STIMULUS PREFERENCE ASSESSMENT IN SECONDARY GENERAL EDUCATION: USING REINFORCEMENT TO INCREASE ON-TASK BEHAVIOR

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by

Carrie Ellen Fielder

A Dissertation Submitted to the Graduate Studies Office of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Approved:

August 2007
The University of Southern Mississippi

STIMULUS PREFERENCE ASSESSMENT IN SECONDARY GENERAL EDUCATION: USING REINFORCEMENT TO INCREASE ON-TASK BEHAVIOR

by

Carrie Ellen Fielder

Abstract of a Dissertation
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August 2007
ABSTRACT

STIMULUS PREFERENCE ASSESSMENT IN SECONDARY GENERAL EDUCATION: USING REINFORCEMENT TO INCREASE ON-TASK BEHAVIOR

by Carrie Ellen Fielder

August 2007

The use of behavioral principles in general education classrooms has been recognized as beneficial to both teachers and students. One specific principle that works efficiently is reinforcement. The appropriate use of reinforcement in the classroom is critical for the success of behavioral interventions. Because of the individual differences in preference and reinforcing stimuli that potentially exist across students, identification of reinforcers targeted for individual students is essential (Timberlake & Farmer-Dougan, 1991). A stimulus preference assessment can be used to identify potential reinforcers prior to the start of an intervention. Earlier studies in preference assessment focused on single-item presentation and forced-choice methodologies, and also utilized individuals with disabilities. In contrast, published literature which focuses on secondary general education students has not been produced. The purpose of the present study was to determine whether reinforcers can be identified for secondary students by comparing teacher and student stimulus nomination preference assessment results and testing them within the general education classroom setting.

Participants were five students in grades 6 and 8, along with their teachers. The three types of assessment methods evaluated were teacher nomination, student nomination, and student on-going stimulus preference assessment. Teacher and student nomination preference assessments were conducted at the beginning of the study, while
the on-going assessment represents student preference throughout data collection. Reinforcer assessments were then used to evaluate the effectiveness of stimuli identified during each preference assessment. The three preference assessment methods were compared to determine which method or methods were most useful when identifying reinforcers for secondary level students. Reinforcer assessments consisted of observations of on-task behavior within the classroom. The results demonstrated that secondary general education students and their teachers were successfully able to identify reinforcers. For 2 of the 5 participants, the student on-going preference assessment resulted in slightly higher levels of on-task behavior. Analysis of results, limitations, and indications for future research are discussed.
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CHAPTER I
INTRODUCTION

The use of behavioral principles in general education classrooms has increasingly been recognized as beneficial to both teachers and students. By employing specific behavior management strategies, teachers are better able to teach students who likely display a wide range of abilities. Behavioral principles are most effective when used appropriately to counteract an inappropriate behavior while increasing appropriate behavior. In some instances, general education teachers may need to control the behavior of students who are unwilling or unmotivated to respond appropriately to instructional commands even though they possess the skill or skills necessary to do so. The use of reinforcement to increase appropriate classroom behavior can rectify such motivational issues while allowing the student more opportunities for academic success. For example, a student may be required to increase the frequency of an appropriate behavior, such as work completion. If this particular student, who is typically off-task during academic work time, can be trained to complete more work, the likelihood increases that the student will reach higher levels of achievement in the classroom (Brooks, Todd, Tofflemoyer, & Horner, 2003).

To successfully increase appropriate behavior, teachers must find and implement a strategy or intervention to which a student will respond. An intervention that works quickly and is easy to implement is more likely to be reported as acceptable by classroom teachers (Sheridan, Kratochwill, & Bergan, 1996). Most classroom interventions are based on academic skill building, reinforcement of appropriate behavior, or punishment of inappropriate or unacceptable behavior. Compared to interventions that utilize
punishment procedures, teachers tend to report preference for reinforcement-based interventions that rely on positive procedures to manage behavior in the classroom (Fantuzzo, Rohrbeck, Hightower, & Work, 1991).

Reinforcement has multiple features that are important to note when developing behavioral interventions in the classroom. First, it is important to note the difference between positive and negative reinforcement. Positive reinforcement is the presentation of a stimulus following a behavior which increases the future frequency of that behavior and behaviors of the same response class (e.g., stickers for sharing with a sibling). Although negative reinforcement also increases the frequency of behavior, a stimulus is removed following behavior rather than presented (e.g., the removal of pain after consuming aspirin). Whenever a specific behavior occurs and is immediately followed by reinforcement, the future frequency of that behavior will increase (Cooper, Heron, & Heward, 1987). The appropriate use of reinforcement in the classroom increases the overall success of behavioral interventions. Because of the individual differences in preference and reinforcing stimuli that potentially exist across students, identification of reinforcers that are targeted for the individual student (Timberlake & Farmer-Dougan, 1991).

A stimulus preference assessment can be used to identify potential reinforcers prior to the start of an intervention. Lohmann-O’Rourke and Browder (1998) defined stimulus preference assessment as “a systematic process leading to the identification of interests, values, and expectations unique to an individual” (p. 146). During a stimulus preference assessment, the goal is to identify particular items, activities, or types of social attention that will function as reinforcers. Theoretically, stimuli identified are said to be
preferred, and if a student prefers a stimulus, the stimulus has the potential to act as a reinforcer for him/her.

After the behavioral intervention is in place, the stimuli being used can be evaluated in relation to the behavior of interest. It is only after the actual presentation of a stimulus, following a specific behavior or series of behaviors, that the stimulus can be evaluated to determine whether it actually functions as a reinforcer. If a preferred stimulus does not increase the frequency of a behavior, it is not considered a reinforcer for the particular individual. An intervention is obviously more efficient and powerful if it incorporates stimuli that increase behavior quickly as oppose to those which take a long amount of time to produce behavior change. Therefore, reinforcer identification becomes an important step when developing and implementing reinforcement-based interventions.

Stimuli identified during preference assessment must be tested to ensure that they will function as a reinforcer prior to the start of intervention. This determination can be made by conducting a reinforcer assessment. The term reinforcer assessment refers to the process of assessing whether a stimulus actually functions as a reinforcer.

As an example of a reinforcer assessment, Wacker, Berg, Wiggins, Muldoon, and Cavanaugh (1985) used a stimulus nomination procedure to evaluate the potency of reinforcing stimuli. The participants were 5 students with profound mental retardation and multiple disabilities who were attending public school classrooms at a secondary school. Target behaviors (i.e., raising of the head or arm) were recorded in both frequency and duration. Stimuli nominated by teachers and then used as potential reinforcers included toys and devices that served to provide immediate consequences upon completion of the target behavior.
During baseline, the students were instructed to perform target behaviors and received no reinforcement for their compliance. Once baseline data trends were established, a microswitch system delivered a potential reinforcer immediately after a target behavior occurred. All 5 students exhibited increases in target behaviors as a function of the introduction of reinforcers (Wacker et al., 1985), thus demonstrating that these teacher-nominated stimuli functioned as reinforcers for all 5 of the students.

In research and in practice, it is advantageous to conduct stimulus preference and reinforcer assessments because research has shown that, together, they may lead to the identification of stimuli that function as reinforcers for some individuals. Various models for stimulus preference assessment have been developed and empirically evaluated, with most arising from three prominent assessment methods: forced choice, multiple-stimulus, and nomination preference assessment. Forced-choice and multiple-stimulus methods, which typically involve the presentation of more than one stimulus at once, have typically been used to identify preferred items for individuals with developmental disabilities or young children. The nomination preference assessment method, however, has typically been used with higher functioning children, their teachers, and their parents.

Stimulus Preference and Reinforcer Assessments

The stimulus preference assessment literature generally utilizes young participants and individuals diagnosed with severe or profound developmental disabilities. Preference assessments can be useful for these populations because individuals diagnosed with severe developmental disabilities may not have the ability to verbally report their preferences to another person or comprehend direct questions related to preference (e.g., “Which of these do you like best?”). Similarly, young children may not be accurate when
Methods most often used for preference assessment in the current literature include single-item presentation preference assessment, forced-choice stimulus preference assessment, and multiple-stimulus preference assessment. These preference assessment methods will be reviewed below.

Direct Observation and Single Item Presentation

Direct observation, a common method of preference assessment, involves observing a person in his/her natural environment and recording which items in the room are being attended to or engaged with most frequently (Spiegler & Guevremont, 1993). When using direct observation procedures, time engaged with a specific object is used as a measure of preference. In other words, when a stimulus is attended to more frequently, it is assumed to be more preferred.

Pace, Ivancic, Edwards, Iwata, and Page (1985) first utilized direct observation procedures to identify and assess preferred stimuli. The experiment was conducted in two phases. The purpose of the first phase was to identify preferred stimuli by directly observing behavior. During this phase, a preference assessment of 16 stimuli was conducted with 6 individuals diagnosed with mental retardation in a clinic setting. Two stimuli from each of the following eight categories were used: visual, auditory, olfactory, edible, tactile, social, temperature, and vestibular.

The researchers used a single-item presentation preference assessment method (i.e., each stimulus was presented one at a time). The stimuli were placed approximately 10 to 20 in. in front of the individual. Responses from the participants were either recorded as approach (i.e., moving toward or making physical contact with an item within 5 s after presentation of the item) or non-occurrence (i.e., no approach response).
observed). If the participant approached the item within 5 s, the stimulus was then presented to the participant (e.g., a jar containing an olfactory stimulus would be opened) for an additional 5 s. In contrast, if no approach response occurred, the participant was prompted to sample the stimulus. This ensured that preference was not a function of familiarity with any particular item(s). When an approach response was made during at least 80% of the trials, the stimulus was categorized as high preference. Non-preference was defined as making an approach response on 50% or less of the trials (Pace et al., 1985).

To assess the strength of the approached stimuli as reinforcers, Pace et al. (1985) conducted Phase 2 of the study. During this phase, specific target responses (i.e., reach, look, raise your hand, touch my hand, and saying “eat”) were defined and then consequated by either (a) no consequence, (b) brief access to the high preference stimulus, or (c) brief access to a nonpreferred stimulus. The researchers were only interested in comparing high preference and non-preferred stimuli; therefore, all stimuli with approach responses between 50 to 80% were excluded from Phase 2. The use of preferred stimuli following the target behavior resulted in higher rates of responding when compared to baseline and nonpreferred conditions.

Although the work of Pace et al. (1985) inspired the development of multiple systematic preference assessment methods, there were some limitations of the study. One limitation of Pace et al. was failure to determine the participants’ familiarity with all items. Approach responses may have been made due to the presentation of novel stimuli, rather than an actual preference for a particular stimulus. Stimuli may have been categorized as preferred when the approach response occurred due to the novelty of the
stimulus rather than its reinforcer potential, which would result in a number of false-positives. In addition, the rank of preferred stimuli (e.g., high vs. low) could not be determined because the participant could approach each of the stimuli. Ranking stimuli in order of preference would have allowed researchers to relate preference rank with actual reinforcement. Without knowing the rank of the most effective reinforcer (i.e., the stimulus that resulted in the most behavior change), it is unknown whether highly preferred stimuli were more effective than less preferred stimuli.

**Forced-Choice Preference Assessment**

Forcing a participant to choose between stimuli addresses the latter procedural limitation of Pace et al. (1985). Forced-choice procedures require that participants choose between two stimuli presented simultaneously. Forcing participants to choose between two items, rather than simply approach or not approach an item, allows researchers to rank preferences which could be used in ranking the efficiency with which reinforcers influence behavior. Fisher et al. (1992) implemented a forced-choice component, originally developed by Mason, McGee, Farmer-Dougan, and Risley (1989). The purpose of Fisher et al.’s study was to conduct forced-choice stimulus preference assessments and compare the results with the single item presentation method used by Pace et al. to determine whether the same stimuli would be identified in both preference assessments. Fisher et al. implemented the study in two phases. The purpose of Phase 1 was to conduct the forced-choice and single-item preference assessment procedures and then calculate the reliability between the two procedures. Fisher et al. presented the 16 items from the standardized list used in Pace et al. (1985). During the forced-choice preference assessment, the items were presented multiple times in 120 randomly assigned pairs.
When two items were presented, raters scored the participants’ responses as approach or non-occurrence for each item. Approaching both items was blocked by the researcher.

The single item presentation method was then conducted with the same participants, resulting in a total of two sets of preferred stimuli for each participant. The results from Phase 1 suggested that the forced-choice assessment had good concurrent validity with the single-item presentation method.

The purpose of Phase 2 was to conduct a reinforcer assessment for each of the preferred stimuli and then to verify that the item selected indeed functioned as a reinforcer. Fisher et al. (1992) compared the forced-choice and single item presentation methods to determine which of the two identified salient reinforcers with the most accuracy. Results suggested that using a forced-choice format during the preference assessment resulted in a better prediction as to which stimuli would function as potent reinforcers. Therefore, the researchers concluded that the forced-choice method had better predictive validity. The forced-choice format also resulted in fewer items identified as highly preferred. One limitation of Fisher et al. is that the power of individual stimuli to act as reinforcers could not be evaluated because Phase 2 only involved the presentation of items in pairs.

The work of Pace et al. (1985) and Fisher et al. (1992) was replicated and extended by Paclawskyj and Vollmer (1995). The researchers compared the single-item presentation method to the forced-choice method, but evaluated their effectiveness with 4 children with developmental disabilities and visual impairment. Paclawskyj and Vollmer first conducted both preference assessments with all participants using an identical set of items. The only distinction between assessments was the number of items presented.
Items belonged to one of four major categories: edible, social, tactile, and auditory. Stimuli were then tested to determine whether they functioned as reinforcers.

Paclawskyj and Vollmer conducted reinforcer assessments by applying preferred stimuli to a skill acquisition task. Three types of stimuli were compared: stimuli chosen in both preference assessments, stimuli chosen using the forced-choice method but not the single-item method, and stimuli chosen using the single-item method but not the forced-choice method. Stimuli were delivered to the participants contingent upon their completion of a task. Tasks used in reinforcer assessments were nominated by the children’s teacher and were performed inconsistently prior to reinforcement. Results showed that the forced-choice preference assessment was able to identify more powerful reinforcers than the single-item method for all participants. The researchers concluded that simply presenting an item, without verbally directing them to choose or not choose the item, may not have been effective due to the visual impairment of the participants.

Further methods for assessing stimulus preference have been developed since to address other possible limitations of single-item presentation or forced-choice methods.

*Multiple-Stimulus Preference Assessments*

Another method for assessing stimulus preference, the multiple-stimulus preference assessment, increases the number of items presented to the individual at once. The multiple-stimulus method involves the presentation of three or more items and allows the individual to choose from the items freely. A study by Windsor, Piche, and Locke (1994) used a multiple-stimulus preference assessment with six items. During each trial, all of the stimuli were presented, and the participant was instructed to choose one item. The stimulus chosen most often was labeled as preferred. Windsor et al. concluded
that the amount of time involved in preference assessment was shortened. By assessing the preference of six items at once, fewer trials were needed to differentiate between stimuli. However, the stimuli could not be ranked in order of preference because the participant could choose the same item repeatedly on each trial. Ranking stimuli is important because it allows the researcher to choose the most potent stimuli to use in an intervention. Ranking stimuli therefore allows for making better conclusions about the preference of an item and its actual performance as a reinforcer.

Roane, Vollmer, Ringdahl, and Marcus (1998) studied the effectiveness of the multiple-stimulus preference assessment method with young children and adults with levels of mental retardation ranging from moderate to profound. The researchers compared a brief (i.e., 5 min) version of the multiple-stimulus method with forced-choice preference assessment outcomes. The outcome of each preference assessment, as well as the duration of each assessment, was compared. In addition, Roane et al. recorded occurrences of inappropriate behavior (e.g., self-injury, aggression, stereotypy, disruption, and tantrums) as well as attempted escape from the assessment. Reinforcer assessments consisted of the placement of preferred items at various work stations. Participants were allowed the opportunity to complete a task in order to access the item. Results indicated that brief multiple-stimulus preference assessments identified stimuli that were reinforcers, were associated with fewer problem behaviors, and required less time to complete when compared to forced-choice preference assessment. Although the brief multiple-stimulus assessments were useful, the continuous access to all stimuli could have resulted in satiation for some participants. Restricting access to an item once it was established as preferred could have addressed this limitation.
DeLeon and Iwata (1996) further investigated the use of multiple-stimulus preference assessment procedures to identify reinforcers. The researchers compared three methods, including the forced-choice procedure described by Fisher et al. (1992) and the multiple-stimulus method described by Windsor et al. (1994). To study the reinforcing qualities of ranked items, DeLeon and Iwata developed a multiple-stimulus presentation without replacement (MSWO) method and compared it with the forced-choice and multiple-stimulus preference assessment methods. The original multiple-stimulus procedure and the MSWO method differ in that the latter does not allow the participant to choose the same item for every trial (i.e., the item selected in one trial is not available in subsequent trials). Therefore, the MSWO method allows the researcher to rank the participant's preference for the stimuli.

To investigate the similarity of outcomes across procedures, DeLeon and Iwata (1996) conducted five consecutive stimulus preference assessments for each of the three methods. The researchers then attempted to determine differences in preference assessment results by selecting four items that were chosen from MSWO and forced choice procedures, but never selected during multiple-stimulus preference assessment (i.e., fruit juice, beets, peanut M&M candy, and chewing gum). Target responses, which differed across participants, were consequated with one of the four items on a continuous reinforcement schedule. For three of the four participants, items that had never been selected during the multiple-stimulus procedure produced increases when delivered contingent on target behavior. Therefore, the multiple-stimulus method was more likely to produce false-negatives, and the researchers concluded that the MSWO procedure was more efficient for identifying potential reinforcers.
Authement (2003) extended previous research with multiple-stimulus preference assessments by utilizing general education students. The study was conducted in three phases. During Phase 1, the students were assessed using a verbal forced-choice (VFC) procedure, pictorial forced-choice (PFC) procedure, and the MSWO procedure described by DeLeon and Iwata (1996). In addition parents, teachers, and students were interviewed using a modified version of the Children's Reinforcement Survey developed by Cautela, Cautela, and Esonis (1983).

In Phase 2, Authement (2003) used a letter cancellation task to assess potential reinforcers previously identified during preference assessments. During reinforcer assessments, all stimuli were within range of sight of the participants. For each minute the student remained on-task during the letter cancellation activity, the students were presented with a token. After the conclusion of a session, the students were allowed 30 s to access the stimuli for each token they had earned.

Authement (2003) then conducted a follow-up session (Phase 3) to determine whether student preference had changed over time. The researcher compared the effectiveness of VFC, PFC, and MSWO procedures to identify reinforcers. Although the MSWO procedure was much more time efficient than the other two procedures, taking less than half the time, the VFC procedure was the most effective at accurately predicting the potency of stimuli. In addition, teacher, caregiver, and student surveys did not identify functional reinforcers for general education students. One possible limitation of this study involves the selection of possible reinforcing stimuli. Although a pragmatic issue, only stimuli approved by the teacher were available for student and parent...
preference assessments in order to guarantee that items would be appropriate for the classroom environment.

*Stimulus Nomination Preference Assessment*

In addition to identifying reinforcers from a standardized list of stimuli, methodologies for creating individualized preference choices have also been developed. One common methodology is the stimulus nomination procedure. This procedure, also known as direct questioning, occurs when an individual, their teacher, or their caregiver nominate a stimulus that could be a potential reinforcer. Due to the focus of the current study, only the child and teacher nomination stimulus preference assessment procedures, as well as the literature supporting their use, will be discussed in detail. For more detail concerning the caregiver nomination preference assessment procedures, refer to the work of Fisher, Piazza, Bowman, and Amari (1996).

Nominations for possible reinforcers may be generated either through questioning of the person, or by having the person rank more specific preferences to classes of stimuli. Typically, the person being questioned is responding to a survey and indicating items which may be reinforcers (see Authement, 2003). This method of stimulus preference is typically conducted with individuals with higher verbal ability, especially if the student or individual themselves are completing the questionnaire.

*Teacher nomination.* Steege, Wacker, Berg, Cigrand, and Cooper (1989) determined the reinforcing properties of items selected using a teacher nomination procedure as compared to items selected during a single-item presentation method developed by Pace et al. (1985). The study was conducted in two phases, and the participants were 2 students with severe handicaps exhibiting self-injurious behavior.
All sessions with both participants occurred in classroom settings and were conducted by the teachers. In Phase 1, the teacher nominated two potentially reinforcing stimuli for the first student (i.e., radio and room fan). Steege et al. assessed the reinforcing properties of the stimuli by presenting them contingent on student activation of a microswitch. Both stimuli functioned as reinforcers, as seen by an increase in the responses of the student. The researchers then successfully used the two stimuli in a behavioral intervention designed to decrease the self-injurious behavior (SIB) of the student (Steege et al.).

During Phase 2, Steege et al. (1989) sought to increase the on-task behavior of the second participant. The student was a 4 year-old referred for a behavioral assessment of SIB (i.e., hair pulling). On-task behavior (e.g., visual attention to stimuli, appropriate interaction with stimuli, etc.) and instances of SIB were recorded during baseline and treatment sessions. Teacher nominated items (i.e., drink of water, slide, and language book) were used to design a differential reinforcement of alternative behavior intervention. Results indicated that the treatment package resulted in an immediate decrease in the occurrence of SIB and an increase in appropriate on-task behavior. The researchers concluded that both phases provide support for systematic teacher nomination procedures when identifying reinforcers for students.

Daly, Jacob, King, and Cheramie (1984) focused on the ability of general education teachers to accurately predict the preferences of their students. The intent was to assess whether teachers in a general education setting could identify items on a survey that highly correlated with the preferences of their students. The researchers first surveyed 4th and 5th grade students and recorded the items identified as liked “very
much.” They then surveyed the homeroom teacher of each student. The teachers were asked to complete the survey as he or she predicted the student would complete it. Daly et al. found that the teachers were moderately successful in predicting the preference of their students. Due to the extreme variability in the individual correlations \( .01 < r_{xy} < .61 \), Daly et al. concluded that teachers may or may not accurately predict the preferences of students in their classroom. The researchers suggested, nonetheless, involving students during preference assessment. Teachers may be useful in the process of identifying potential reinforcers for general education students; however, no reinforcer assessments were conducted in the study.

Fantuzzo et al. (1991) also investigated teachers’ ability to identify appropriate reinforcers for their students. The purpose of the study was to examine the correlation between the types of rewards used by teachers and the preferences of the students. Five schools participated in the study, where 98 students were assessed using the Child Reinforcement Survey (CRS). The survey categorized 36 items into the following categories: (a) things to eat, (b) things to keep, (c) activities, (d) things teachers say or do, and (e) not applicable. The researchers found that children showed a wide variety in preference across categories. The reward choices of the teachers did not match those of their students, indicating that teachers may underestimate the value alternative classroom rewards may have as reinforcers and possibly overestimate the value of other stimuli.

**Student nomination.** As an alternative to conducting stimulus preference assessments with teachers, student nomination preference assessment procedures have also been developed. For example, LaFleur (1998) compared preference assessment to alternative methodologies (i.e., descriptive analysis and experimental analysis). The
researchers attempted to determine which method yielded the most useful information for intervention design. Six elementary-age participants from general education were assessed using all three methods. Off-task behavior was recorded for all participants, and the function of the behavior was determined using the descriptive and experimental procedures. Students then verbally responded to a list of stimuli, indicating which items were preferred.

LaFleur (1998) then developed interventions relative to each phase of the study. The experimental analysis phase yielded data supporting the presentation of teacher attention contingent upon on-task behavior, whereas the intervention developed from the descriptive analysis phase involved the manipulation of on-task difficulty. The preference assessment phase was used to develop a third intervention, which allowed participants to access preferred stimuli contingent upon appropriate on-task behavior. LaFleur examined outcomes of a minimum of two treatments for each participant in order to identify the most effective intervention. The use of descriptive analysis was found to be as effective as experimental analysis in determining possible functions for inappropriate behavior. However, the “treasure chest” intervention derived from the preference assessment resulted in an equal or greater behavior change than interventions developed from the other two phases.

The results from LaFleur (1998) support the use of reinforcement-based interventions based on student nomination stimulus preference assessment outcomes. One possible limitation of this study is that the “treasure chest” intervention also included teacher attention. Students were provided with the attention before accessing the intended reinforcer. Therefore, it is unclear if behavioral improvements occurred due to the actual
intervention or if they were a byproduct of teacher attention contingent upon appropriate behavior. The results of LaFleur were replicated and extended by George (2000). To address the limitation of LaFleur (1998), a changing conditions within subject, multiple baseline across subjects design was used. Therefore, behavior change for each participant could be compared while controlling for order effects of multiple interventions. Results indicated that interventions derived from the preference assessment were still more powerful than the interventions derived from the descriptive and experimental analyses.

Northup, Jones, Broussard, and George (1995) attempted to extend preference and reinforcer assessment to children with Attention-Deficit/Hyperactivity Disorder (AD/HD). The researchers compared three different methods of selecting preferred stimuli for potential reinforcers: student nomination, verbal forced-choice questionnaire, and direct observation. The participants were 10 students diagnosed with AD/HD.

The children's preference of five toys was assessed three times. In the first assessment, the children were each asked to identify one toy as preferred. Next, the verbal forced-choice questionnaire was administered during which each child was asked about the preference between two of the five toys until all possible pairs had been presented. The third assessment consisted of directly observing each child, who was left alone with all five toy items. Observers recorded intervals of time the child engaged with each toy, and preference was defined on the basis of time of engagement.

Northup et al. (1995) then used a reinforcer assessment with academic tasks to determine whether preferred items would increase academic behavior. The forced-choice questionnaire identified reinforcers 70% of the time, and the direct observation method identified reinforcers 60% of the time. The child nomination method only identified
reinforcers 40% of the time. These results suggest that verbal forced-choice questionnaires can enhance reinforcer assessments with children capable of verbal communication.

In another study, Northup, George, Jones, Broussard, and Vollmer (1996) compared verbal forced-choice questionnaires with two more preference assessment methods. The researchers developed a reinforcer survey and a pictorial stimulus-choice procedure. Stimulus preferences for 4 children with AD/HD were assessed with each of the three methods. Northup et al. wanted to investigate possible correlations between preferences for specific stimuli, as well as correlations between preferences for categories of stimuli. Five categories of stimuli were presented, including (a) edible items (e.g., fruit), (b) tangible items (e.g., stickers), (c) activities (e.g., computer games), (d) social attention (e.g., teacher says “good job”), and (e) negative reinforcement (e.g., removal of a math assignment).

Northup et al. (1996) began by conducting three preference assessments for each participant. During the first preference assessment, the researchers verbally surveyed the students to determine their preferences for stimuli from the five categories. To establish the ranks of the preferences, students were asked to rate their preference for each stimulus as “not at all,” “a little,” or “a lot,” and a percentage score was calculated for each category. The second assessment consisted of the administration of a verbal forced-choice questionnaire. Students were instructed to choose one category of stimuli over another (e.g., social attention could be chosen over tangibles). A third preference assessment was conducted using a pictorial forced-choice procedure. The researchers created coupons, and each coupon represented a stimulus category by depicting the
category pictorially. Students were asked to physically pick one of two simultaneously presented coupons. No verbal response was required from the student.

The color-coded coupons created by Northup et al. (1996) to represent each category were then used during reinforcer assessments. During baseline, the coupons were distributed and the participants were allowed to exchange them for access to a stimulus in the corresponding category. After baseline data were established, students had to complete a predetermined amount of work to be reinforced with a specific category's coupon. Participants could then choose to either complete work and gain access to the stimulus category of the coupon, or move on to a different stimulus category.

Northup et al. (1996) compared the results of the reinforcer and preference assessments and found that when the verbal reinforcer survey was used alone, the researchers were not able to differentiate between high and low reinforcer preferences for children diagnosed with AD/HD. However, the verbal and pictorial forced-choice methods identified high and low preference categories 70% and 80% of the time, respectively. These results suggest that surveys may tend to overestimate high preference categories (resulting in false positives) and underestimate low preference categories (resulting in false negatives). Also, surveys are less likely to correspond with the results of reinforcer assessment procedures.

Fielder (2005) also studied the stimulus nomination procedure, but extended the literature to include secondary general education students (i.e., middle school). The researcher compared student nomination, teacher nomination, and caregiver nomination preference assessment procedures. The 4 participants responded to a survey called the Secondary Reinforcer Menu (Jenson, Rhode, & Reavis, 1994). Participants indicated
their three highest-ranked, most preferred items. The procedure was repeated for both
teacher and caregiver items, resulting in three conditions for each participant.

After presenting a number cancellation task to establish baseline cancellation
scores for each participant, Fielder (2005) conducted reinforcer assessments using an
alternating-treatments design (ATD). Students who achieved a number cancellation score
higher than their baseline median score were allowed to choose one item from the three
highest-ranked items in that condition. Although overall increases in behavior were seen
as a result of the presentation of reinforcement, results did not show one preference
assessment to be better able to identify reinforcers than another. Limitations of the study
by Fielder included the possibility for overlap between the conditions. In some cases, two
of the three items used in the reinforcer assessment conditions were identical. This
decreased the distinctiveness of the conditions, and possibly accounted for the lack of
differences between reinforcer assessment conditions. Another limitation is that
preference was only assessed at one point in time. Assessing preference over time for at
least one condition would have enabled Fielder to determine whether a change in
preference had occurred, and if change did occur, whether it would have led to more
substantial increases in behavior.

Student On-going Preference Assessment

Although preference assessment methods, such as forced-choice, multiple-
stimulus, and stimulus-nomination, have been shown to be effective, they do not allow
for systematic assessment of preference over time. On-going assessments, however, are
useful for assessing an individual’s stimulus preference more frequently (e.g., at the
beginning of each session). Changes in reported preferences would be a logical result of
changing establishing operations which may influence an individual. Michael (1982) defined establishing operations as events, operations, or stimulus conditions in the environment which temporarily strengthen or weaken the effectiveness of a reinforcer, in addition to increasing or decreasing the likelihood that the individual will engage in behaviors which granted them access to the stimulus in the past. For example, a headache may increase the reinforcing effectiveness of aspirin, thereby increasing the likelihood that an individual will exhibit behaviors which have led to the ingestion of aspirin (e.g., walking to the cupboard, opening the bottle, and swallowing pills). In an attempt to determine whether changes in the environment affect individual preference, research assessing on-going stimulus preference has been conducted in hopes that more frequent assessment results in more accuracy when identifying potential reinforcers.

Mason et al. (1989) first introduced on-going preference assessment procedures by extending the research of Pace et al. (1985). The researchers implemented a forced-choice preference assessment and conducted mini-assessments before each session began. These mini-assessments were used to determine the participants’ change in preference over time, and are therefore referred to as on-going preference assessments. In addition to comparing methodologies, the purpose of Mason et al. was to compare teacher versus student-selected potential reinforcers. Participants were 3 children who presented characteristics of autism and were receiving early intervention services. Each participant displayed individual maladaptive behaviors. During each on-going assessment, which was conducted in an open classroom, stimuli were displayed on a table out of reach of the child.
Mason et al. (1989) first presented 16 stimuli, identical to those presented in Pace et al. (1985), using both the single-item presentation method and also the forced-choice methodology. Single-item stimulus presentation procedures were similar to those of Pace et al. Preferred stimuli, which were approached during at least 80% of the trials, were then used during the forced-choice preference assessment. During the forced-choice procedure, the researchers paired stimuli and instructed the participant to choose one. Selected items were used as consequences in skill acquisition tasks. Two treatment conditions were then conducted; one condition utilized stimuli that were selected by the participant, whereas the second used stimuli available in the classroom which were selected by the teacher.

During skill acquisition phases, the use of student-selected stimuli correlated with decreases in maladaptive behavior. In addition, teacher-selected stimuli were associated with both increases in correct responding and decreases in out-of-seat behavior. Mason et al. (1989) suggested that the use of mini-assessments, which were ongoing and therefore assessed participant preference more often, can significantly decrease maladaptive behavior. On-going assessments are more sensitive to changes in participant preference over time, which is exhibited by the low occurrence of consecutive item selection across sessions. In addition, Mason et al. also showed that teachers selected similar items as that of their students, although the reinforcing value of social activities was overrated.

Schanding (2004) also studied the accuracy with which teachers and students could identify reinforcers while incorporating on-going preference assessment procedures. Elementary students from a general education setting were evaluated through student nomination and on-going stimulus preference assessment methods. In addition,
the students' teachers were assessed using the teacher nomination assessment method. While alternating the highest-ranked stimuli from each of these assessments, reinforcer assessments were conducted with each participant. Schanding concluded that the three stimulus preference assessment methods produced similar results and that teacher nomination, student nomination, and on-going preference assessments could all be used to select stimuli to be used as reinforcers with general education students. One major limitation of the study was that students were only allowed 2 minutes to complete the task; therefore, the amount of work that could be done was limited. The authors could have addressed this limitation by allowing students to work longer, thereby providing them the opportunity to become tired/bored with the task and work harder for the reinforcer.

Rationale and Purpose of the Present Study

The accurate identification of reinforcers is critical to the implementation of behavioral interventions. Such interventions are used for behavior management in some classrooms in general education settings. A stimulus that does not increase the frequency of the desired behavior is not, by definition, a reinforcer. Appropriate preference assessment procedures may enable teachers to choose powerful stimuli to use in interventions in the classroom. For this reason, research in the area of stimulus preference assessment is important for the future success of behavioral interventions. Procedures for conducting preference assessments, including the nomination procedures for teachers and students, can be combined with other tools such as verbal surveys and on-going preference assessment methodology.
Some previous research has indicated that teachers and students are able to identify reinforcers for general education students (e.g., Fielder, 2005; Schanding, 2004), whereas other studies have challenged the use of teacher and student nomination procedures for this population (e.g., Authement, 2003). Specifically, it has been suggested that teacher and student nomination procedures may not be successful at identifying reinforcers which will increase on-task behavior (Authement). Failure to identify procedures for increasing an ecologically valid behavior, such as on-task behavior in the classroom, decreases the importance of more controlled studies involving novel tasks (e.g., number or letter cancellation). In other words, behavioral improvements seen with non-academic, novel tasks may not correlate with results of reinforcement-based interventions in the classroom. It may be that procedures identifying reinforcers that significantly increase behavior in one instance will not do so when applied to “real world” situations. Therefore, it is important to identify stimulus preference assessment methodologies that will successfully identify reinforcers that increase actual classroom behavior (i.e., on-task).

Early research in stimulus preference assessment mainly utilized individuals with developmental disabilities; however, more recent studies have been conducted on stimulus preference and reinforcer assessments with general education students. The general education preference assessment research completed thus far has focused mostly on younger students, usually in elementary school, with the exception of one study (i.e., Fielder, 2005). For the most part, secondary students in general education have been ignored in the preference and reinforcer assessment research literature. Although Fielder argued that stimulus nomination procedures were successful for reinforcer identification
with secondary students, it is currently unknown whether these preference assessment methods will be successful in predicting reinforcers for a behavior that is more ecologically valid (i.e., on-task). Without empirical support for the use of current preference assessment methodologies when identifying potential reinforcers for actual classroom behaviors, reinforcement-based interventions could potentially be less successful and therefore less efficient. In addition, students referred for behavioral or academic performance problems need to be included in research. In general education settings, students referred for such problems have more potential to receive a reinforcement-based intervention, and such interventions may be more beneficial when stimuli are evaluated on an on-going basis.

The purpose of the current study was to determine whether preference assessment methods used for younger children would also be effective with general education secondary students (i.e., middle school) when applied to a more ecologically valid classroom behavior (i.e., on-task). Teachers and students were asked to identify potential reinforcers in a nomination preference assessment. In addition, an on-going preference assessment was conducted with each participant to determine whether changes in preference occurred over time, and whether assessing such changes provided a more accurate identification of reinforcers. Currently, published research does not support the conclusion that specific procedures to identify reinforcers for participants with developmental disabilities and/or elementary age students can be as successful with secondary students when they are required to remain on-task in the classroom to gain access to reinforcement. Results from the present study are needed to address the issue of
possible difficulty associated with assessing preferences of middle school students in the general education setting.

The current study extended prior research by focusing on middle school students, by including student on-going preference assessment, and by utilizing an ecologically valid dependent variable (i.e., on-task). Due to a growing amount of research focused on elementary students in general education, additional studies which focus on middle school students logically follows the progression of applied research. By conducting three preference assessments (i.e., teacher, student, and student on-going), information from multiple informants was compared. In addition, reinforcer assessments were conducted to determine which preference assessment method was the most successful at identifying reinforcers. Reinforcer assessments were conducted because they are necessary to validate results from stimulus preference assessments (Authement, 2003).

Research Questions

The following research questions were be evaluated in this investigation:

Question 1

Will teacher stimulus nomination, student stimulus nomination, and student on-going preference assessment procedures be successful in identifying reinforcers for on-task academic behavior of secondary general education students?

Question 2

Which procedure (i.e., teacher nomination, student nomination, or student on-going) will most accurately identify reinforcing stimuli for on-task academic behavior?
CHAPTER II

METHOD

Participants and Setting

Participants consisted of 5 general education students in grades 6th and 8th and their teachers. The students were selected after being referred to his or her Teacher Support Team (TST) because of academic and/or behavioral concerns in the classroom. Participants did not have any previous or current diagnoses regarding physical impairments, cognitive impairments, or behavioral problems and did not qualify for a special education ruling. In addition, pre-baseline observations were conducted to assess the students' levels of on-task behavior in the classroom. Students were required to be on-task less than 70% of observation intervals to be included in the study. Informed consent was obtained from the teachers and parents of the students (Appendices A and B). Students themselves were also asked to give their assent to participate in the study (Appendix C). All sessions took place at the students' school, with observations occurring during regular classroom instruction. No more than one session was conducted on any particular day. Teacher participation was limited to completion of a reinforcer survey in which they were asked to rank order potential reinforcing stimuli.

All five participants were referred by their classroom teachers for difficulty remaining on-task during regular classroom instruction. The first and second participants, Terri and Kathy, were 12 year-old Caucasian females in 6th grade. Terri was observed during her Social Studies class, while Kathy was observed during Mathematics. The third participant, Matthew, was a 13 year-old Caucasian male in 6th grade and was observed during his English class. Devon, the fourth participant, was a 14 year-old, African-
American male in the 8th grade and was observed during Mathematics. Finally, Megan was a 14 year-old African-American female in the 8th grade and was observed during her History class.

Materials

Secondary Student Preference Menu

The Secondary Student Preference Menu (SSPM), used in the current study, was adapted from the Secondary Reinforcer Menu originally developed by Jenson, Rhode, & Reavis (1994). The Secondary Reinforcer Menu is a reproducible list that consists of 20 specific potential reinforcers that are typically used in school-based programs and facilitates the interviewing process between the researcher and the student by allowing the student to choose items from a list rather than generating their own suggestions. By limiting student choices to those provided on the menu, items can not only be approved by the teacher, but can also be coordinated with the environment of the classroom. The potential reinforcing stimuli found on the SSPM fall into three major categories: edible items (e.g., pizza), tangible items (e.g., magazines), and activities (e.g., drawing time).

Although all of the 20 items included on the original Secondary Reinforcer Menu may have the potential to act as reinforcers for secondary students, not all of the items were practical for the purposes of the current study and may or may not have been available following reinforcer assessment conditions. Therefore, the primary researcher modified this instrument by adding tangible items (e.g., magazines) and replacing several other items. For similar reasons, other items were removed from the original list (i.e., ticket to a sporting event, participate in an assembly, class trip, ticket to a school dance,
and class party). The result of this modification was the SSPM, a new set of 15 stimuli that were used in the present study.

For purposes of the present study, the stimuli were put into a list which alternated items between edibles, activities, and tangibles (Appendices D and E). Items were administered sequentially from the list of stimuli. The SSPM was used to force teachers and students to rank their top five choices from the list of 15 items, which allowed the researcher to identify the most preferred item. In addition, the SSPM was used during student on-going assessments. Reinforcer assessments then utilized top-ranked items to determine which condition produced the highest level of target behavior.

Procedure

The investigator conducted nomination preference assessments with each student and teacher, using the SSPM, at the beginning of the study. Student on-going preference assessments were conducted only before their corresponding reinforcer assessment session. After baseline data were collected, reinforcer assessments were completed with each student. Therefore, the students were not aware that they were being observed until after baseline sessions were completed. At that time, assent was obtained and stimulus preference assessments identified specific stimuli that were used during reinforcer assessments. Reinforcer assessments helped determine whether or not the identified items by teachers and students were reinforcers and measured the extent to which they influenced student behavior.

Stimulus Preference Assessments

Teacher nomination preference assessment. The SSPM was given to the teachers in a survey format (Appendix D). The teacher originally referring the student to the TST
participated. Teachers were given the following written directions:

The following is a list of things that students sometimes get in school. Answer the form in reference to the student for whom you are filling this out. After reviewing the entire list, rank the top 5 items. Begin by putting a ‘1’ next to the item you believe the student would be most willing to work for. Then decide the next item you think your student would most like to earn and put a ‘2’ to the right of that item. Continue to do this until all five items have been ranked.

The investigator then recorded the highest-ranked stimulus from the teacher survey. During the teacher nomination condition of the reinforcer assessment, the student was presented with the top choice obtained from the teacher survey. Upon completion of the target behavior, the student was allowed to access that item as a reinforcer.

Student nomination preference assessment. The procedure for the student nomination preference assessment resembled the teacher preference assessment methodology. Student preference assessments were conducted by utilizing the SSPM (Appendix E). In contrast to the teacher survey, student preference was assessed in the presence of the investigator. The student was first presented with the SSPM, and then given the following instructions:

Below, there is a list of things that students sometimes get in school. After reviewing the entire list, rank the top 5 items. Begin by putting a “1” next to the item you believe you would be most willing to work for. Then decide the next item you think you would most like to earn and put a “2” to the right of that item. Continue to do this until all five items have been ranked.
The researcher then slowly read the items aloud to the student and allowed the student to rank the items. After the completion of the student preference assessment, the researcher used the student’s top choice during the student nomination condition of the reinforcer assessment. During this reinforcer assessment condition, students completing the target behavior were allowed to access the highest-ranked stimuli.

_Student on-going stimulus preference assessment._ A student on-going stimulus preference assessment was also conducted using the student version of the SSPM, and items were listed in random order. This assessment was conducted each day the student on-going reinforcer assessment condition was implemented. The assessment was conducted using the same procedures as the student nomination preference assessment. The list of items was presented to the student and the directions were reviewed. The student then ranked his or her top five preferences. The highest-ranked item was used during the student on-going reinforcer assessment session that day.

_Reinforcer Assessments_

_Baseline._ Before the student was assessed for stimulus preference, baseline data were collected to determine the level of on-task behavior the student regularly displayed in the classroom of the referring teacher. Classroom activities during baseline and reinforcer assessment conditions were consistent, with no observations occurring at times which might impact levels of on-task behavior (e.g., tests/exams, free time, etc.). This measure was completed without the student receiving reinforcement, and students were not made aware that they were being observed. Students were observed with an on-task classroom observation sheet (Appendix F). Each observation lasted 20 min and was conducted during regular classroom instructional time. Only one observation session was
conducted per day for baseline and reinforcer assessment conditions, and observations were completed by the primary investigator and/or a trained observer. After the researcher determined that baseline data were either stable or exhibited a decreasing trend, reinforcer assessments were then conducted.

Reinforcer assessment conditions. The reinforcer assessments all took place in the student’s school and within the referring teacher’s classroom. For all reinforcer assessment conditions, the student received the directions, “I am going to observe you in class today. I will be looking to see how much you pay attention in your class. If you pay attention today more than you did before, you will receive this item.” The investigator then showed and/or verbally described the specific item which was available as a potential reinforcer to the student for that session. After the observation was completed, the investigator calculated the percentage of intervals in which on-task behavior was observed. The researcher then either delivered the potential reinforcer or informed the student that they did not meet the criterion for delivery of reinforcement. If the student earned reinforcement and the item was from the activity category during any given condition, the student was allowed to participate in the activity for the last 10 min of class.

For a student to meet criterion for reinforcement, the percentage of observation intervals in which the student was on-task had to be above the median performance level in baseline. By specifying the requirement for reinforcement relative to baseline levels, each participant was able to earn reinforcement while still being required to improve their performance. The student was notified of their progress in this manner in order to
facilitate the delivery of reinforcement. If they did not remain on-task for the required
amount of observation intervals, then they did not receive reinforcement.

Design

An alternating treatments design (ATD) was used for reinforcer assessment
conditions. The teacher nomination (TRA), student nomination (SRA), and student on­
going (ORA) reinforcer assessment conditions were implemented. Each assessment
condition consisted of classroom observations. The order of conditions was determined
randomly with the restriction that no one condition could be conducted more than three
times sequentially. During each reinforcer assessment session, the potential reinforcers
presented reflected a teacher nomination, student nomination, or student on-going
stimulus preference assessment. Data collection for all conditions continued until either
divergence was observed in the data, or until six sessions with each stimulus had been
conducted.

Data Collection and Analysis

Interobserver Agreement

The researcher calculated the percentage of intervals that the student remained on-
task for each session, and a second rater both observed and calculated on-task
percentages for 33 to 36% of the sessions for each participant. Additional observers were
present during these sessions, along with the primary investigator, and provided with
operational definitions, examples, and non-examples for on-task behavior to ensure that
agreement criteria would be met. Agreement was calculated by dividing the number of
total interval agreements by the total number of agreements and disagreements and
multiplying by 100. The minimal requirement for this study was at least 90% agreement. Rater agreement averaged 99.6% (range = 96-100%).

Procedural Integrity

For approximately 33% of both the stimulus preference assessments and reinforcer assessments, procedural integrity was calculated. Checklists were completed by a second observer (Appendices G, H, I, and J) to ensure the primary investigator followed specified criteria. The second observer was instructed to immediately provide the investigator with corrective feedback if integrity fell below 90%; however, treatment integrity measures remained at 100% for all participants.

Dependent Variable

The dependent variable was the percentage of observation intervals which the student was on-task during classroom instruction. A 10 s whole-interval recording procedure was utilized, meaning that a student was to remain on-task during an entire interval in order for it to count toward their overall percentage. For the purposes of the current study, on-task was defined as the following: (a) facing and physically looking toward the appropriate academic stimulus on the student’s desk, (b) facing and physically looking toward the appropriate stimulus of general instruction (e.g., a chalkboard), or (c) facing and physically looking toward the person responsible for providing the academic instruction (e.g., a teacher). Students were allowed 3 s to look away from the instructional materials or instructor without being considered off-task. If the student was engaging in disruptive behavior, such as talking to another student or walking around the room without permission, on-task behavior was not recorded. The percentage of intervals on-
task represented the student’s score. This score was then compared to previous scores to determine the student’s eligibility to receive reinforcement.

Data Analysis

Visual analysis was used to determine changes in behavior patterns across conditions. The data were graphed to visually reveal divergence between conditions. Each reinforcer assessment condition was represented by an individual data series and tracked changes that occurred in that condition. Divergence in data was analyzed by visual inspection of graphed data. The term divergence is defined as a separation in data series across conditions. A reinforcer assessment method would be considered more powerful if it resulted in the greatest increase in on-task behavior in the classroom, measured by comparing baseline data, and resulted in a divergent data series above the other conditions.
CHAPTER III
RESULTS

Stimulus Preference Assessment Procedures

The SSPM

The SSPM was distributed to each participant, as well as the teacher for each participant. Each SSPM resulted in five top-ranked choices for reinforcers. The results of the SSPM were used to determine which item a student would choose from during reinforcer assessment conditions. Table 1 shows the items ranked highly for each participant in regard to teacher and student nomination conditions. Specifically, the top five items ranked during the TRA and SRA are represented. In addition, the three items picked most often during student ongoing preference assessments are shown for each student. Items in bold print represent the item picked most often during the ORA condition for that participant.

All highest-ranked selections made using the SSPM were available during their corresponding reinforcer assessment condition (e.g., the highest-ranked item chosen by the teacher was used during the TRA condition). There were no instances in which a teacher had the same highest-ranked item as their corresponding student. In addition, the item chosen by the student for the SRA condition was usually not chosen during the ORA condition, and was never the same as the item chosen most often for the ORA condition.

Reinforcer Assessment Conditions

Figures 1-5 illustrate the level of on-task behavior, represented by the percentage of observation intervals, for all participants across baseline and reinforcer assessment conditions. Figure 1 shows that the first participant, Terri, displayed a baseline mean of
**Table 1**

*Highest-Ranked Items Across Preference Assessment Conditions*

<table>
<thead>
<tr>
<th>Student</th>
<th>TRA Items</th>
<th>SRA Items</th>
<th>ORA Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terri</td>
<td>Candy</td>
<td>Reading Time</td>
<td>Magazine (3), Snack Food (2), Soda (1)</td>
</tr>
<tr>
<td></td>
<td>Soda</td>
<td>Drawing Time</td>
<td>Magazines</td>
</tr>
<tr>
<td></td>
<td>Snack Food</td>
<td>Magneses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fast Food</td>
<td>Drawing Markers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magazines</td>
<td>Soda</td>
<td></td>
</tr>
<tr>
<td>Kathy</td>
<td>Candy</td>
<td>Play a Video Game</td>
<td>School Supplies (4), Basketball or Baseball Cards (1), Snack Food (1)</td>
</tr>
<tr>
<td></td>
<td>Soda</td>
<td>Reading Time</td>
<td>Magazines</td>
</tr>
<tr>
<td></td>
<td>Snack Food</td>
<td>Magazines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pack of Gum</td>
<td>Skip Homework</td>
<td>Basketball Cards</td>
</tr>
<tr>
<td></td>
<td>Markers/Pencils</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew</td>
<td>Candy</td>
<td>Play a Video Game</td>
<td>Soda (3), Play a Video Game (2), Snack Food (1)</td>
</tr>
<tr>
<td></td>
<td>Snack Food</td>
<td>Skip Homework</td>
<td>Fast Food</td>
</tr>
<tr>
<td></td>
<td>Music</td>
<td>Soda</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pack of Gum</td>
<td>Magazines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reading Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devon</td>
<td>Soda</td>
<td>Pack of Gum</td>
<td>Basketball or Baseball Cards (4), Candy (1), Snack Food (1)</td>
</tr>
<tr>
<td></td>
<td>Candy</td>
<td>Candy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skip Homework</td>
<td>Skip Homework</td>
<td>Video Game</td>
</tr>
<tr>
<td></td>
<td>Snack Food</td>
<td>Video Game</td>
<td>Soda</td>
</tr>
<tr>
<td></td>
<td>Music</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Megan</td>
<td>Soda</td>
<td>Candy</td>
<td>Magazine (3), Play a Video Game (2), Candy (1)</td>
</tr>
<tr>
<td></td>
<td>Snack Food</td>
<td>Magazines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skip Homework</td>
<td>Soda</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Candy</td>
<td>School Supplies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fast Food</td>
<td>Music</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* TRA = Teacher Reinforcer Assessment; SRA = Student Reinforcer Assessment; ORA = Ongoing Reinforcer Assessment. TRA and SRA items are listed in order from first to fifth-ranked, with the highest-ranked item in bold print. Bolded items represent the item picked most often during the ORA condition for that participant and are followed by numbers indicating how many times each item was chosen.
Figure 1. Percentage of intervals of on-task behavior for Terri during baseline and reinforcer assessment.
Figure 2. Percentage of intervals of on-task behavior for Kathy during baseline and reinforcer assessment.
Figure 3. Percentage of intervals of on-task behavior for Matthew during baseline and reinforcer assessment.
Figure 4. Percentage of intervals of on-task behavior for Devon during baseline and reinforcer assessment.
Figure 5. Percentage of intervals of on-task behavior for Megan during baseline and reinforcer assessment.
42% of observation intervals for on-task behaviors. Her median during baseline and criterion to receive reinforcement was 49%. Terri’s level of on-task behavior always remained above her baseline mean; therefore, she received the highest-ranked item during each session of the reinforcer assessment conditions. Although large increases were seen in all conditions, the ORA condition resulted in slightly greater increases. Mean frequencies of responding were as follows: TRA condition $M = 80\%$ (range = 76-88), SRA condition $M = 79\%$ (range = 70-87), and ORA condition $M = 90\%$ (range = 80-99).

Figure 2 shows on-task levels for the second participant, Kathy. During baseline, Kathy’s mean level of on-task behavior was 12% of observation intervals, and her baseline median was 12.5%. Kathy received the selected items during all reinforcer assessment sessions. Again, large increases in on-task behavior were observed for this participant. With a couple of exceptions, the ORA condition resulted in slightly greater increases. Mean frequencies of responding were as follows: TRA condition $M = 71\%$ (range = 61-76), SRA condition $M = 69\%$ (range = 62-74), and ORA condition $M = 77\%$ (range = 69-88).

Figure 3 shows levels of on-task behavior during baseline and reinforcer assessment conditions for Participant 3, Matthew. Matthew’s mean level of on-task during baseline was 24.75%, with a median of 9.5%. He earned all selected items during each reinforcer assessment condition. Although clear separation between the conditions was not observed, the TRA condition produced slightly lower levels of on-task behavior. Mean frequencies of responding were as follows: TRA condition $M = 64.5\%$ (range = 53-73), SRA condition $M = 78\%$ (range = 61-87.5), and ORA condition $M = 82\%$ (range = 64-87).
Baseline and reinforcer assessment data are illustrated for the fourth participant, Devon, in Figure 4. Devon’s baseline mean for on-task behavior was 7%, and his median in baseline was 6.5%. Anecdotally, Devon often laid his head on his desk and/or slept during classroom instruction during baseline. During reinforcer assessment conditions, Devon’s observed level of on-task behavior increased greatly and he always met the requirement for reinforcer delivery; however, no clear separation was observed between conditions. Mean frequencies of responding were as follows: TRA condition $M = 81\%$ (range = 72.5-87), SRA condition $M = 88\%$ (range = 82.5-95), and ORA condition $M = 91\%$ (range = 87-93.5).

Baseline and reinforcer assessment condition data are presented for the last participant, Megan, in Figure 5. During baseline, Megan’s mean level of on-task behavior was 26%, and her median was 20%. Megan’s level of observed on-task behavior increased during reinforcer assessment conditions, although no clear separation was evident across conditions. She always performed above her baseline median score, which allowed her to access the stimulus item for each session. Mean frequencies of responding were as follows: TRA condition $M = 76\%$ (range = 63-88.5), SRA condition $M = 71\%$ (range = 64-75), and ORA condition $M = 78\%$ (range = 74-81).
CHAPTER V
DISCUSSION

The purpose of the current study was to determine whether preference assessment methods used in previous research would also be effective with general education secondary students (i.e., middle school). Stimulus preference assessments were also applied to an ecologically valid classroom behavior (i.e., on-task). Teachers and students were asked to identify potential reinforcers in a nomination preference assessment. In addition, an on-going preference assessment was conducted with each participant to determine whether changes in preference occurred over time, and whether assessing such changes provided a more accurate identification of reinforcers. Stimulus preference assessments were then closely followed with reinforcer assessments, which tested whether stimuli identified during preference assessments actually increased levels of on-task behavior when presented to a student contingent on a performance level above baseline median. The following discussion is organized according to the present study’s research questions.

Research Question 1

The first purpose of the current study was to determine whether reinforcers could be identified for secondary students which would increase on-task behavior in the classroom. For all 5 participants, large increases in on-task behavior were observed and maintained throughout the study. In fact, the students’ observed levels of on-task behavior at least doubled for most participants across all three conditions. For Kathy and Devon, the increases from baseline to treatment conditions were even greater. Interestingly, all of the students increased their level of on-task behavior to a mean of
71% or above during all conditions, regardless of how low their levels were during baseline. It also stands to reason that further increases could have been seen without the ceiling effects which are inherently part of observations of on-task behavior. Such dramatic increases suggest that the SSPM may effectively identify reinforcers for secondary education students and affirmatively answers Research Question 1 that teacher, student, and ongoing stimulus nomination/preference assessment procedures can successfully identify reinforcers for on-task academic behavior of secondary general education students.

Research Question 2

With regard to Research Question 2, the data presented for the current study suggest that slight differences between reinforcer assessment conditions were found for 2 of the 5 participants. Specifically, levels of on-task behavior increased slightly more during the ORA condition for Terri and Kathy. In addition, mean calculations suggest that the ORA condition resulted in slightly higher levels of on-task behavior than TRA and SRA conditions for all five participants, although much of the data was overlapping across conditions. Overlapping data makes identifying separation between data series more difficult and weakens the strength of such divergences. The ORA condition did not diverge from the TRA and SRA conditions for Devon and Megan; however, this condition was more stable. Overall, data from the present study indicates that the ORA condition may result in higher levels of on-task behavior than the TRA and SRA conditions, and that those levels may be more consistent over time for some students.

Discrepancies found between the results of the ORA condition and TRA or SRA conditions may be due to changing establishing operations of the individual students. In
the present study, all observations were conducted at the same time of day, and during the same academic class. Although most classes were conducted on a schedule, which allowed for most baseline and reinforcer assessment sessions to be conducted during similar types of activities, daily differences in the students’ preferences were still present. Therefore, it seems logical that changes in establishing operations of the individual students, such as possible food deprivation or lack of competing reinforcers, may have existed. Such differences may have been significant enough to influence behavior during the ORA condition and result in changes in preference and subsequent increases of on-task behavior.

Students and teachers were both successful in identifying reinforcers, and all conditions resulted in higher levels of on-task behavior than were observed during baseline sessions. Schanding (2004) and Fielder (2005) also found that students in secondary schools are typically accurate when identifying reinforcers. Fielder also found that middle school teachers could accurately pick reinforcers for their students. Interestingly, as in the present study, teachers in Fielder’s study chose edible items more often than other types of stimuli. Although Northup et al. (1995) have shown that students are not usually able to accurately identify their own reinforcers, participants in Northup et al. were diagnosed with a behavioral disorder (i.e., AD/HD), which may have accounted for such results. Specifically, students diagnosed with AD/HD may have impulsively picked their preferred items or may have had difficulty attending to all of the items available to them. Such difficulties with inattention and/or impulsivity could have resulted in less preferred items being used in the reinforcer assessment conditions.
Limitations and Future Directions

When critically discussing the results of any experimental study, it is important to note methodological limitations which may have affected research outcomes. In the current study, a possible confound exists which may account for the large increases observed in on-task behavior. Specifically, the students were not only made aware that they were being observed following the conclusion of baseline sessions, but were reminded of the observation at the beginning of each subsequent session. The directions given to the students, although designed to provide clear and consistent instructions of the behavior required to receive a particular item on that day, could have also acted as an antecedent stimulus which prompted their behavior. Specifically, the directions given to the student, and even the presence of the investigator or trained observer, may have acted as a conditioned discriminative stimulus which signaled the availability of reinforcement. The teacher of participant 4, Devon, even commented to the primary investigator, “You have no idea how much he wakes up when you enter the room.”

In the present study, the participants’ assent was obtained following baseline sessions but prior to the start of treatment conditions. This was done to ensure that a true baseline could be established without the students being aware that they were being observed, but also creates a significant confound when analyzing the differences in levels of on-task behavior between baseline and treatment. However, because levels of on-task behavior remained high over all reinforcer assessment conditions for most of the participants, it is possible that the stimuli were the cause of behavioral change rather than the observer’s presence or collection of student assent.
Future studies using similar methodology may benefit from altering methodology to reduce participant reactivity and increase internal validity. For example, a one-way mirror could be used for observations if available, or teachers could be trained to conduct observations of on-task behavior. In addition, a withdrawal phase, in which the directions and observer were present but no reinforcement delivered, could help further isolate contributing factors for increases in on-task behavior. The current study did not include a control condition, which could have significantly strengthened the results by controlling for multiple-treatment interference. Last, the addition of an independent verification phase for Terri and Kathy, extending the ORA condition, would have allowed the researcher to determine whether this condition results in high levels of on-task behavior independent of the presence of alternating treatments.

Some restrictions existed regarding the items listed on the SSPM, which also may have served as a limitation in the current study. Potentially reinforcing items, such as tickets to a school athletic event or watching a movie, were not included because practical limitations existed. Specifically, the study was held within a classroom, which restricted the type of activity or edible item which could be made available. Some options, such as watching a movie, would not have fit within such restrictions of time. Thus, such practical limitations may have restricted the range of potentially reinforcing stimuli.

Another potential limitation of the current study is the measure of on-task behavior across different activities within the classroom. Although the general subject of the classroom remained consistent, some observations were conducted during whole-group activities (e.g., lecture), whereas other sessions were conducted during independent
seatwork (e.g., completing in-class assignments). It is possible that some students were
better able to stay on-task during certain types of activities; however, the reinforcer
assessment conditions and classroom activities were both randomly presented. Therefore,
no one condition was conducted consistently during any one specific type of activity for
any of the participants. In addition, no observation sessions were conducted during
activities which would greatly impact on-task behavior (e.g., tests, free time, etc.).

The use of an alternating treatments design was another potential limitation to the
current study. This design was selected due to the numerous advantages it provides,
including randomization of conditions. However, the use of rapidly alternating
reinforcers during the reinforcer assessment conditions may have allowed for some
overlap to occur between conditions. Different results for particular conditions may have
been observed if the student had been able to continuously pick from one set of stimuli. It
should be noted, however, that use of an ATD prevented possible satiation that may have
occurred from repeated exposure to the same items over a long period of time.

An additional limitation may be that items available during the TRA and SRA
conditions were also available during the ORA condition. This allowed students to access
the same items for increased levels of on-task across conditions. However, the items used
in the TRA and SRA conditions were different for each participant. In addition, the item
chosen most often by the participants during the ORA condition was always different
than the item available to them in the other conditions. Although the actual items used for
all three of the conditions were different, the top 5 items ranked sometimes overlapped.
Therefore, when a participant was offered an item during one condition (e.g., TRA) that
was highly ranked in another condition (e.g., SRA), they may have assumed that both
items came from the same list. It is still not clear, then, whether further differences could have been observed if the top 5 items had been completely different and conditions had been as similar.

Last, the slightly greater increases in on-task behavior only occurred in 2 out of the 5 participants. Both of the participants who displayed higher levels of on-task behavior during the ORA condition were in the 6th grade, whereas two of the other participants were in the 8th grade. Although differences between participant outcomes may not be due solely to differences in age or grade, it is possible that on-going preference assessments may be more effective for younger students. Future research in preference and reinforcer assessments may include ORA conditions for students of varied ages/grades in an attempt to replicate such results.

Future research in the area of stimulus preference assessment should also continue to investigate whether academically relevant behaviors, such as on-task, can be affected differentially depending on the method used to identify stimulus preference. Such research should control for possible confounds, such as the presence of the observer and specific instructions. The characteristics of participants used in stimulus preference and reinforcer assessment research should continue to be explored. The present investigation contributes to this literature in that it is one of only a few that has incorporated older (i.e., secondary) students.
APPENDIX A

The University of Southern Mississippi Consent Document for Research Participants: Teacher Consent

Title of Study: Stimulus Preference Assessment in Secondary General Education: Using Reinforcement to Increase On-Task Behavior

Name of Participant: ________________________________ Date: ________________

Purpose of Study. You are being asked to take part in a study to compare different ways of picking rewards that could be used to help improve your student’s school behavior or performance.

Who can participate? Your student needs to be first referred to his or her school’s Teacher Support Team (TST) for an academic or behavioral concern to document any past interventions attempted in the classroom. Your student needs to be enrolled in a general education classroom, grades 6th-8th, with no current or past diagnoses for cognitive, behavior or physical impairments. By signing this form, you verify that you do not have knowledge of any current or pre-existing condition set forth above. Should your student experience an adverse reaction during the course of the study, the experiment will be terminated. If your student does not meet criteria for participating in this study, he/she will still receive intervention services from the school’s TST and he/she may be referred to the USM School Psychology Service Center or local mental health provider for services.

Methods and Procedures. If you agree to participate in this study, and if your student is selected for the study, you and your student will each complete a survey asking what items your student would be willing to do a lot of hard work to earn. The survey will take approximately 10-15 min to complete. After completing the survey, your student will be observed in your classroom for 20 min each day for approximately 20 – 25 days at the time of your scheduled class.

Risks and Discomfort. This study has very few risks for your student because only positive procedures will be used. However, your student may become frustrated should he/she not reach criteria to obtain certain rewards.

Benefits. The results of this procedure may be of benefit to you and your student because the results will indicate items that the student would find reinforcing and useful in increasing desirable behaviors at school. The results may also provide for a better intervention to be designed by the TST if current interventions or modifications are ineffective for your student in the classroom. Whereas no assurance can be made concerning results that may be obtained (because results from investigational studies cannot be predicted), the researcher will take every precaution consistent with the best scientific practice.
Confidentiality of Records. All information obtained during this study will be kept confidential. This means that your name and your student’s name and any other identifying information will be withheld from all persons not connected with the study. There are circumstances in which we are obligated to release information about you and your student. Those circumstances are if your student tells us that he/she is planning to harm him/herself or someone else, if your student is suspected of being abused, if we are ordered by the court to release information, or if there is a medical emergency in which the release of information is important to ensure your student’s or another person’s safety.

Voluntary Participation. Your participation in this study is entirely voluntary. You may withdraw from being a research participant at any time without penalty or prejudice.

Participant’s Consent. I have had the purposes and procedures of this study explained to me and have had the opportunity to ask questions. My questions have been answered to my satisfaction, and I am voluntarily signing this form for myself to participate in this research study. My signature shows my willingness to participate in this study under the conditions stated. If I have any questions about this study, I can contact Carrie Fielder or Dr. Dan Tingstrom, at (601) 266-5255. This project and this consent form have been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820. I have received a copy of this consent.

Teacher Signature __________________________ Date __________

Investigator Signature __________________________ Date __________

Witness Signature (if needed) __________________________ Date __________
APPENDIX B

The University of Southern Mississippi Consent Document for Research
Participants: Parent Consent

Title of Study: Stimulus Preference Assessment in Secondary General Education: Using Reinforcement to Increase On-Task Behavior

Name of Participant: ________________________________ Date: _______________

Purpose of Study. You are being asked to take part in a study to compare different ways of picking rewards that could be used to help improve your child’s school behavior or performance.

Who can participate? Your child needs to be referred to his or her school’s Teacher Support Team (TST) for an academic or behavioral concern to document any past interventions attempted in the classroom. Your child needs to be enrolled in a general education classroom, grades 6th-8th, with no current or past diagnoses for cognitive, behavior or physical impairments. By signing this form, you verify that you do not have knowledge of any current or pre-existing condition set forth above. Should your child experience an adverse reaction during the course of the study, the experiment will be terminated. If your child does not meet criteria for participating in this study, he/she will still receive intervention services from the school’s TST and he/she may be referred to the USM School Psychology Service Center or local mental health provider for services.

Methods and Procedures. If you agree to participate in this study, and if your child is selected for the study, your child will complete a survey asking what items your child would be willing to do a lot of hard work to earn. The survey will take approximately 10-15 min to complete. After completing the survey, your child will be observed in their classroom for 20 min each day for approximately 20 – 25 days during regular class hours.

Risks and Discomfort. This study has very few risks for your child because only positive procedures will be used. However, your child may become frustrated should he/she not reach criteria to obtain certain rewards.

Benefits. The results of this procedure may be of benefit to you and your child because the results will indicate items that the child would find reinforcing and useful in increasing desirable behaviors at school. The results may also provide for a better intervention to be designed by the TST if current interventions or modifications are ineffective for your student in the classroom. Whereas no assurance can be made concerning results that may be obtained (since results from investigational studies cannot be predicted), the researcher will take every precaution consistent with the best scientific practice.

Confidentiality of Records. All information obtained during this study will be kept confidential. This means that your name and your child’s name and any other identifying information will be withheld from all persons not connected with the study. There are
circumstances in which we are obligated to release information about you and your child. Those circumstances are if your child tells us that he/she is planning to harm him/herself or someone else, if your child is suspected of being abused, if we are ordered by the court to release information, or if there is a medical emergency in which the release of information is important to ensure your student’s or another person’s safety.

**Voluntary Participation.** Your participation in this study is entirely voluntary. You or your child may withdraw from being a research participant at any time without penalty or prejudice.

**Participant’s Consent.** I have had the purposes and procedures of this study explained to me and have had the opportunity to ask questions. My questions have been answered to my satisfaction, and I am voluntarily signing this form for myself to participate in this research study. My signature shows my willingness to participate in this study under the conditions stated. If I have any questions about this study, I can contact Carrie Fielder or Dr. Dan Tingstrom, at (601) 266-5255. This project and this consent form have been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Institutional Review Board Office, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406-5147, (601) 266-6820. I have received a copy of this consent.

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<th>Investigator Signature</th>
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<th>Witness Signature (if needed)</th>
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APPENDIX C

The University of Southern Mississippi Assent Document for Research Participants

The investigator will state to the child:

"I would like to work with you during the next few weeks. I will ask you to tell me some things that you would like to earn for paying attention in class. You will later have the chance to earn some of the good things you choose, if you work hard enough. If you understand what we will be doing and that is okay with you, sign your name below. What questions do you have?"

Child Signature __________________________ Date __________

Investigator Signature __________________________ Date __________

Witness Signature (if needed) __________________________ Date __________
APPENDIX D

Secondary Student Preference Menu (SSPM)
Teacher Version

Name ___________________________ Date __________

The following is a list of things that students sometimes get in school. Answer the form in reference to the student for whom you are filling this out. After reviewing the entire list, rank the top 5 items. Begin by putting a ‘1’ next to the item you believe the student would be most willing to work for. Then decide the next item you think your student would most like to earn and put a ‘2’ to the right of that item. Continue to do this until all five items have been ranked.

1. Listening to music
2. Can of coke or soda
3. Magazines
4. Skip a homework assignment
5. Basketball or baseball cards
6. Candy (M&M’s, Snickers, hard candy)
7. Reading time
8. Drawing markers or colored pencils
9. Fast food coupon
10. Scented candle
11. Playing a video game
12. Snack food (chips, animal crackers)
13. Pack of gum
14. Drawing time
15. School supplies (paper, pencils, pens)

Adapted from the Secondary Reinforcer Menu (Jenson, Rhode, & Reavis, 1994)
APPENDIX E

Secondary Student Preference Menu (SSPM)
Student Version

Name ___________________________________ Date ____________

Investigator:
Below, there is a list of things that students sometimes get in school. After reviewing the entire list, rank the top 5 items. Begin by putting a “1” next to the item you believe you would be most willing to work for. Then decide the next item you think you would most like to earn and put a “2” to the right of that item. Continue to do this until all five items have been ranked.

Listening to music
Can of coke or soda
Magazines
Skip a homework assignment
Basketball or baseball cards
Candy (M&M’s, Snickers, hard candy)
Reading time
Drawing markers or colored pencils
Fast food coupon
Scented candle
Playing a video game
Snack food (chips, animal crackers)
Pack of gum
Drawing time
School supplies (paper, pencils, pens)

Adapted from the Secondary Reinforcer Menu (Jenson, Rhode, & Reavis, 1994)
**APPENDIX F**

On-Task Data Collection Sheet

Teacher: _____________________  Student: _____________________

School:  Date: _____________________

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**APPENDIX G**

**Procedural Integrity Checklist:**
**Teacher Preference Assessment**

Teacher: ___________________  Student: ___________________
School: ___________________  Date: ___________________

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<td>Conducts teacher stimulus preference assessment before any student stimulus preference assessment.</td>
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<td>Gives teacher written directions.</td>
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<tr>
<td>Gives teacher SSPM.</td>
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<tr>
<td>Answers any questions posed by teacher.</td>
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### Procedural Integrity Checklist: Student Preference Assessment

**Teacher:** ___________________  **Student:** ___________________

**School:** ___________________  **Date:** ___________________

<table>
<thead>
<tr>
<th>Student Nomination Stimulus Preference Assessment</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reads directions verbatim.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Places student sheet in front of student and reads the directions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answers any question.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allows the student to rank his/her top 5 items from the list.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records the highest-ranked item.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX I

Procedural Integrity Checklist:
Student On-Going Preference Assessment

Teacher: ______________________  Student: ______________________
School: ______________________  Date: ______________________

<table>
<thead>
<tr>
<th>Student Nomination Stimulus Preference Assessment</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reads directions verbatim.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Places student sheet in front of student.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answers any question.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allows the student to rank his/her top 5 items from the list.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records the highest-ranked item.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX J

Procedural Integrity Checklist: Reinforcer Assessment Condition

Teacher: __________________________  Student: __________________________
School: __________________________  Date: ____________________________

<table>
<thead>
<tr>
<th>Reinforcer Assessment</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reads the directions (below) verbatim.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shows the student the potential reinforcer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answers any of the student’s questions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observes the student for on-task behavior for 20 min.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculates students score (percentage on-task) immediately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notifies the student of whether they will receive reinforcement.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Directions:

“I am going to observe you in class today. I will be looking to see how much you pay attention in your class. If you pay attention today more than you did before, you will receive this item.” (Show Item)
The University of Southern Mississippi
Institutional Review Board

HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 26030603
PROJECT TITLE: Preference Assessment in Secondary General Education: Using Reinforcement to Increase On-Task Behavior
PROPOSED PROJECT DATES: 03/10/06 to 06/01/07
PROJECT TYPE: New Project
PRINCIPAL INVESTIGATORS: Carrie Ellen Fielder
COLLEGE/DIVISION: College of Education & Psychology
DEPARTMENT: Psychology
FUNDING AGENCY: N/A
HSPRC COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 03/06/06 to 03/05/07

Lawrence A. Hosman, Ph.D.
HSPRC Chair

3-10-06
Date

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REFERENCES


