IRIS Center for Training Enhancements: http://iris.peabody.vanderbilt.edu/resources.html

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