Increasing Following Instructions and Accepting “No” Through Teaching Interactions and Music Lyrics

by

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Dedication

I would like to dedicate this thesis to individuals with Fetal Alcohol Syndrome and for the hope of a brighter future for effective and successful interventions.
Abstract

The use of music was used to examine skill improvement in the areas of following instructions and accepting “no” for three female adolescents with Fetal Alcohol Syndrome (FAS). Three girls living in a Teaching-Family Home were exposed to music during after school hours to measure the effect of music. This AB design study found that statistically significant skill improvements were made with the introduction of music. All participants demonstrated a significant increase in percentage of change of at least 40% for following instructions and accepting “no”. As the statistical analyses indicated, following instructions and accepting “no” results demonstrated significant statistical change at the $p < .05$ level.
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Chapter 1: Introduction

Overview

In 1975, The Teaching-Family Model was developed by Wolf and colleagues has been claimed to “revolutionize” the care and treatment of over a million girls and boys (Risley, 1996, p. 377). The Teaching-Family Model offers concrete, behaviourally-specific teaching interactions in order to provide evidence-based services to a wide range of children with mental health issues. This model has demonstrated to be effective for intellectual disabilities. The purpose of this project is to build upon its foundation of teaching interactions skills through the use of music. It has been suggested that alternative teaching techniques be used for various populations to assist with their development of skills and learning (Lawrky, 2005; Marnada, 2005). One population in particular that demonstrates difficulty in learning and retaining new material and for which alternative teaching techniques may be beneficial are individuals diagnosed with Fetal Alcohol Syndrome (FAS).

FAS is a syndrome that falls under the category of Fetal Alcohol Spectrum Disorders (FASD). FAS is a disorder that is caused by mothers consuming alcohol during pregnancy, which in turn has detrimental consequences for the developing fetus. FAS is an organic brain disorder with no cure.

Despite the difficulty experienced when learning and retaining new material, it has been observed that FAS children have the ability to quickly memorize song lyrics from the radio (Lawrky, 2005). It appears that the rhythm of music and its natural tendency to repeat lyrics may contribute to the memory retention of the lyrics (Marnada, 2005).

Hypothesis

Due to the nature of the syndrome, children with FAS demonstrate a deficit in preserving newly-learned material, thus creating a need to enhance pre-existing teaching techniques in order to benefit their overall skill development. For the purpose of this study, behaviours of children diagnosed with FAS will be observed, so as to demonstrate clinically significant improvement in the skills of following instructions and accepting “no” through teaching interactions enhanced by music. This will occur through the creation and implementation of music lyrics to assist in remembering the Teaching-Family Model’s concrete steps for those skills.

Rationale

Currently, it appears there is a lack of available programs offering specific guidelines for working with FAS populations. Thus, the objectives of this study are to demonstrate effective methods of working with FAS clients through music that enhances their own learning process and improves their behavioural deficits. By increasing the skills of an individual, it can be assumed that such improvements will lead to improvements in various areas of that individual’s life. More importantly, quality of life may be improved for FAS individuals through successful interventions, as it can contribute to finding ways to gain employment, achieve academics goals and develop healthy and meaningful relationships (Lawrky, 2005). The overall aim of using music with individuals with FAS is to assist in progression of skill development while living in a Teaching-Family home.
Chapter 2: Literature Review

Teaching-Family Model

The Teaching-Family Model was founded in 1975, by Wolf and colleagues, with the purpose of developing “a community-based program that was more humane, more effective in teaching community-living skills, and less expensive than the traditional large state institutions,” (Wolf et al., 1995, p. 12). The model was introduced in 1967 to a group home named Achievement Place, with the intent to gather observable changes in delinquent youth that could be systematically repeated (Wolf et al.).

Wolf established the use of direct observations with interval recording alongside with interobserver reliability, reversal and multiple baseline single-subject experimental designs in the natural setting (Risley, 2005). Prior to Wolf, most data collection of human behaviour took place in a lab. Due to this form of naturalistic observation, experimental findings became more valid and applicable to other comparable environments.

Over the course of four years, researchers conducted studies within the group home environment to determine what procedures worked best in this setting (Fixen & Blase, 2003). Procedures pioneered by Wolf, such as a motivation system known as a token economy, time-out, and the use of social reinforcement from adults, allowed for successful interventions to be delivered in the group home (Risley, 2005). Since, the model has undergone continuous progression and has been implemented in a variety of populations, including children in foster care, sex offenders, and challenged adults with intellectual disabilities (Teaching-Family Association, 2007).

Today, the Teaching-Family Model is known for its framework for “best practices,” which are based on a behavioural approach for learning and skill acquisitions (Teaching-Family Association, 2007). This model uses an integrated system of training, consultation, evaluation and administration to uphold a high standard of service delivery (Teaching-Family Association). The Teaching-Family Model’s highly specific methods of teaching new skills, such as the use of labeling the skill set and behaviour being used, the motivation system that is directly related to such skills, positive reinforcement for the use of skills, differential reinforcement of alternative behaviours contribute to the effectiveness of development of new skills when working with developmental disabilities populations. Given that the Teaching-Family Model has demonstrated positive accomplishments with individuals with developmental disabilities, it suggests that examination of this model may contribute to determining successful methods for working with FAS populations (Fixen & Blase, 2003).

Background of Fetal Alcohol Syndrome

FAS is a disorder that occurs during prenatal development and is caused from drinking throughout pregnancy that results in developmental delays. Research indicated that between 4 and 9 out of 1000 births are FAS births (Shields, 2002; Health Canada, 2003). However, Canadian research suggested that 51% to 66% of children in special need classrooms were likely to have experienced prenatal exposure to alcohol without receiving a confirmed FAS diagnoses (Health Canada). Due to stigma surrounding drinking while pregnant, it can be difficult to diagnose a confirmed case of FAS. Diagnosis of FAS requires a confirmation of drinking during pregnancy. Without confirmation, a firm diagnosis of FAS cannot be made; only suspected (Roberts & Nanson, 2000).

For individuals who do not have all the signs of FAS, it is harder to determine if their problems were caused by prenatal exposure to alcohol or something else. It is common for some problems, like behavioural difficulties, to have several causes, including genetics, poor living environment, as well as drug or alcohol exposure during pregnancy.
In some conditions, it is impossible to confirm if the mother has drunk during pregnancy. Such circumstances exist in which the mother has given a child up for adoption, making it difficult to gather evidence from the biological mother, as she is no longer a direct part of the child’s life, and/or the biological mother refuses to comment on the situation. These situations just mentioned illustrate some conditions that would include “without confirmed history” criteria. The criteria of “without confirmed history” is important to recognize, as not all mothers are willing to admit to drinking during pregnancy and/or the individual is in care and does not have access to information directly from the mother. By recognizing the diagnosis, it allows for educators and caregivers to make appropriate arrangements for FAS individuals. (Health Canada, 2003)

Studies have found that drinking in early pregnancy was more harmful than later. This is due to the developmental process that takes place during the first trimester; the effects of alcohol were most damaging during the first to sixteenth week of pregnancy (Shields, 2002; Health Canada, 2003). However, this does not imply that alcohol use is beneficial when pregnant. Alcohol can affect a developing fetus after the sixteenth week, as damage due to alcohol can occur during any trimester. Taking this into consideration, it was suggested that it is always advantageous for a mother to stop drinking while pregnant, as no amount of alcohol has been deemed to be safe for a developing fetus (Shields).

Although detecting FAS in a newborn is sometimes difficult, in severe cases, FAS can be determined. If a mother has exposed the fetus to large amounts of alcohol, the amniotic fluid will test positive for alcohol. In extreme cases, the baby is born drunk and/or will experience withdrawal symptoms (Shields, 2002; Roberts & Nanson, 2000). In cases that are not as severe, tests can be performed to determine if alcohol exposure has occurred, such as testing the meconium (the stool of a new born). Meconium testing includes screening for the by product of alcohol (a trans-fatty acid), which indicates drinking alcohol took place in the last trimester (Roberts & Nanson). Other indicators that may suggest prenatal alcohol exposure were birth defects such as congenital heart, and ocular anomalies; yet detecting these symptoms was not always easy because 70% to 75% of newborns exposed to alcohol demonstrate such characteristics, leaving 25% to 30% with no visible characteristics (Roberts & Nanson). After birth, FAS newborns may experience sleeping difficulties and problematic eating, and these signs may flag doctors to investigate prenatal alcohol exposure (Shields). Furthermore, some individuals with FAS are not aware until adulthood of their condition. Upon receiving a diagnosis, it allows individuals with FAS to have access to appropriate treatment programming that may improve certain aspects of life.

**Fetal Alcohol Syndrome and Learning**

FAS is a disorder that causes difficulties with learning, memory, attention span, communication, vision, hearing or a combination of these (Timler & Olswang, 2001). Such complications may affect learning in numerous ways and research summarized that FAS populations demonstrate a range of these problematic areas. It has been established that skill deficits in FAS populations tend to be found in the areas of social interactions, impulsivity control, responsiveness to social cues, poor concentration, flexibility, labeling emotions, getting along with other, academics and pro-social behaviours (Baldwin, 2005). Smith and Graden (1998) indicated that behavioural assessment and screening need to take place for successful interventions, as it is common to have other disorders co-occurring, such as ADHD and ODD. As the likelihood of other disorders is increased with FAS individuals, it is important to address other behavioural problems presented by these disorders (Smith & Graden, 1998). For example, FAS individuals may also have a diagnosis of ADHD, which may result in poor attention to school work or following instructions. This may cause difficulties for successful learning in
numerous ways, for instance, traditional classrooms that encourage sitting in a seat for long periods of time to complete work, require concentration to complete work, may be full of colourful posters and attractive objects, and include 30 other children doing different things at the same time (Lawrky, 2005). Lawrky (2005) noted that all of these conditions may negatively impact the learning of new material in a negative way due to the distractions the condition created or how the environment was not set up for success (e.g., various short periods of study time would be more successful than one long period). To add to their difficulties, their poor social skills may also lead them to have few friends and without these friends to assist them, they receive little feedback from their peers concerning their behaviours.

**Interventions**

**Living environment to facilitate skill acquisition.** Working with FAS individuals can become challenging for professionals and caregivers providing service, as behavioural and academic problems may present themselves in a variety of ways; FAS individuals have a wide global range of behavioural problems and their needs must be met on an individual basis. Numerous children diagnosed with FAS do not continue living with their biological parents, as those parents were unable to support the needs that FAS presented (Striessguth, 1996). Additionally, FAS children who stay with their parents who have struggle dealing with addictions tend to experience “disruptive, unstable, and possibly abusive home situations that can worsen the child’s development delays,” (Abkarian, 1992, p. 223).

Given this information, it is apparent that the most prevalent intervention for children with FAS involved removal of their biological parents and placement in a foster care program. In Canada, many children were placed in foster care or group homes and one study indicated that the average age for FAS children entering care is approximately two years of age. Of these children, most remained in care for an average of five years, in which they typically experienced multiple placements (Habbick, 1996). Furthermore, Streissguth (1996) conducted a study that found FAS individuals were most likely to have successful living skills when they were placed in an established, nurturing home without disruptions of moving or abuse. As well, Streissguth’s (1996) study demonstrated that multiple placements put FAS children at a higher risk for negative development and that three years in the same home was recommended for beneficial development of life skills.

Typically, a stable home environment can help reduce the likelihood of attachment disorders, problems with transitions, difficulty in expressing feelings and needs, and medical neglect (Roberts & Nanson, 2000). Foster homes and group home settings offer treatment in childhood that typically focused on developing social skills, maintaining relationships, following rules, impulsivity control, academic skills and accepting limitations (Roberts & Nanson). For example it has been demonstrated that early interventions in a supported and structured environment can lessen the chance of FAS children and youth having severe, long lasting behaviour problems (Smith & Graden, 1998; Wake Forest University Health Sciences, 2004). Within such environment, adaptive skills can be learned. Lawrky (2005) noted that a large amount of time was aimed to develop new alternative skills in areas for children with FAS experience difficulty during their placement in care programs and specialized education.

**Concrete teaching methods.** Learning deficits can be improved or developed by teaching new skills through concrete methods (Adams, Parsons, Culbertson, & Nixon, 1996; Timler & Olswang, 2001). Using concrete teaching methods, instructions delivered to FAS individuals should be behaviourally specific in order to effectively implement this technique. For instance, this would involve describing all behaviours needed to complete a task, as it would be specific enough to eliminate misinterpretation. This method can be further improved by breaking down the main components into smaller components, such as focusing on one specific
task. Using behavioural specificity in this way allows for the FAS individual to experience clarity with regards to the instruction and know what the expectations are. These skills are taught using concrete techniques such as the use of clear simple language, concrete examples, and visual, verbal and physical approaches (West Forest University Health Sciences, 2004). Teaching occurs through systematic instructions; it has been demonstrated that when an individual methodically controls the structure of teaching, it supports the ability for the learner to grasp the skill (Johnson & McDonnell, 2004).

**Token Economies.** For the past thirty years, token economies based on operant learning theory have demonstrated to be an effective treatment component in most group programs for adolescents struggling with behaviour problems (Kazdin & Bootzin, 1972). Token economies are attractive for group homes because they can be used in a simple, inexpensive and easily manageable systematic approach (McLaughlin & Malaby, 1975). Concrete teaching methods may be supported through the use of token economies. Token systems that are clear and concrete may assist in motivating FAS individuals to complete tasks and stay focused for the duration of the task as they create opportunities for reinforcement to be provided (Fixen & Blase, 2003). In all Teaching-Family homes, a token economy known as a motivation system (typically point cards) is used. Point cards used which involve labeling the skill used (e.g., following instructions) and what behaviour was used specifically (e.g., do task, set table). For all desired skills used, positive points are assigned and for all undesired skills used, negative points are assigned. Each day, clients are required to earn a certain number of points to have access to privileges (e.g., playing Xbox). Motivation systems are one way that reinforcement can be paired directly with the skill used, thus increasing the likelihood the skill will be used in the future (Teaching-Family Association, 2007).

**Vicarious learning.** Modeling has shown effectiveness in assisting teaching methods for many of these problematic areas. Given the structure of group homes, typically numerous children within the same age group live in the same home. Consequently, living with other children provides the opportunity for them to act as models for one another. Jones and Schwartz (2004) found that models, especially siblings, play a large role in developing new behaviours. In this study, staff encouraged peer interaction whenever possible, such as participation in peer activities rather than working with adults. Staff also providing reinforcement for these peer interactions. Praising such interactions also helps aid the necessary development of peer relations. This also allows an opportunity for staff to provide effective praise and allows acting-out clients to observe appropriate behaviours modeled by their peers.

**Learning through music**

Despite the various teaching methods used and other successful behavioural techniques, learning is still a process that presents itself as a challenge for FAS individuals. More specifically, professionals might not be providing the utmost level of service if they fail to recognize the need for alternative teaching methods simply because they vary from our own preference of teaching. Therefore, using alternative teaching technique, such as teaching using music may provide a new method of presenting material to facilitate learning. Teaching through music is one method of engaging any learner at a different level, and may contribute to retention of new material due to its association with rhythm (Marnada, 2005). Standley (1996) conducted a meta-analysis and identified that music was effective when used as a contingent reinforcer. More specifically she found that music used as a contingent reinforcer can have profound effect in the areas of education and therapy.

In recent years, numerous products have been available to enhance learning through music; all of which claim to have developmental benefits. Standley and Hughes (1996) demonstrated that music was used as an effective early intervention for developing on-task
behaviour and teaching a variety of concepts and skills to young children. They found that when music was introduced to the learning environment, young children displayed more on-task behaviour in comparison to an environment with no music. Additionally, Standley and Hughes (1996) demonstrated that with the use of music, children were able to learn new academic skills, such as the alphabet, counting, and time concepts.

Another benefit that has been explored through experimental research is referred to the “Mozart Effect,” (Crncec, Wilson, Prior, 2006). The Mozart Effect is the effect of complex music being played in the background that increase spatiotemporal reasoning, which engages the brain in sequential processing of spatial information over time (Crncec et al.). Furthermore, modest correlations exist between musical ability and the use of music with non-musical skills (e.g., using music to learn something outside of music, such as literacy) (Bultzlaff, 2000).

Chalmers, Olson and Zurkowski (1999) suggested that music may have promising effects on children, as the music is one way to soothe and maintain focus, particularly for children with behavioural problems. Jellison (1996) conducted a content analysis of music research and children with disabilities that music was effective in manipulating problem behaviours. In addition to this, music has demonstrated to alleviate hyperactivity, improve concentration with children who have emotional, learning and behavioural difficulties, and improve overall expression of oneself (Crncec et al., 2006). These findings are supported by physiological measurement that indicates lowered blood pressure, body temperature and heart rate in special needs children, which is important to note, as higher arousal states release stress hormone (cortico steroid and adrenaline) that adversely affect learning (Smith, 1996). Thus, it has been suggested that because special needs children experience more stress associated with learning, enhancing this process with music may lead to improved learning as stress levels are buffered by the music.

**Rationale for Using Music with Fetal Alcohol Syndrome Populations**

Unfortunately, FAS individuals do not have a strong history of success when it comes to independent living; thus creating a strong rationale to provide necessary support systems for FAS children. Due to the learning difficulties FAS individuals are presented with, music is one option that may assist with the learning of new material with the intention to develop life skills needed for independent living. As the literature review indicates, working with FAS populations is challenging and problematic due to learning difficulties (poor concentrations, lack of abstract thinking, and impulse control); therefore, with the use of existing knowledge (such as concrete instructions, music, learning through repetition, and motivation systems) the learning process can be enhanced.

The Teaching-Family Model has demonstrated effectiveness with challenging populations and given its highly structured and concrete delivery system, it is a model that should prove to be effective when teaching skills to FAS children. However, any model can be improved upon. Keeping this notion in mind, continuous evaluation should be considered when offering treatment services. For this reason, music has been considered as a technique in which the Teaching-Family Model’s teaching interactions may be enhanced.

The purpose of using music is to assist with the foundation of teaching that occurs within the group home setting that results in an increased ratio of following instructions to not following instructions, as well as a higher ratio of accepting “no” to not accepting “no.” As indicated above, children with FAS may experience frustration during the learning process, which in turn inhibits their ability to learn. Thus, music may be one means to alleviate frustration and its associated stress experienced during the process of skill acquisition.

Teaching through music may be a learning tool that could be generalized to other skills in daily living, as well as academic skills. Collectively, these improvements lead to a higher
quality of service delivery and for individuals with FAS, this may mean improved success in different areas of life. Overall, music is an attractive activity that many people enjoy on a daily basis, and its inclusion within teaching interactions should offer additional benefits to clients.
Chapter 3: Methodology

Participants

Three children (CV, JH, and RC) with FAS who have been living in a Teaching-Family home for two or more years were selected for this study. The participants consist of three females, age ranging from 12 to 14. All three children have been ordered by the courts to be removed from their parents; none of which have any contact with their biological parents. All will continue living in the group home for several more years. The participants currently experience difficulty in following instructions and accepting “no”. All participants receive daily medication to help with hyperactivity, concentration, and aggression and are diagnosed with FAS. Medication remained consistent throughout baseline and intervention condition. Each participant also has difficulty falling and staying asleep at night. Informed consent was received from the legal guardians who agreed to the conditions of the study (Appendix A) and assent was obtained from the participants, as the conditions were explained verbally and each girl was informed of their right not to participate.

Materials

Sequence analysis. Sequence analyses (ABC) were employed to gather qualitative measurements and to assist assessment of antecedents and consequences of problem behaviours. The sequence analyses were utilized to further examine problem behaviours that were still persistent even when teaching interactions were implemented. Also, this direct observation method allowed for an observer to record individual differences and maintaining contingencies for not following instructions and not accepting “no”.

CV’s sequence analysis. The researcher used an ABC chart to gain further insight and specificity to CV’s deficit behaviours of following instructions and accepting “no” (Appendix B). The ABC indicated that CV was not following instructions when she did not have adult attention or access to desired activity. Redirection to work appeared to be effective short term, and earning negative points lead to an increase of not following instructions; eventually, CV did demonstrate the appropriate behaviour. However, earning positive points immediately for following instructions appeared to be most successful in gaining desired behaviours.

JH’s sequence analysis. The researcher used an ABC chart to gain further insight and specificity to JH’s deficit behaviours of following instructions and accepting no (Appendix C). The ABC indicated that JH was likely to not follow instructions when she received an instruction from adults while peer attention was available. JH also was exhibited a low frequency of accepting “no” when peer attention was available. The ABC suggested that positive reinforcement was maintaining JH’s behaviour deficits in the areas of following instructions and accepting “no”.

RC’s sequence analysis. An researcher used an ABC chart to gain further insight and specificity to RC’s deficit behaviours of following instructions and accepting no (Appendix D). The ABC indicated that RC was not following instructions when other peers had access to adult attention and she did not. Earning positive points for following instructions immediately lead to positive consequences. RC avoided undesired activities by delaying their onset. RC was more likely to begin to pout and cry after receiving a “no” response.

Functional Assessment Observation. The Functional Assessment Observation (FAO) created by O’Neill et al. (1997) was designed to record a target behaviour’s setting events, antecedents and consequences during a specified interval. Using the FAO (O’Neill et al.) the target behaviours of all participants for following instructions and accepting “no” were recorded from 4 p.m. to 8 p.m. to determine the antecedents and consequences of these behaviours (Appendices E, F & G). The researcher was trained using the FAO. The FAO was employed
for this study because it easily allowed an observer to record different stimuli in the environment at one time and was used to measure frequency of following instructions and accepting “no”. The materials required for the observations included a writing instrument and a stop watch to time intervals. All staff received training in the teaching-family model prior to observations, and used this model when working with the participants. Using the FAO as a measurement of frequency, each participant recorded levels of following instructions and accepting “no” that could be increased through the use of behavioural intervention.

**Teaching-family model training manual.** All staff members working in the home were trained in the Teaching-Family Model. The training session took place over the course of two weeks and consisted of approximately 40 hours. The trainers utilized a manual as a learning aid to accompany PowerPoint presentations and behavioural rehearsals. This manual included various techniques used in Teaching-Family homes, such as point cards, teaching interactions, and preventative prompting.

Each participant used a point card daily to receive positive and negative points as per the Teaching-Family Model’s requirements (Appendix H). Participants required a new card every day and a writing instrument to record points.

In order to provide consistency of teaching interactions, mediator instructions were provided for preventive prompting for all individuals working with the participants (Appendix I).

**Music Lyrics.** Finally, a designated song on a CD with lyrics (Appendix J) and a means of playing the CD were needed in order for the participants to hear the song during the specified observations between 4 p.m. to 8 p.m.

**Design**

The experimental condition, addition of music, was presented in an AB design. The dependent variables measured were following instructions and accepting “no” for all three participants. The independent variable was the introduction of a song with musical lyrics. Thus, it was hypothesized that the use of music would produce an increased frequency of following instructions and accepting “no” for all participants.

**Procedure**

**Target Behaviours.** Baseline and intervention data were collected for both following instructions and accepting “no” using the FAO, for all three participants. Following instructions was defined as when the client makes eye contact with the individual delivering the instruction, says okay, performs the task right away, and checks back to the individual delivering the instruction to ensure the task was completed. Accepting “no” was defined as when the client makes eye contact with the person delivering the “no” response, uses a calm voice tone that is slow and indoor appropriate, says “okay,” and demonstrates they are calm through their body language by staying calm, with arms at their side, not getting red in the face and not crying or raising voice. Participants could not pout or cry while accepting “no.” Baseline assessment occurred for approximately two weeks, until a stable baseline was established. All participants demonstrated stable baseline within ten days of conducting observations. Intervals consisted of ten-minute intervals using event recording that measured both following instructions and accepting “no”.

**Music condition.** For the intervention condition, the introduction of music was used. Participants listened to the song for a total of ten days, three times a day. Lyrics were created with all of the participant’s assistance; participants chose a song and helped rewrite the lyrics to the specific skill. The song chosen was entitled “We’re All in This Together,” which the participants felt would be suitable given that sometimes they were required to work together to follow instructions. Participants had a total of ten days to learn the song before intervention data
was collected. For the intervention data collection, the FAO sheet was used to observe the number of events for following instructions and accepting “no”. Intervention intervals consisted of ten-minute intervals using event recording measuring both following instructions and accepting “no”. Intervention data collection occurred in the evening from 4 p.m. to 8 p.m. After the ten day learning period, participants then used the song to assist with following instructions and accepting “no”. In order to demonstrate experimental control, a control condition was introduced. The control condition consisted of using a multiple baseline across participant staggered intervention start times for the participants. Each participant started within two weeks of the next. Consequently, each participant staggered their start time of intervention. Ideally, by constructing the procedure in this fashion, it allowed for individual observations to occur independently for each participant in order to gather intervention data. Only one individual collected the data to ensure consistency between participants.

**Teaching-Family Model Techniques.** During the implementation of music, all participants were also exposed daily to Teaching-Family Model techniques. This included several strategies, such as effective praise, visual prompting, preventative prompting, point cards, planned ignoring, and vicarious reinforcement. Effective praise was delivered to the participants upon successful completion of following instructions and accepting “no” (Appendix K).

**Visual prompting** was used as a visual cue to remind the client to follow instructions and accept “no”. Visual prompts were posted on the windows, cupboards and written on point cards.

**Preventative prompting** was a teaching technique used to practice following instructions and accepting “no”. Preventive prompting involved providing verbal prompts to remind the participant of target areas and to possibly practice the skills needed. Prompting was ongoing and should take place just before the behaviour.

**Point cards** were used on a daily basis with all participants. Positive points were delivered for desired behaviours and negative points for undesired behaviours.

**Planned ignoring** was used when behaviours reached a point of disruption in typical behaviours or displayed escalation. This included removing all adult attention or audiences (other participants) that may have been present in the environment.

**Vicarious reinforcement** was provided through ongoing prompting and teaching which were provided to the other participants or individuals living in the group home within the participants view. Through these interactions, the participants had the opportunity to learn vicariously as others received consequences for accepting “no” and following instructions.

The intervention was continued upon the completion of the intervention phase, used informally to promote maintenance and generalization. Components of the program that are consistent with the Teaching-Family Model continued in the home after termination of the invention condition, thus allowing the skills of the participants to progress.
Chapter 4: Results

All participants demonstrated a significant relative increase in percentage of change of at least 40% for following instructions and accepting “no”. As the statistical analyses indicated, following instructions and accepting “no” results demonstrated significant statistical change at the \( p < .05 \) level.

CV and Following Instructions

With the use of the FAO as a recording tool, the use of the song and lyrics appeared to be effective in accelerating following instructions for CV. CV was able to raise her following instructions from a daily average of following instruction events of 43% to a daily average of 61%, which demonstrates 41% increase in percentage of change as shown in Table 1 and graphed in Figure 1. The trend of the graph indicates an increase from baseline and with continual use of these methods she will be likely to continue to maintain a stable level of following instructions (Appendix L).

Table 1

<table>
<thead>
<tr>
<th>Events of following instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV’s Events of Following Instructions</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Baseline</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
</tbody>
</table>

Figure 1. CV’s Daily Average of Events for Following Instructions
**JH and Following Instructions**

Using the FAO as a measurement of frequency, the use of the song and musical lyrics demonstrated to be effective for increasing events of following instructions. JH was able to raise her following instructions from a daily average of 21% to a daily average of 66%, which demonstrates 214% percentage of change as shown in Table 2 and graphed in Figure 2. The trend of the graph indicates that JH made significant improvements (Appendix M).

**Table 2**

*Events of following instructions*

<table>
<thead>
<tr>
<th>JH’s Events of Following Instructions</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>21%</td>
<td>20%</td>
<td>9%</td>
</tr>
<tr>
<td>Intervention</td>
<td>66%</td>
<td>68%</td>
<td>21%</td>
</tr>
</tbody>
</table>

![JH's Daily Average of Events for Following Instructions](image)

**Figure 2**

JH’s Daily Average of Events for Following Instructions

**RC and Following Instructions**

Using the FAO as a measurement of frequency, the song and musical lyrics demonstrated to be effective for increasing events of following instructions for RC. RC was able to raise her
following instructions from a daily average of 32% to a daily average of 72%, which demonstrates an overall percentage of change of 125%, as shown in Table 3 and graphed in Figure 3. The trendline of the graph illustrates that RC also made significant improvements for events of following instructions (Appendix N).

Table 3

<table>
<thead>
<tr>
<th>Events of following instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC’s Events of Following Instructions</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Baseline</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
</tbody>
</table>

Figure 3. RC’s daily average of events for following instructions

CV and Accepting “No”

Using the FAO as a measurement of frequency, song and musical lyrics demonstrated to be effective for increasing events of accepting “no”. CV was able to raise her accepting “no” behaviours from a daily average of 38% to a daily average of events to 53%, which indicates a percentage of change increase of 40% of as shown in Table 4 and graphed in Figure 4. The
trend of this graph demonstrated that the improvements were gradual, and will likely to continue to progress upwards with time. (Appendix O).

Table 4
Events of accepting “no”

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>38%</td>
<td>42%</td>
<td>5%</td>
</tr>
<tr>
<td>Intervention</td>
<td>53%</td>
<td>67%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Figure 4. CV’s daily averages for accepting “no” events

**JH and Accepting “No”**

Using the FAO as a measurement of frequency, song and musical lyrics demonstrated to be effective for increasing accepting “no” events. JH was able to increase her levels of accepting “no” from a daily average baseline of 44% to a daily average of 75%, which demonstrates a percentage of change of 172% as shown Table 5 and graphed in Figure 5. The trend of this graph demonstrates strong increases in accepting “no” behaviours for JH.
Table 5
*Events of accepting “no”*

<table>
<thead>
<tr>
<th></th>
<th>JH’s Events of Accepting “No”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Baseline</td>
<td>44%</td>
</tr>
<tr>
<td>Intervention</td>
<td>72%</td>
</tr>
</tbody>
</table>

Figure 5. JH’s daily averages for accepting “no” events

**RC and Accepting “No”**

Using the FAO to measure frequency, the song and musical lyrics indicated to be effective for accepting “no”. RC exhibited an increase in her levels of accepting no, raising from her daily average baseline of 29% to 71%, which demonstrates an increase in percentage of change of 70% as shown in Table 6 and graphed in Figure 6. The trend of this graph illustrates significant increase in levels of accepting “no” for RC (Appendix Q).
Table 6

*Events of accepting “no”*

<table>
<thead>
<tr>
<th></th>
<th>RC’s Events of Accepting “No”</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
<td>Standard Deviation</td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>29%</td>
<td>45%</td>
<td>.04%</td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>75%</td>
<td>77%</td>
<td>6%</td>
<td></td>
</tr>
</tbody>
</table>

![RC's Daily Average of Events for Accepting "No"

Figure 6. RC’s daily averages for accepting “no” events

**Statistical Analyses**

A one-tailed paired samples t-test was carried out between baseline and intervention for following instructions. The test revealed that there was a statistically significant difference between baseline and intervention, $t (2) = -4.13, p < .05$. The overall mean of following instructions for intervention (M = 66.33, SD = 5.51) was higher than the overall mean for following instructions during baseline (M = 32, SD = 11), hence the intervention with music condition had a significant effect on following instructions (Appendix R).

A one-tailed paired samples t-test was carried out between baseline and intervention for accepting “no”. The test revealed that there was a statistically significant difference between baseline and intervention, $t (2) = -5.41, p < .05$. The overall mean of accepting “no” for intervention (M = 66, SD = 11) was higher than the overall mean for accepting “no” during
baseline (M = 37, SD = 6), hence the intervention with music condition had a significant effect on accepting “no” (Appendix S).
Chapter 5: Discussion

Overall, the implementation demonstrated effectiveness in enhancing pre-existing teaching techniques. The hypothesis was supported by showing that music can increase following instructions and accepting “no” in children with FAS. All participants exhibited an increase in following instructions and accepting “no” when the music condition was introduced.

Program Changes

In an attempt to increase the success of this intervention, it has been suggested that more time to implement interventions would be helpful. Due to the busy schedule of the home, it was difficult to gather data and implement intervention some evenings. It would also be suggested that only a chorus of a song be used for future interventions in order to use time more efficiently. Using the song as stimulus prompt without rewriting lyrics may be as beneficial as rewriting meaningful lyrics (e.g., relating the song to skill development). This would be less time consuming for an individual implementing the procedure. As a trial to test this, the song was implemented during the morning routine as “wake up” music and seemed to improve staying on-task and following instructions during this time. Utilizing such interventions in different settings, rather than just the home in the evenings, may improve generalization of the skills of following instructions and accepting “no”.

For future use of this program, it is recommended that all participants continue to obtain attention through positive means (e.g., effective praise and positive points) and that planned ignoring be used when RC, JH and CV lose emotional control. Additionally, in the future, shaping may be incorporated to improve following instructions, as sometimes the instructions are not followed immediately. Overall, all participants responded well to the intervention procedures and appeared to enjoy music as an intervention, and therefore, it is suggested that the procedures be continued.

Strengths and Limitations

The strengths of this program consisted of the beneficial effects for all participants. It was found that all participants made significant improvements for both following instructions and accepting “no” during the hours of 4:00 p.m. to 8:00 p.m. JH and CV appeared to make gains in other areas, such as getting positive reports from school, engaging in conversation with their peers, and playing independently. Additionally, by all girls receiving additional positive points due to their increased level of following instructions and accepting “no”, they all made progress towards a higher token economy status, which resulted in access to more privileges. Consequently, this was also beneficial for staff, as they were addressing less negative behaviours (e.g., not following instructions, not accepting “no”) and spending more time engaging in positive teaching interactions.

The program design does include certain limitations that should be taken into consideration for the future. The program was an AB design, created for specific clients (adolescent girls); other FAS children may exhibit different characteristics that require alternative interventions to appropriately address their needs. The song that was chosen by the participants might not be suitable for another gender or other age groups.

In order to implement this intervention, a certain skill level and functioning was required from the client (e.g., clients were able to write and learn song lyrics). This intervention may not be suitable for children that are lower functioning or do not have strong verbal skills. In addition to this, some populations may have trouble with music being played, as it may contribute to over-stimulation, resulting in a deficit in attention.

The effectiveness of music can be improved by allowing clients to choose the song, as different types of music will appeal to various clients. This allowed for the participants to have
more involvement in the study and offering a choice of music may increase participation and the likelihood that participants will respond to the song.

The single-case AB design could have been improved upon. Baseline data collection for participants not in the intervention condition should have continued as the first participant began the intervention. This would have allowed the study to utilize a multiple-baseline across participants design. The multiple-baseline across-participants design would have allowed the study to demonstrate that the introduction of music was responsible for the increase in following instructions and accepting “no”.

No data collection took place during the morning routine; thus it may be beneficial to have observed behaviours at various times of the day. As well, observations only took place in the group home, so it is not known how well these improvements generalized to other milieus.

Finally, this program was implemented during the first three months of school, as it is known that FAS children may experience difficulty with school transitions (e.g., returning back to school). This may create difficulties establishing a stable baseline before implementing intervention.

Additionally, the role of medication and its effect was not measured (e.g., the medication may offer stronger effects during the time of day in which data was collected).

**Multilevel Challenges**

**Client level.** Challenges at the client level consisted of a diverse learning history and challenging living environment. Participants were exposed to different challenges and were involved in various treatment programs prior to this group home. For staff, addressing a wide range of issues may be difficult emotionally and challenge competency.

Diagnostic labels (e.g., FAS) and other impairments (e.g., hearing difficulties) may impact the learning process and make it increasingly challenging for those clients to learn new skills. Also, different children in the group home setting may become competitive with one another, which can lead to animosity between peers that interferes with treatment delivery. Having said this, participants working as a team or in a group sometimes have difficulty with one another (e.g., peer conflict), which results in a missed opportunity to develop friendship skills.

**Program level.** Due to the intense programming offered at this level, staff burnout or turnover may be problematic. Group homes require staffing 24 hours a day, and staff must be able to employ many different skills with the clients (e.g., cooking, cleaning, behavioural training, academic tutoring, activity planning, etc.). When lack of staff rotation exists, staff may become tired and feel stressed, which in turn makes it difficult to offer a high level of service delivery. Staff may also feel underappreciated, as clients can be difficult and ungrateful at times. This can contribute to staff carrying over negative feelings from one day to the next.

**Organizational level.** Individuals working at the managerial level are not in the teaching-family homes on a regular basis. Typically, program directors are only on site in the event of an emergency, so their background knowledge and client rapport is not always strong. Again, due to the structure of the program, supervisors are expected to be on call at any point during the day, but because of meetings and other commitments, supervisors are sometimes not available immediately. The expectations provided by the organization are not always realistic in terms of implementation. If decisions are made without the front-line staff, it could weaken the strength of the services offered. Additionally, financial cutbacks occur which impacts what services are feasible.

**Societal level.** At this level, it is important to advocate for services to continue. Advocacy also needs to continue for a wide range of services outside of the agency, such as providing educational assistance, psychological services, and physiotherapy. Also, building homes in middle to upper class neighbourhoods may be problematic, as it appears a stigma exists about having a “group home” within the community. Raising awareness about client needs is also important, as it is not uncommon for
clients with behavioural problems to appear “normal”; however, their behaviours may indicate otherwise. This may result in harsh treatment and repercussion for these clients and their acting out behaviours.

**Contribution to Behavioural Psychology Field**

The effectiveness of the teaching-family model and its teaching interactions has been demonstrated in the behavioural field. This study adds to this Teaching-Family Model and demonstrated that music can enhance these well established behavioural techniques in helping children with FAS develop social skills. As the results from this study indicate, the intensity of learning and skill development can be enriched with the introduction of music.

**Recommendations for Future Research**

This study was able to demonstrate that music can have positive effects for learning in FAS populations. The implementation of musical lyrics to enhance following instructions and accepting “no” indicated that music does improve the learning process and can results in important improvements in both behaviours. Overall, further research should be conducted to demonstrate its effectiveness with other related developmental disabilities populations and research should investigate various types of music to determine if different music affects different behaviours.
References


Appendix A: Informed Consent (09-10-07)

GUARDIAN CONSENT FORM

St. Lawrence College
100 Portsmouth Ave.
Kingston, Ontario K7L 5A6

Dear [Name],

I am a student in the Bachelor’s Degree in Behavioural Psychology [BPSYC] program at St. Lawrence College. This four-year degree program is based on a behavioural framework, which has been proven to be effective in developing life skills with a wide range of clients in institutional and community settings. The behavioural approach increases the client’s desirable behaviours through teaching, practice and encouragement.

I am currently enrolled in an Applied Thesis course. An applied thesis is an intervention or project that includes a very detailed report. The development of the intervention/project will include treatment program review, data collection, intervention and results. This client-focused intervention/project will be developed in collaboration with you, the agency’s staff, and team members.

The applied thesis project has been approved by Teaching Parents and as well as my College Supervisor, Marie-Line Jobin (BPSYC Professor), as well as the Research and Ethics Committee for Psychology.

The benefits of participating in the applied thesis is to further improve academic skills, participating as a group to learn new skills, learning new methods to develop skills related to teaching interactions through alternative forms (e.g., music, tactile objects, and visual prompts). The risks of participating in the applied thesis are extremely minimal yet might include non compliant behaviour from participants, create competitiveness between participants, and perhaps frustration in learning new academic skills.

I would like your permission to implement the intervention/procedures described above. The intervention/project will be developed under the supervision of Teaching Parents and Marie-Line Jobin. All information collected will be kept strictly confidential. Upon request, we will gladly share a copy of a brief report of the intervention.

If you will allow your family member to be included in the exercise, please complete the form at the bottom of this letter and return it to me as soon as possible. Participation in this project is voluntary and you may withdraw your family member at any time.

I sincerely appreciate your cooperation. If you would like to receive more information about the applied thesis or have additional questions or concerns, please contact my College Supervisor, Marie-Line Jobin at 613-544-5400 x 1112.

Sincerely,

April Wallace
BPSYC Student
Appendix B: CV’s Sequence Analysis (ABC) of Baseline Data (20-09-07)

<table>
<thead>
<tr>
<th>(A)</th>
<th>Behaviour (B)</th>
<th>(C)</th>
</tr>
</thead>
</table>
| 1. No adult attention while working on homework. | - Tries to engage in the conversation around her.  
- Becomes interested in objects around her  
- Tapping fingers | - Adult attention is given in the form of redirection  
- Negative points assigned for not following instructions |
| | - Engages in adult conversation.  
- Begins off topic conversation. | - Redirected back to work.  
- Rationale given to her “the faster you complete your homework, the faster you can begin something fun” |
| 2. Watching a desired television program and asked to get ready for bed. | - Refuses to get ready for bed on time. | - Adult attention is given in the form of negative points. |
| | - Continues to act silly (waving arms and talking in high pitched voice).  
- Engages staff in conversation | - Delayed her bedtime by 20 minutes, staff decided the following night she will go to bed 20 minutes earlier. |
| 3. Is given a “no” response when she asked to go to the park. | - Stomps feet, tears well up in her eyes, and arguing with the staff about the decision. | - Earns negative points.  
- Given rationale for not going to the park. |
| | - Continues to argue and not accept “no”, face becomes red, and begins to cry. | - She is asked to sit in the living room with no attention until she regains emotional control. |
| | - Calms down | - Earns back positive points for accepting “no” and saying ok in a calm voice. |
| 4. Wants to sit beside a particular staff at dinner | - Badgers staff member about where they are sitting at dinner. | - Earns negative points for not being patient, given rationale that staff will sit where they would like to sit.  
- Staff sits beside her. |
| | - Engages in conversation with only the staff member beside her. | - Prompted to engage in conversation with peers as well as adults. |
### APPENDIX C: JH’s Sequence Analysis (ABC) of Baseline Data (21-09-07)

<table>
<thead>
<tr>
<th>(A)</th>
<th>Behaviour (B)</th>
<th>(C)</th>
</tr>
</thead>
</table>
| 1. Makes a self-report about bad school day. | - Refuses to show staff her agenda.  
- Begins to cry. | - Positive points assigned for making accurate self-report.  
- Negative points assigned for negative school report, results in lost of privileges. |
| | - Crying escalates, yelling and swearing begins. | - Negative points assigned, intensive teaching begins, and JH was asked to sit by window for three minutes (or until calm). |
| | - Crying, yelling and swearing stops. | - Staff returns to initial instruction of requesting the agenda. |
| 2. School teacher calls about JH’s behaviour at school (e.g., swearing at other children). | - JH does not refuse to admit she was doing anything wrong at school.  
- Becomes angry, stomping, swearing, and flushed face. | - Staff goes into intensive teaching, praising approximations of appropriate alternatives. |
| | - JH continues to swear, but stops stomping. | - Staff praises the absence of stomping. |
| | - JH calms down, and admits that she was swearing at other children. | - Negative points assigned for swearing, positive point assigned for making an honest statement.  
- Assigned a problem solving activity. |
| 3. Cab driver reports that JH would not sit in the front of the cab. | - JH becomes defensive, and states she is not sitting in the front. | - Staff practices accepting “no” with JH. |
| 4. Sees that CV is reaching for the salad dressing. | - JH grabs the salad dressing first. | - CV yells at JH (negative peer attention).  
- JH is asked to get a new bottle of salad dressing from the pantry. |
| | - JH does not follow the instruction. | - JH is asked to sit away from the table until she is ready to apologize for using all the salad dressing.  
- CV goes and gets a new bottle of salad dressing. |
| | - JH apologizes and joins the table. | - CV accepts her apology and raises a concern that sharing is part of being a good friendship |
### APPENDIX D: RC’s Sequence Analysis (ABC) of Baseline Data (22-09-07)

<table>
<thead>
<tr>
<th>(A)</th>
<th>Behaviour (B)</th>
<th>(C)</th>
</tr>
</thead>
</table>
| 1. No adult attention while doing chore. | - Refusal to complete chore.  
- Asks adult questions about her chore.  
- Begins talking to others  
- Tries to engage in the conversation around her.  
- Continues to delay doing chore.  
- Continues to ask adults questions.  
- Does not accept “no”  
- Cries and pouts  
- Will not negotiate a different plan  
- Becomes upset and begins to yell, scream, etc.  
- Refuses to get ready for bed on time.  
- Argues with staff and delays following the instruction.  
- Does not let others speak during dinner conversations and revolves the conversation around her and other adults.  
- Pouts when praise is given to other children.  
| - Adult attention is given in the form of redirection  
- Negative points assigned for not following instructions  
| - Planned ignoring, which eliminates the crying, screaming, yelling.  
- Redirected to other activity (bed).  
| - Adult attention is given in the form of negative points.  
| - Writes down negative points, positive points assigned for calming down, and RC goes to bed.  
| - Conversation carries on without her participation.  
| - Adult attention is given in the form of negative points.  
|
Appendix F: JH’s Functional Assessment Observation Sample (01-10-07)
Appendix G: RC’s Functional Assessment Observation Sample (12-10-07)
Appendix H: Token Economy Point Card Sample (01-10-07)

**POINT CARD**

<table>
<thead>
<tr>
<th>Code</th>
<th>Pos. Points</th>
<th>Curriculum Skill</th>
<th>Specific Behavior</th>
<th>Neg. Points</th>
<th>T-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Following instruction</td>
<td>do-task</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Following instruction</td>
<td>say ok &amp; report back</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Getting along skills</td>
<td>polite manners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Accepting No</td>
<td>say ok &amp; stay calm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Accepting criticism</td>
<td>say ok &amp; make change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Following instructions</td>
<td>morning routine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Being prepared</td>
<td>ready for school on time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Not following instructions</td>
<td>Not doing task</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Following instructions</td>
<td>say ok</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Accepting No</td>
<td>stay calm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Problem-solving</td>
<td>find solution</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>50</td>
<td>Accepting criticism</td>
<td>say ok &amp; make change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Volunteer</td>
<td>offer help</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Accepting No</td>
<td>stay calm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Following instructions</td>
<td>old task</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Academic Skills</td>
<td>good day at school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Not Accepting No</td>
<td>no snack before dinner</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL MADE** 400

**POINT DIFFERENCE THIS CARD**

**BACK**

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Date: Oct. 1/07

Name: Liz

System: Weekly 400

**TARGET AREAS**

- Following Instructions
- Accepting No
### Appendix I: Mediator Instructions For Intervention Procedures

**CLIENT NAME:** CV, JH & RC  
**PROCEDURE:** Preventive Prompting  
**MEDIATOR(S):** April Wallace  
**LOCATION:** Teaching-Family Home  

**TARGET BEHAVIOUR(S) (operational definitions):**

1. **Following instructions:** the participant will be said to be following instructions when she makes eye contact with the individual delivering the instruction, says okay, performs the task right away, and she checks back to the adult who delivered the instruction to ensure the task was completed.

2. **Accepting “no” for an answer:** The participant will be said to be accepting “no” when she makes eye contact with the person delivering the “no” response, uses a calm voice tone that is slow and indoor appropriate, says “okay,” and demonstrates she is calm through her body language by not becoming red in the face, leaving her arms at her side, and not stomping her feet. Participants cannot pout or cry while accepting “no.”

### STEPS:

1. **REMINDER**  
   Provide a reminder of the skill paired with praise for following instructions or accepting “no”. (e.g., “You did a really great job accepting no when you asked for the candy at the store today.”).

2. **DESCRIBE BEHAVIOUR**  
   Describe the appropriate behaviour (e.g., “I really liked how you asked for permission for the candy, but when told “no”, you put the candy down, and said ok.”). It is important to be very specific about the appropriate behaviour.

3. **RATIONALE**  
   Provide a rationale for the appropriate behaviour (e.g., “If you are able to accept “no”, people will be more likely to take you shopping places; because you know you cannot have everything in the store.”).

4. **ACKNOWLEDGEMENT**  
   Request for acknowledgement (e.g., “Do you understand?”). This is an important step, and further acknowledgement (e.g., having the client describe the appropriate behaviour in their own words) might be necessary, as it is possible for the client to nod “yes” and not grasp the concept or understand rationale.

5. **PRAISE**  
   Provide other praise that is specific to the client (e.g., “Great job at engaging in conversation right now.”)

6. **QUALITY COMPONENTS**  
   Use quality components (e.g., using a calm and pleasant voice tone with the client and being genuine) and immediately provide the opportunity to use/practice the skill (e.g., “Ok, so we will be putting the groceries away, and I know there is a lot of yummy food, but because dinner is close, I will say “no” to any snacks.”).  
   * The same process may be used with following instructions.
Appendix J: Music Lyrics to We’re All in this Together (Rewritten for Following Instructions and Accepting “No”)

Together, together,
together everyone
Following instructions,
come on this can be fun
Say ok and follow up,
we’re there for each
other every time
Together, together come
on lets do this right
Here and now let’s start
a cleaning motion
I finally figured it out
That all us kids can meet
expectations
Pride’s what it’s all
about
Everyone can do it their
own way
We make house hold
strong
Chores are not a game
But we make them fun
any way
Spirits are becoming
strong
We’re all in this together
Once we know
That we are a team
We’re all stars
And we see that
We’re all in this together
And it shows
When we host
We can boast
Make our home shine
through
We’re all working
together
Steve will teach
to use bleach
Know inside
We can make it
We’re all in this together
Once we see
There’s a task
Say ok and
Follow through
Achievement Place sing
along
Yeah, you really got it
goin’ on

Achievement Place is the
house
Everybody get it done
Achievement Place
everywhere
Sweep your brooms up
to the air
That’s the way we do it
Let’s get to it
Time to show the world
We’re all in this together
Once we know
That we are a team
We’re all stars
And we see that
We’re all in this together
And it shows
When we host
We can boast
Make our home shine
through
We’re all working
together
Steve will teach
to use bleach
Know inside
We can make it
We’re all in this together
Once we see
There’s a task
Say ok and
Follow through
Achievement Place
everywhere
Sweep your brooms up
in the air
That’s the way we do it
Let’s get to it
Come on everyone!
Appendix K: Steps for Giving Effective Praise

1. Initial praise statement (e.g., “good job!”)

2. Labeling the skill (e.g., following instructions or accepting “no”)

3. Description of the appropriate behaviour (e.g., “Liz you were able to say ok, turn the TV off, and head up to your room”)

4. Provide a rationale (e.g., “when you are able to follow instructions, people will be more likely to listen to what you have to say”)

5. Request acknowledgement (e.g., “Do you understand, Liz?”)

6. Provide a positive consequence (e.g., positive points, high five, etc.).
Appendix L: Trendline for CV’s Events of Following Instructions

![Graph showing daily averages of following instructions during baseline and intervention phases, with percentage on the y-axis and days on the x-axis.](image-url)
Appendix M: Trendline for JH’s Event’s of Following Instructions

JH's Daily Average of Events for Following Instructions

Baseline Intervention
Appendix N: Trendline for RC’s Events of Following Instructions

RC’s Daily Average of Events for Following Instructions

Baseline

Intervention

Days

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Daily Averages of Following Instructions

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Appendix O: Trendline for CV’s Events of Accepting “No”

CV’s Daily Average of Events for Accepting "No"

Percentage of Accepting "No" Events

Days

Baseline

Intervention
Appendix P: Trendline for JH’s Events of Accepting “No”

JH's Daily Average of Events for Accepting "No"

- Baseline
- Intervention

Days

Percentage of Accepting "No" Events
Appendix Q: Trendline for RC’s Events of Accepting “No”
Appendix R: Following Instructions Raw Data and Statistical Analysis

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t-Test: Paired Two Sample for Means for Following Instructions

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## Appendix S: Accepting “No” Raw Data and Statistical Analyses

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### t-Test: Paired Two Sample for Means for Accepting “No”

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