Increasing Positive Verbal Interactions in Youth in a School Program Using a Cognitive Behavioural Intervention and Differential Reinforcement of Alternate Behaviour

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DEDICATION

For my family, who has always believes in me, even when I don’t.
ABSTRACT

Aggressive behaviour is a problem within school settings and is often displayed in the form of negative verbalizations. Much of the literature that focuses on aggression supports the need for targeted interventions that address these issues and suggests that cognitive behavioural therapy (CBT) and behavioural interventions work best. It was hypothesized, then, that through the use of a cognitive intervention followed by the differential reinforcement of a more socially acceptable (or alternate) behaviour (DRA), youth could increase their positive interactions while simultaneously decreasing their negative ones. The study consisted of case three male youth and used a multiple baseline across subjects design. The youth participated in a cognitive intervention followed by DRA sessions aimed at improving their positive interactions. The results of the study showed that the cognitive intervention was successful at decreasing negative verbalizations and the DRA intervention was successful at increasing positive interactions. Despite this success, however, further research into how to make a DRA intervention more useful within less structured settings was recommended as there were no indications that the gains made during the intervention would last.
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Chapter I: Introduction

Aggression is a pervasive problem that carries on through generations, can be taught by both peers and role models (Huesmann, Dubow, & Boxer, 2011), and has many physical, psychological and emotional implications for the lives of not only those who cannot control it, but also people who are a part of their lives. In the case of youth who are aggressive, there are typically fewer positive social relationships which Palmen, Vermande, Deković, and van Aken (2011) postulated could lead to higher levels of delinquency, inappropriate classroom behaviour, and dropout.

Within a school program for suspended youth, staff, volunteers, educators and students work together to provide the best education possible for youth who have been removed from their classrooms due to conduct or behaviour problems. These youth typically display a range of externalizing and internalizing behaviours that affect both how they interact and are viewed within the classroom (Efrati-Virtzer & Margalit, 2009). This includes – but is not limited to – aggressive verbal behaviour. Aggressive verbal behaviour is defined as a verbal behaviour designed to inflict emotional pain on an individual (Yamasaki & Nishida, 2009) and has been identified by classroom staff as a pervasive problem. As Yamasaki and Nishida state, the aggressiveness of the language is not always intentional, however, and this, combined with a lack of positive language, can contribute to the overall tone of negativity in the classroom. The necessity for intervention is significant, as these youth often display aggressive verbal behaviours, hostile teasing, and swearing that can create discomfort and tension in various settings.

Cognitive Behavioural Therapy (CBT) is a form of therapy that aims to change cognitions and negative thought patterns (Kush, 2009). These thought patterns can be about anything and can even result in aggressive behaviour. Nitkowski, Petermann, Büttner, Krause-Leipoldt, and Petermann (2009) found that by changing the way an individual thinks about certain situations, he can also change the way he reacts. In the case of aggressive youth, misperceptions around how they see themselves and how others see them can often cause conflicts in their lives with those around them, if and when the perceptions do not match up. By changing these perceptions, it should be possible to change how a youth reacts.

Differential reinforcement of alternate behaviours (DRA) has been used for many years to accelerate a desired behaviour while decreasing an inappropriate or undesirable behaviour (LeGray, Dufrene, Sterling-Turner, Joe Olmi, & Bellone, 2010; Miltenberger, 1997; Nitkowski et al., 2009; Vollmer, Roane, Ringdahl, & Marcus, 1999). While researchers frequently have success through the reinforcement of an alternate behaviour and the extinction of undesirable behaviour on individuals with developmental delays, an area that remains largely unknown is the effects of DRA with a typically developing individual. The studies that do exist show potential, and further research on this topic is warranted.

Because of the promising nature of the studies on DRA within a typical classroom, it was hypothesized that, through the use of DRA and cognitive training in a
classroom program, it would be possible to increase the amount of positive interactions in the classroom while simultaneously reducing the amount of negative interactions, as youth with behaviour problems typically respond well to rewards and behavioural strategies (Hinshaw, 1992).

The chapters will be presented as follows:

Chapter II provides a review of the relevant literature, which includes a summary of research on aggressive behaviour in youth and covers causes and possible reasons as to why youth may be aggressive or perceived as aggressive. It also reviews studies of different types of interventions that have been used to address aggression in youth. Following that, the relationship of the literature to the present study will be explored.

Chapter III provides a summary of the methodology for the thesis, including an overview of the population, the design of the study, the setting and apparatus as well as the measures and procedures. This also includes the informed consent procedures, as well as the materials used within the study.

Chapter IV shows the results, including a review of the functional assessment, the baseline data, as well as the intervention results. The data was analysed visually as to its level of impact on the verbal behaviour of the youth.

Chapter V is the conclusion and discussion, and deals with the strengths and limitations of the study, as well as provides an overview of the multilevel challenges to the intervention. The results also are interpreted and placed in context of the existing literature.
Aggressive Behaviour in Youth

Aggression has been defined by Webster’s dictionary (2011) as “overt or suppressed hostility, either innate or resulting from continued frustration and directed outward or against oneself”. Aggression was defined by Yamasaki and Nishida (2009) as having three separate and distinct types: reactive-expressive, reactive-inexpressive, and proactive relational. Reactive-expressive aggression was said to have occurred when anger was expressed as verbal or physical aggression. Reactive- inexpressive aggression had occurred when the anger was unarticulated hostility, that is the anger was felt but not necessarily expressed to the target individual. Proactive-relational aggression was when aggression was used to obtain a goal or desire, and may or may not be associated with the emotion of anger. While the present study is concerned only with reactive-expressive aggression, Yamasaki and Nishida found that youth who used one form of aggression are more likely to use the other types as well. They stated that aggression is highly correlated with externalizing problems, which can frequently result in delinquency.

The effects that academic underachievement may have on youth are multifaceted, in that it can also impact staff, teacher and peer relationships (Efrati-Virtzer & Margalit, 2009). Hinshaw (1992) and Efrati-Virtzer and Margalit (2009) has shown that the overlap between aggressive behaviour and academic underachievement is high. Youth who had shown academic underachievement also typically had a low tolerance for rules and a high level of frustration with everyday tasks, and would often become agitated when approached with academic instructions (Hinshaw, 1992). Conduct disordered youth also were shown to have poor thoughts about fairness and rules, which in turn lead to anger, which can be a precursor to aggression (Fives, Kong, Fuller & DiGiuseppe, 2011). Mere instruction did not typically work to help youth with these particular challenges learn (Hinshaw, 1992), so alternative solutions such as behavioural programs with high rates of reinforcement or more tactile, hands on learning help to reduce stress and conflict within the classroom. These youth also typically lag behind in their interpersonal skills (Burack, Flanagan, Peled, Sutton, & Zygmunтовicz, 2006) which, when combined with poor academic performance, can result in frustration and a sense of isolation. In a study by Yamasaki and Nishida (2009), children who displayed reactive-expressive aggression showed few important peer relationships which, in a study by Palmen et. al. (2010), was found to be a contributing factor in disruptive classroom behaviours and dropout.

Youth who are aggressive also often show a lack of interpersonal skills. This can include a lack of perspective-taking skills and egocentrism, where the youth does not understand that there is a difference between his own perspective and that of another person (Burack et al., 2006). This typically results in the youth being unaware of the viewpoint of someone else, and subsequently remaining trapped in his own. Youth with poor interpersonal skills will often find themselves in social situations where their problem solving deficits become more apparent, which can cause hostility and frustration (Efrati-Virtzer & Margalit, 2009). This, in turn, can result in aggressive behaviour.
Burack et al. (2006) showed that conduct-disordered youth often see themselves as ‘better’ than their peers. This means that they often have elevated opinions of themselves that do not reflect reality; in the study, these youth consistently self-rated higher than typical peers of the same age group. This can result in inappropriate interactions with others in the classroom, as these youth typically approach interactions with other individuals with improper and inflated perceptions of themselves, especially when compared to their peers. This can easily result in consistently poor interactions that often end in aggression, as well as a lack of friends (Burack et al., 2006).

Some youth who are not aggressive can be seen as such, due to ignorance of the social norms of teasing (Keltner, Capps, Kring, Young & Heery, 2001). Keltner et al. (2001) state that teasing is often used – and intended – as an easy way to tell an individual that he or she is acting in a way that is counter to how one is typically expected to behave, and as such serves a regular developmental purpose. The hallmark of these interactions can often be a hostile or aggressive word or action, paired with some “off record markers” intended to indicate the offending comments or actions should not be taken seriously. Teasing can be considered more or less hostile, depending on the context; the circumstances in which an individual may use a more hostile tone of joking can be when there is an increased form of familiarity or, conversely, when the person is not concerned with losing face. In situations where a person is not concerned with losing face, his or her teasing was shown to be more aggressive with less of the markers that indicate the comment should be taken in jest. Keltner et al. go on to state that many negative remarks that are intended as a joke or jest can be misinterpreted when used in an inappropriate context. For youth who may rate themselves higher than others, their concern with losing face may result in misunderstandings or inappropriate interactions.

**Behavioural Programs to Reduce Aggression**

There is empirical support for the idea that behavioural treatments have been effective in reducing problem behaviours. In a study aimed to assess the effectiveness for behavioural treatment over baseline conditions with two individuals, Dozier et al. (2007) found that both preferred the reinforcement options offered in the treatment conditions more than the automatic reinforcement they were receiving from their problem behaviours or the non-contingent reinforcement condition. Dozier et al. stressed the highly reinforcing value that choice can have on an individual in a setting where he or she may not have much ability to choose. Hagopian, Bruzek, Bowman, and Jennet (2007) found that youth who were engaging in a desired activity did not respond well when directed to change tasks using a ‘do’ or ‘don’t’ command from a parent or authority figure. Rather, that type of directive resulted in an increased number of incidents of the problem behaviour. Hagopian et al. found that using access to the preferred activity or item based on the occurrence of the appropriate response increased the levels of positive verbal responses while reducing the instances of problem behaviour.

In a meta-analysis by Wilson, Lipsey and Derzon (2006), it was shown that targeted, school–based interventions were universally useful for reducing aggressive behaviours in school–aged children and youth. This was especially true for demonstration programs, while the untreated control groups and the relatively few routine
Interventions implemented regularly within the classroom showed no reductions in aggressive behaviours. The study also found that one-on-one attention was very effective as a reinforcer in a school-based intervention. Within this, behavioural approaches combined with cognitive-behavioural therapy were the most successful in reducing aggressive behaviours, with social competence training showing similar results. This was true across all age groups, which implied that an appropriate classroom intervention is, more often than not, useful. In a study that aimed at reducing bullying in classrooms, Gollwitzer, Eisenbach, Atria, Strohmeier & Banse, (2006) showed that it was possible to change the behavioural repertoire to encourage appropriate responses in a school setting. This increase was shown in the demonstration groups but, once again, was not reflected in the untreated control groups.

**Cognitive Behavioural Therapy**

Empirical support was found by Nitkowski, et al. (2009) in using cognitive behavioural therapy (CBT) to treat aggressive behaviours in youth. This was done through attempting to correct distorted thinking. Nitkowski et al. (2009) found that aggressive youth often react aggressively because of how they perceive they were being seen in certain social situations. For example, in a stressful circumstance, a youth may react aggressively because a threat was understood despite the absence of any real hazard. By changing the way the youth perceives himself and other people during those stressful circumstances, it was found that CBT could help the youth subsequently change the way the youth interacted in stressful situations. They also had high levels of success in trading tokens earned in therapy for free time; a youth earned a token for each session of CBT that he or she participated in. The use of play as a reinforcer was found to be extremely salient.

Gollwitzer et al. (2006) in their study of the Viennese Social Competence Training found success in enriching the behavioural repertoire of four grade six and eight classes to include more appropriate responses for the victim, bystander and bully in situations where bullying was occurring. In this study, Gollwitzer et al. used a primary preventative measure, which was an interactive approach that dealt with the concept of bullying and offered solutions on what each party involved could do should bullying occur. The approach focussed on all youth involved in bullying – that is, the victims, the bystanders and the bullies themselves. The program was offered in conjunction with CBT, and when compared to the control group the study showed that the youth were more successful in reducing the hostile attribution biases of the aggressive youth and increasing the desirability and “cognitive access” of non-aggressive responses in situations where conflict was likely to occur. This implies that youth who show some levels of aggression can learn different responses -- that is, they can enrich their existing ones or add to what they already have. In the study, success was found when teaching social-perspective taking skills to youth with behaviour problems, which, it was hypothesized, could help them make new friends and improve their relationships with adults in other settings.
Sukhodolsky, Kassinove, and Gorman (2004) conducted a meta-analysis which examined the effects of CBT on children and adolescents with anger related problems. He looked at 21 published studies and 19 unpublished reports. They found that the results of the literature suggest that use of CBT with youth with anger related problems are consistent with the results of therapy with children and youth in general; there is a medium effect for both. The study also found that when a multimodal approach was chosen over strictly CBT, the effect size was subsequently increased.

In a comparison of brief psychodynamic therapy and CBT, Kush (2009) noted that the majority of outpatient therapy took place in an acute setting: therapy typically takes place over a short period of time and occurs when the individual is in a state of extreme distress, such as an acute depressive episode. She states that although there is no empirically based short form of therapy, because CBT focuses on cognitive restructuring, behaviour change, and client participation it is well suited to dealing with such acute episodes; specific and non-specific intervention strategies are extremely useful in obtaining behaviour change.

**Differential Reinforcement**

According to Miltenberger (1997), differential reinforcement is “a procedure in which a specific desirable behaviour is followed by a reinforcer but other behaviours are not. The result is an increase in the desirable behaviour and the extinction of all other behaviours” (p 334). Furthermore, there is differential reinforcement of alternative behaviour (DRA) which is the reinforcement of another, more desirable behaviour. Leitenberg, Burchard, Burchard, Fuller, and Lysaght (1977, as cited in Miltenberger, 1977) used DRA to increase appropriate behaviours between siblings in six families, while simultaneously reducing incidents of aggression, verbal attacks, screaming, and crying. This was done by way of “praise and pennies” (p. 335) to reinforce the desired behaviour and planned ignoring of the problem behaviour.

In a relevant study that compared two differential reinforcement interventions for children that engaged in disruptive classroom behaviour, LeGray et al. (2010) found that each intervention was successful in reducing the inappropriate verbalizations of typically developing children in a preschool classroom. Each intervention targeted the specific function that the problem behaviour served, and the intervention was designed around it. They tested both DRA and the differential reinforcement of other behaviour (DRO) and found that both were successful, although DRA consistently resulted in greater reductions in disruptive behaviour across participants. The DRA sessions involved a pre-teaching script that was used immediately before each session; the child was removed by the teacher to a quiet corner of the room, and directly instructed on the targeted replacement behaviour. The script operationally defined both the appropriate and inappropriate behaviour. Following the pre-teaching, once the child could answer correctly two questions about what was expected, he or she was allowed to rejoin the rest of the class. During each session, the reinforcer was delivered after the first appropriate vocalisation following 30 seconds of no disruptive behaviour. In the DRO sessions, teachers ignored any undesired behaviour and awarded the reinforcer based on its non-occurrence. While both interventions were found to be significantly more successful than the control
session, DRA was shown to be better at maintaining the reduction of inappropriate vocalizations. LeGray et al. speculated that this was because instead of simply ignoring the inappropriate behaviour, the children were also given a behaviour that replaced the negative one. They further went on to hypothesize that DRA would then be the preferred intervention for typically developing children, as the replacement behaviour was key in maintaining the reduction in undesired behaviour.

In a study that evaluated the effects that treatment challenges can have on DRA interventions, Vollmer et al. (1999) purposefully introduced flaws in the reinforcement schedule of a DRA intervention. They did this because they acknowledged that, during lab-based studies, interventions are often performed perfectly which is not something that is likely to be replicated outside that setting. They stated that, in most settings, it was unlikely that the inappropriate behaviour would never be paired with a reinforcer and that knowing the effect that could have on the intervention would be important. They found that despite the problem behaviours providing some reinforcement there was still a tendency towards the appropriate behaviour. Vollmer et al. speculated that DRA is an intervention that is typically resistant to treatment failure.

Relationship Between the Research Literature and the Present Study

Burack et al. (2006) and Wilson et al. (2003) found that the youth who were at the highest level of risk were the ones who are most likely to benefit from school interventions. Efrati-Virtzer & Margalit (2009) found that youth with moderate levels of disruptive behaviour should be the highest priority for intervention. Both these viewpoints are supported by Andrews and Bonta (2011) who state in their risk-needs-responsivity (RNR) model that those who benefit the most from intervention are those who show moderate to high levels of need. Andrews and Bonta posit that, by targeting the appropriate population as well as the specific criminogenic need using effective treatment strategies, incidents of problem behaviour will be reduced. Over the last two decades, the RNR model has shown to be effective (Andrews & Bonta, 2010). Youth who have been expelled or suspended from their schools fit this profile and would subsequently benefit most from this study.

By improving social interactions, Burack et al. (2006) predicted that the youth would be more likely to make friends, which Palmen et al. (2011) argued could be a protective factor against further incidents of aggression or academic underachievement. Youth who don’t have many opportunities to make choices in their own lives may also like to take part in behavioural interventions as it could offer them a measure of control where they may typically have any. As stated above, Dozier et al. (2007) found that the ability to choose was a salient factor in how reinforcing an item was. They also indicated that youth who do not respond well to directive commands often do react well to commands that offer an opportunity to obtain or earn preferred activities as a reward. As the present study does, offering the youth the choice whether to participate or not could be reinforcing in itself and help facilitate the desired change. Additionally, Dozier et al. indicated that youth who do not respond well to directive commands often do react well to commands that offer an opportunity to obtain or earn preferred activities as a reward. By requiring the appropriate behaviour before allowing the youth to engage in preferred
activities with a staff member or another student could help him learn to socialize more appropriately and allow for further reinforcement outside of the intervention, as well as reduce the potential for conflict between staff, other students and the youth.

As well as the reinforcing value of choice, using a cognitive worksheet that is designed to help educate the youth about their own language use could help to increase the number of positive interactions. Because CBT offers real solutions for addressing aggressive behaviour (Nitowski et al., 2009), using a cognitive intervention could similarly show positive results. As Kush (2009) stated, because cognitive-behaviour therapy focuses on the behaviour change itself it is well suited to short interventions that directly address the problem behaviour and the cognitions around it. Using a brief cognitive intervention could offer each youth a higher occurrence of positive behaviour, as well as more positive interactions with placement students, volunteers and staff.

Finally, as Hinshaw (1992) has shown, many youth with behaviour problems do not respond well to pure academic instruction; this is why offering the youth a replacement behaviour and rewarding them contingent on the occurrence of the desired behaviour would be more likely to ensure that the current study results in a learned behaviour and increases positive results. Hinshaw (1992) suggested that a reward program with high rates of reinforcement would help these youth learn where mere instruction would not; the reward system would also help these youth to display fewer problem behaviours in the classroom and give them something to work towards. Finally, as Vollmer et. al. (1999) have shown, DRA is resistant to program challenges which would make it an ideal intervention for a classroom setting in which –for various reasons – a program may not be implemented perfectly.

Therefore, the present study hypothesizes that by pairing the brief cognitive intervention with a DRA component, it would be possible to obtain the positive results from both. Using the cognitive intervention to both assess the youth’s attitudes about and draw attention to their use of aggressive language could have a positive effect on reducing their aggressive language. Combining this with the use of DRA would have the effect of helping the youth to maintaining and building on those initial gains.
Chapter III: Method

Participants and Setting

The participants were three male youth in a school and non-academic program for expelled or suspended youth. All of the youth were 16. They were selected for the study based on their attendance in the program; each youth was an expulsion student who attended regularly. Youth were excluded from the program when they had been suspended for less than twenty days, and would not be in the program until the end of the semester. Youth who were expelled but did not attend regularly at the beginning of the study were also excluded.

Youth 1 was a 16 year old male who was attending the program. He did not attend the program regularly, and when he did, he was intensely negative about himself and his abilities. He swore frequently and stated that it was because there was no other way to say what it was he had said. Staff indicated that Youth 1 had always been intensely negative and that his swearing caused conflict between himself and staff in the class. There were no developmental, physical or biologically-based concerns such as medical diagnoses for Youth 1. While he was supposed to be in grade 12, he had only completed four of the necessary credits to graduate. He was also, at the time of the study, on trial for a break and enter charge that was likely to send him into custody.

Youth 2 was also a 17 year old male attending the program. Youth 2 had excellent attendance in the program and attended daily. He was extremely impulsive and swore frequently. While not remarkably negative, he was not especially positive in that he said more negative things than positive. His behaviour was extremely erratic, and when he refused to take his medication it was unmanageable. Staff reluctantly recommended he be included in the study, as his behaviour was difficult to manage, and they were unsure whether the intervention would be successful. Youth 2 had significant developmental delays; although he could read and write, he had been diagnosed with significant developmental delays. He had also been diagnosed with Fetal Alcohol Spectrum Disorder (FASD), ADHD and ODD. He was on medication for his diagnoses.

Youth 3 was a 17 year old male attending the program. Youth 3 had excellent attendance in the program. Of all the youth, he was the most positive and had no problems with swearing. While Youth 3 was the most positive of the youth in this study, he also had a discomfiting way of complimenting and talking to the female staff that made them uncomfortable. This had occurred since his first day of entry into the program. There were no developmental, physical or biologically based concerns with Youth 3. Youth 3 was behind where he needed to be academically, but not far behind; he could read, write and do basic math. Despite Youth 3’s lack of negative language, staff indicated that they wanted him to participate in the intervention.

Informed consent was obtained from the youth, as the program was covered under the Child and Family Services Act. The consent form (Appendix A) included information on what would be required of the youth, potential risks and benefits, and where the
consent forms and experimental materials would be stored. The youth were given the opportunity to ask questions, as well as informed that should they wish to withdraw from the study there would be no penalty.

The research study was approved by the St. Lawrence College Research Ethics Board.

Design
The design of the study was a multiple baseline across subjects design and targeted both positive and negative verbal behaviour. Positive verbal behaviour was said to have occurred when the youth engaged in a positive comment or social interaction in the classroom (e.g. “thank you” or “this sandwich tastes great!”), or when the youth was observed to actively abstain from swearing or used a different word (e.g. darn for damn). Negative verbal behaviour was defined as swearing, cursing or negative remarks which were disparaging comments (e.g. “in your face” or “you suck”) regarding an individual’s appearance or ability with both staff and peers. The dependent variables were negative verbal behaviour and positive verbal behaviour while the independent variables were administration of a cognitive worksheet and differential reinforcement of positive verbal behaviour through attention, praise, and reward (time earned toward a preferred activity).

Data were analyzed using a visual analysis of graphs through a multiple baseline across participants design. Percentage of non-overlapping data for positive verbal interactions, and percentage of data that exceeds the median for negative verbal interactions was calculated, as was the slope of both the baseline and intervention to determine if there were any trends within the data.

Setting and Apparatus

The intervention took place in a school and non-academic program for suspended or expelled youth. This program provides academic support, as well as cognitive work on topics relevant to each youth. The materials used included a data sheet designed by the researcher (Appendix B), as well as pens and a cognitive worksheet (Appendix C) used as part of the intervention.

Measures

Functional assessment included the Functional Assessment Checklist for Teachers and Staff (FACTS) (March, Lewis-Palmer, Brown, Todd, & Carr, 2000), which was used to determine why staff believe a particular behaviour occurred. It relied on a staff member’s knowledge of a youth, and attempted to find problem areas within a particular routine. Part A began by identifying problem behaviours within the classroom, and then followed with a typical classroom schedule. Each part of the schedule had a piece of a typical classroom day, such as math. After each item in the routine, there was a Likert scale which asked the individual to rate the likelihood of problem behaviour on a scale of 1 (low probability) to 6 (high probability) within that particular area of the routine. Part B allowed the individual to choose one inappropriate behaviour that was likely to occur
within a specific routine. It identified events that predict and immediately follow the problem behaviour, as well as specific consequences that typically follow. It finally provided a summary of behaviour, and an opportunity to identify previous strategies, if any, that had been used to correct the problem behaviour. A Functional Assessment Observation (FAO, O’Neil et al., 1997) form was also completed for each youth by the researcher. The FAO is a form of functional assessment that attempted to determine why each behaviour occurred as it did. This was done by offering the chance to, on the occurrence of a behaviour, check off the perceived function of the behaviour as well as the actual consequence. It allowed the observer to outline behaviours of concern that could be modified by intervention.

For baseline and the two phases of intervention, frequency data were taken on instances of both negative verbal behaviour and positive verbal interactions. Each youth was observed for 30 minutes each day, during which time each instance of either negative verbal behaviour or positive verbal behaviour was recorded as having occurred.

The dependent variables were negative verbal behaviour (decelerate) and positive verbal behaviour (accelerate) and were recorded via frequency recording during one 30 minute interval each day. Frequency recording was chosen as it was the best way to determine the rate at which both behaviours occurred; this was done for both baseline and intervention recording. The target behaviours were chosen based on data taken during functional analysis, which is presented in the results section.

**Procedures**

A functional analysis was conducted for each student prior to any baseline data being taken. Then baseline recording of both positive and negative verbal behaviour was taken for 30 minutes each day over three days or until baseline levels of positive verbalizations were stable. Once a stable baseline was established for Youth 3, the intervention phases were introduced. For Youths 1 and 2, however, intervention was begun before a stable baseline was established, due to time constraints.

The intervention consisted of two phases. The first consisted of administration of a cognitive worksheet, modeled after the ones already done by the youth in the program. This sheet asked the youth questions such as ‘what do you think positive language is’ and ‘how might using positive language help you in your everyday life’. The worksheet attempted to bring the idea of positive language to the youth’s attention. For the day of administration of the worksheet and for two days following its completion, the youth was observed for the same amount of time as during baseline (30 minutes). The purpose of this phase was to determine whether or not the cognitive worksheet in and of itself had an effect on positive or negative verbal behaviour. This process was interactive, with the researcher asking questions and the youth responding. The average amount of time that each youth took to complete the worksheet was 30mins.

The second phase consisted of the differential reinforcement of positive verbal behaviour. This phase consisted of reward for positive verbalizations (praise, attention, and free time for a preferred activity) based on successively higher criterion levels. Each
level consisted of reinforcement based on the occurrence of positive verbal behaviour. Reward at the first level of the criterion was given for a slightly higher number (the next whole number) of positive verbalizations than observed during baseline; subsequent levels required an increased rate of positive verbal behaviour, each level being approximately one whole number higher than the previous level. At each level, a youth was able to earn fifteen minutes of free time each day, which he was not able to carry over to the next day. At the end of each recording period, he was informed whether he had obtained his free time or not. Before each intervention session, the youth was told how many positive things he would need to say in order to earn his free time. He was also reminded of the sort of things qualified as a positive. When a youth had reached criterion for 3 days in a row, he was then moved to the next criterion level. During baseline and intervention phases, ignoring of any negative verbal behaviours was implemented.
Chapter IV: Results

Prior to intervention, functional assessment and baseline data were taken on each of the youth involved. Functional assessment data included a completed FACTS interview (March, R., et al., 2000) with a staff member (see Appendix D for raw data for each youth), as well as an FAO (O’Neil et al., 1997) observation sheet filled out by the researcher or a placement student on both the positive and negative interactions during a 30 minute time period on one day (see Appendix E for raw data for each youth). Baseline data were frequency recordings of both positive and negative interactions with each youth in a 30 minute time period. Baseline was taken for three days with Youths 1 and 2 and was not stable; however, intervention was begun due to time constraints. Baseline was taken for four days with Youth 3 and was stable. (Raw data for baseline for each youth can be found in Appendix F.)

Functional Assessment Results

FACTS interview.

For Youth 1, the FACTS identified his problem behaviour as negative verbal interactions, and this occurred primarily during any transition as well as frequently during instructional time. The predictors identified for his problem behaviour were problems with peers, conflict at home, approaching court dates and difficult school tasks. He also swore primarily when he was talking with staff and not the other youth. When any of these things were happening, Youth 1 would refuse to focus on his school work, instead indicating that he “just couldn’t do it,” and would frequently leave the classroom early. He also was frequently absent. The maintaining consequences for this behaviour were attention from staff, as well as escape from difficult tasks; staff would often see that he was frustrated and allow him to stop working on academic work to “take a break”.

Youth 2’s negative verbal interactions were identified as most likely to occur during instruction or when he was engaging with staff or peers. The behaviours identified were aggressive and negative language, as well as being disruptive and talking out of turn. A significant predictor of this behaviour was when he did not take his medication, when he had conflicts at home, or when he spent the weekend with his mother, as he lived with his grandparents. Problem behaviour was predicted within the classroom by a difficult task or an undesired activity. The behaviour was maintained by escape, as by engaging with staff, volunteers, and placement students in a negative way would typically result in his being left alone in the hallway to calm down. During this time, he did not work on academic work.

In the case of Youth 3, the FACTS identified his problem behaviour as inappropriate verbal interactions, which included flirting with female staff as well as making suggestive comments to two of the female placement students in the classroom. These comments occurred four out of five days and were predicted by the presence of two of the female placement students. He did not direct any suggestive comments to the
staff. The maintaining consequences for this behaviour were believed to be attention from both the placement students and staff within the classroom and, potentially, escape since each time he made an inappropriate comment he would be removed from the class to have a conversation with a staff member.

**FAO results.**

During the FAO for Youth 1, there were five incidents of negative verbal behaviour. Three were predicted by a cognitively difficult task, as well as a one that would take a long time, and the perceived function was to obtain attention in all three. In all but one of the occurrences, attention was provided; in the one occurrence that attention was not provided, there was no reinforcer. In one incident, the behaviour occurred as a result of a request made of the student. The perceived function was attention, and attention was provided. In a final incident, the student hurt himself and swore as a result; attention was provided.

For Youth 2, there were two incidents of negative verbal behaviour during the FAO. Both were predicted by interactions with staff, as well as an undesirable activity (academic work). In both instances, escape was the perceived function, and escape was the actual consequence.

For Youth 3, there were no recorded incidents of negative verbal behaviour during the FAO.

**Frequency of Positive and Negative Interactions at Baseline**

Table 1 shows a summary of the data on positive verbal interactions recorded for each youth. Baseline results indicated a low number of positive verbalizations by all youth. Their mean number of positive verbalizations were 0.33, 0.00, and 2.00, respectively. This may also be seen graphically in Figure 1 below (page 15) in the section of the figure labeled “Baseline”.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth 1</td>
<td>0.33</td>
<td>0.00</td>
<td>0.58</td>
</tr>
<tr>
<td>Youth 2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Youth 3</td>
<td>2.00</td>
<td>2.00</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Baseline data taken on negative verbal interactions is summarized in Table 2 and may also be seen graphically in Figure 2 below in the section of the figure labeled...
“Baseline” (page 17). Negative interactions occurred at a higher rate in the cases of Youths 1 and 2, with means of 4.30 and 1.67, respectively. In the case of Youth 3, there were no negative verbal interactions recorded during baseline.

Table 2
*Summary Statistics of Negative Verbal Interactions During Baseline*

<table>
<thead>
<tr>
<th>Youth</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth 1</td>
<td>4.33</td>
<td>3.00</td>
<td>3.21</td>
</tr>
<tr>
<td>Youth 2</td>
<td>1.67</td>
<td>2.00</td>
<td>1.53</td>
</tr>
<tr>
<td>Youth 3</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Treatment Results**

**Positive Verbalizations.**

There were two intervention phases involved in this study. The first was a cognitive worksheet that was designed by the researcher and mimicked similar worksheets frequently done by the youth with staff (see Appendix C). During the cognitive intervention phase, Youth 1 indicated a desire to change the way he interacted with others as well as a knowledge that how people perceived him was in part a result of his choice of language (see Appendix G for completed worksheets). However, Figure 1 on page 15 shows that there was no actual change in positive verbalizations made by this youth following the implementation of the cognitive phase. See Appendix H for the raw data for intervention phases for Youth 1 and Table 3 for summary statistics for this youth. Youth 1 did not participate in the second phase (DRA) of the intervention due to his lack of attendance.

Table 3
*Summary Statistics of Positive Verbalizations During Intervention Phases*

<table>
<thead>
<tr>
<th>Youth</th>
<th>Cognitive Phase</th>
<th>Cognitive Phase</th>
<th>DRA Phase</th>
<th>Cognitive Phase</th>
<th>DRA Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.00</td>
<td>0.00</td>
<td>1.73</td>
<td>2.67</td>
<td>375</td>
</tr>
<tr>
<td>Median</td>
<td>0.00</td>
<td>0.00</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.00</td>
<td>0.00</td>
<td>0.90</td>
<td>2.08</td>
<td>1.42</td>
</tr>
</tbody>
</table>
Figure 1. Frequency of Positive Verbal Interactions
* indicates criterion level
For Youth 2, the cognitive phase showed no change in positive verbalizations from baseline levels. For raw data, see Appendix H. While he indicated that he said primarily positive things throughout the day, Youth 2 also indicated that he wanted to change the way he spoke so people would regard him more positively (Appendix G). During the cognitive intervention phase, there was no increase in Youth 2’s positive verbalizations. (His mean was zero in both baseline and cognitive phase; see Table 3). Youth 2’s DRA phase results showed some change. In order for him to achieve his initial criterion level, he had to make two positive statements. Once that objective was obtained, he was moved to the next criterion level and was required to make 3 positive statements in order to obtain his reward of free time. During baseline and the cognitive intervention phase, he made no positive statements; however, during the DRA phase, he met his objectives 63.6% of the time. When visually analysed, his positive interactions during DRA showed an increasing trend (Appendix J). As seen in Table 3, Youth 2 had a mean of 1.73 positive statements during the DRA phase.

As shown in the completed cognitive sheet in Appendix G, during the cognitive phase, Youth 3 indicated that he believed that changing how he interacted with people would have an immediate and positive effect on his life. Immediately following the implementation of the cognitive intervention phase, Youth 3 made five positive statements as can be seen in the bottom graph on Figure 1. In the following observation days, he returned to baseline levels, resulting in an overall mean of 2.67 for that phase of intervention. See Table 3. In the DRA phase, the initial criterion level for Youth 3 was set at three positive verbalizations, which he achieved. His second criterion level was set at four positive verbalizations. He achieved that level as well and moved to the next level of five positive verbalizations which he attained. During the DRA phase, there was only one day Youth 3 did not meet his objective, and therefore, he was successful 91.7% of the time. As shown in Appendix J, his trend was increasing throughout the DRA phase of the intervention. During the DRA phase, his positive verbalizations had a mean of 3.75.

Percentage of non-overlapping data (PND) was calculated for each youth during each phase; this was chosen in order to most conservatively interpret the effect of each intervention. During the cognitive phase, the PND was not significant, being 0.00% for Youths 1 and 2, and 33.33% for Youth 3. During the DRA phase, however, the PND was calculated at 90.91% for Youth 2, and 66.67% for Youth 3. The percentage of non-overlapping data for both subjects in the DRA phase was therefore 78.62%, and subsequently showed the intervention to be successful.

Negative Verbalizations.

When observations were conducted during the cognitive phase, there was a change from baseline for Youth 1; as shown in Figure 2, his negative verbalizations were reduced from a mean of 4.33 at baseline to a mean of zero. Please see Table 4 for summary statistics for this youth. Youth 1 did not attend the program enough to participate in phase two of the intervention.
Figure 2: Frequency of Negative Verbal Interactions
As can be seen in Figure 2, immediately following the implementation of the cognitive phase there was a decrease in Youth 2’s negative verbalizations from a mean of 1.67 at baseline to a mean of 0.33. (See Table 4 for summary statistics.) Figure 2 also shows that, during the DRA phase, Youth 2’s negative verbalizations increased to a mean of 1.80, close to baseline levels.

A shown on the lowest part of Figure 2, Youth 3 made only one negative verbalization during both phases of intervention. This data is summarized in Table 4.

For negative verbalizations, the percentage of data that exceeds the median (PEM) was calculated. PEM was chosen because the data points during baseline were at or near zero levels. Youth 1’s PEM was 100%, as he made no negative statements during the cognitive phase. He did not participate during the DRA phase. Youth 2’s PEM was 66.67% during the cognitive phase but decreased to 36.36% during the DRA phase. Youth 3 had no negative verbalizations at baseline; therefore, his PEM was 0.00% during each intervention phase. However, when the data from the two youth who did have negative verbalizations (Youth 1 and Youth 2) was examined, it is clear that the cognitive intervention phase was successful in reducing negative verbalizations with a combined PEM of 83.33%. The DRA phase was not successful overall with a combined PEM of 17.39% for the two youth who took part (Youth 2 and Youth 3)—or a PEM of 36.36% for the youth who took part and had negative verbalizations at baseline (Youth 2).

Summary

Overall there were some positive effects from the interventions; the cognitive phase seemed to have an effect on the negative verbalizations, as they decreased from baseline levels in all but Youth 3 (who did not have any negative verbalizations at baseline). The cognitive phase did not have an effect on the positive verbalizations, as they stayed the same. Conversely, for the youth who did participate in the DRA phase,
the intervention was successful at improving their positive interactions but had no effect on reducing their negative ones.
Chapter V: Discussion

Summary of Results

The results of this study suggested that under some circumstances the use of a cognitive intervention on positive language use, combined with the differential reinforcement of alternate behaviours (DRA), can be useful in decreasing the amount of inappropriate verbalizations or increasing the amount of positive language within a school program. Cognitive interventions were successful at decreasing negative verbalizations in those youth who had initial negative verbalizations at baseline (Youths 1 & 2); it was not successful in making significant changes in increasing positive verbalizations. Differential reinforcement of alternate behaviour (positive verbalizations) was effective at increasing positive verbalizations for those who participated in that phase (Youth 2 & Youth 3), but it was not successful in decreasing negative verbalizations over baseline rates.

Strengths

There were some strengths within the study. To begin, each youth was familiar with the format because it was modeled after similar worksheets that the youth would complete each week in the program. This allowed the youth to complete something with which they were already familiar, so less instruction was required.

In addition to this, the willingness of the youth to participate was extremely beneficial, as each youth gave his consent readily and without hesitation. Youth 3 enjoyed the DRA phase of the intervention and would ask each day if he would be able to participate.

This study successfully supports the literature presented by LeGrey et al. (2010) who found that using a DRA intervention can lead to an increase in positive verbalizations with typically developing youth. It similarly supports the findings of Nitowski (2009) who used CBT to treat aggressive behaviours in youth; by using a cognitive intervention the present study was successful at reducing the negative verbalizations of the youth who took part. Finally, the study by Burack et al. (2006) showed that youth who engage in aggressive behaviours frequently have fewer positive social interactions than their non-aggressive peers. During the cognitive phase, each youth indicated that they felt that if they were more positive in their interactions that their experiences would be better. In other words, their desire for change was in part motivated by a lack of friends or positive regard within their lives.

Limitations

There were a number of limitations within the study. The first and most significant was that each youth was in the program as a result of either a suspension or expulsion from his school, which resulted in either their not wanting to attend the program or being absent many days. This meant that the youth often saw the classroom as a negative place where the staff were unduly harsh and would sometimes act out.
Additionally, the study included Youth 3 who took part at the behest of classroom staff, despite an absence of negative verbalizations. This brings into question the necessity for intervention in his case; while staff in the classroom wanted his positive verbalizations increased, there was no need to decrease his negative interactions. Youth 3’s data may have subsequently been atypical of a regular youth within the program.

Also, Youth 2 had significant developmental delays, which impacted his ability to participate in the program. While he was eager to participate, it was unclear whether he truly understood the concepts presented to him. His results in the cognitive and DRA phases lean toward him having an understanding of the concepts, but perhaps an unwillingness to participate actively in the intervention on a regular basis. A more versatile intervention would be to be able to provide the psychoeducation in a way that would better be able to facilitate his learning. In addition to the developmental delays, Youth 2 had also been diagnosed with Oppositional Defiant Disorder (ODD) which had an impact on the way he interacted with staff in the classroom on a regular basis. Once again, a more versatile intervention with education for the mediator on how to work with youth with ODD would have been beneficial and may have brought about better results.

Another limitation was the lack of staff support. While the classroom staff verbally indicated their support for the study, the intervention was not a priority. Staff would often allow the youth to take unscheduled breaks if they were acting out or refusing to do their work, without having participated in the intervention for the day. This resulted in satiation, and may have had a negative effect on the results.

There were also some limitations to the design of the study. Initially, the definition for inappropriate verbalizations was too narrow and needed to be expanded to accommodate Youth 3’s negative verbalizations. While negative verbalizations were being recorded, comments of a sexual nature were not, which was the type that Youth 3 made most frequently. It was decided that he would benefit from the change in definition; however, all data taken up to that point did not reflect those comments. The second limitation in the design was that it was not flexible enough to accommodate those youth who did not attend the program frequently, and as a result, none of the youth actually completed the full intervention, which resulted in a lack of maintenance and generalization training. There was also no follow-up.

A final limitation could be seen in the design of the study. Given that the cognitive phase was presented first each time and was followed by the DRA phase, it is impossible to tell if the two phases interacted or had an effect on each other.
Multilevel Challenges to the Study

Client level.

The client’s willingness to attend program was sometimes an issue within this study; Youth 1 was willing to participate in the intervention but did not attend the program past the cognitive phase of the intervention. Youth 2 would frequently indicate his desire to participate and then, once intervention was begun, refuse to try to meet any of his goals although he did do well in the DRA phase. While Youth 3 was eager to participate in the intervention on a daily basis, he would only do so with two individuals in the classroom. Should either of those people not be available, Youth 3 was not interested in the intervention. A way to address this issue would be to have more salient reinforcers that the youth would be willing to work for.

Program level.

The two agency staff members were new to their positions and, as a result, were still learning how to effectively run the classroom. This, combined with a large number of youth, allowed for very little time for them to put into learning about the intervention. This resulted in them often using free time as a reward for other behaviours which reduced the saliency of it during intervention. In addition to this, the expectations placed on the researcher were very high outside the intervention itself; the staff often asked for other jobs and activities to be completed during the time scheduled for the intervention or they would remove the youth during his time. This problem could have been addressed by scheduled, regular meetings to discuss the time and place that the sessions would occur. Also, while it would not have been appropriate for the design of the intervention, having the DRA phase sessions take place at a regular time could have created a routine that would make it easier for staff to remember that it was occurring.

Organizational level.

Because the organization was large, many of the staff that worked there were unaware of the intervention taking place. Many of the other staff outside the classroom have extensive training and knowledge of the youth and their particular challenges, and their input could have had a positive impact on the intervention.

Societal level.

Youth who have been expelled or suspended from school are often stigmatized as ‘bad kids’ or are thought of by society as people who will never contribute to society. In other words, much of society gives up on them before seeing what effect an intervention can have. They do not see that these youth are caring individuals who are aware that they are stigmatized, but lack the skills to change their lives. This is often compounded by the fact that they come from low-income families, and may have a parent in jail, or on welfare. By improving their positive interactions with people outside their immediate social circles, it could positively impact the way that the youth are seen within the community.
Contribution to the Field of Behavioural Psychology

Aggression can be a significant problem within behaviour classrooms, and can lead to many negative consequences (Huesmann et al., 2011). It is no wonder, then, that many interventions have attempted to deal with aggressive behaviour in the classroom (Wilson et al., 2006). Most studies show a level of success when targeting aggressive behaviour; this study was also successful in using a both a cognitive and a DRA intervention in a classroom-type setting with typically developing youth, and successfully extended the existing research. Additionally, the intervention showed that when DRA is used with a typically developing youth, it can yield positive results. DRA can also be useful even when the intervention is not implemented consistently; this further supports the ideal that behavioural psychologists strive to uphold, which is to be applicable within real-world settings.

While there is much support for cognitive behavioural therapy (CBT) as a treatment for aggressive behaviour, this study showed that even a brief cognitive intervention could be useful in decreasing a negative behaviour. This further supports the utility that CBT has already been shown to have with aggressive youth (Nitowski et al., 2009). This study also suggests that CBT can be combined with a DRA intervention to yield positive results that can benefit both the youth and those that interact with him.

Recommendations for Future Research

If a larger sample size could be obtained, changing the order in which the interventions were implemented could be useful in determining which intervention benefitted the youth in each way. Additionally, having a control group could also help to show whether or not the intervention was successful, or if the changes in verbalizations were because of other things going on in the youth’s environment. Trying to use this intervention with female youth could also have a benefit, as this intervention only contained male youth. Using a reinforcer that was unique to the study could also have a positive effect on the intervention; when the effects of satiation are removed, it is possible that the youth would respond more positively. Because many of the gains made during the cognitive intervention were not maintained, the effects of a longer cognitive phase could result in better maintenance.

Because much of the intervention could not be completed due to non-attendance or behavioural problems, a study of how to make an intervention optimally successful for those who could not participate regularly could benefit both staff and youth. Additionally, both youth and staff could benefit from research on how to maintain any gains made in intervention. Finally, this study was successful at using DRA to increase positive verbalizations with a typically developing population. This is a particularly under-researched subject; more studies that use this type of intervention within this population could be useful for exploring its utility overall.
References


TITLE: Increasing Positive Verbal Interactions Among Students and Staff in a School and Non-Academic Program

STUDENT: Sarah Reid

COLLEGE SUPERVISOR: Susan Meyers, Ph.D., C.Psych.

Invitation
I am a student in my 4th year in the Behavioural Psychology at St. Lawrence College and I am currently on placement at Youth Diversion. As a part of this placement, I am completing a special project called an applied thesis and am asking for your assistance to complete this project. The information in this form is intended to help you understand my project so that you can decide whether or not you want to participate. Please read the information below carefully and ask me or Sarah Lacombe (my agency supervisor) all the questions you might have before deciding whether or not to participate.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of the study is to evaluate the effects of a worksheet about positive and negative language and a reward based-program with students on the appropriate use of words and language in the classroom.

WHAT WILL YOU NEED TO DO IF YOU TAKE PART?

Taking part in the program will require a small amount of work; you will be required to complete a cognitive worksheet which should take no more than 30 minutes. You will also be required to be more aware of how you talk in class. You will also have the option to earn a reward two minutes of free time for of free time for using positive language in
the classroom. That reward can be used in any SNAP-approved activity that you would enjoy, like extra gym time or an extra round of cards with staff.

**WHAT ARE THE POTENTIAL BENEFITS TO TAKING PART?**

The first potential benefit of participating in this program is that you will be able to use free time for a preferred activity in the program. The next is that you may have an increase in positive time spent with staff and other youth in the SNAP classroom. By improving interactions with the people in the room, you’ll have a better chance to succeed in a more open and supportive environment. Also, if the effects of this program reach further than just the classroom, it could potentially improve the way you interact with people in other settings.

**WHAT ARE THE POTENTIAL BENEFITS TO OTHERS OF TAKING PART?**

A primary benefit to others in your taking part is a chance to contribute to an overall positive atmosphere in the classroom. A positive attitude will improve interactions among staff, volunteers and placement students within the agency. By doing this, it will help to improve the sense of calm and overall cheerfulness in the classroom.

**WHAT ARE THE POSSIBLE DISADVANTAGES AND RISKS OF TAKING PART?**

As with any study there are always some risks. For example, you could get frustrated when other students earn a reward if you don’t. You also have to do a cognitive worksheet, which you may or may not enjoy, as they do take some effort to complete.

**WHAT HAPPENS IF SOMETHING GOES WRONG?**

If you become upset or distressed while doing the program, you will be able to talk to a staff member or volunteer; as usual in the classroom, we will make sure that you have all the support you need.

**WILL MY TAKING PART IN THIS PROJECT BE KEPT PRIVATE?**

Absolutely. We will make every attempt to keep any information that identifies you strictly confidential unless required by law. Every effort will be made to protect all information and data that is collected about you. There will be no names on the information gathered for the study, except for this consent form. You will be given a
code number and no names or identifying information (such as tattoos, hair colour or ethnicity) will be used for the study. Data sheets will be stored at the agency, and the data will be stored on a password protected laptop that will, when not in use, be kept in a locked filing cabinet. Your original consent form will be stored in the Behavioural Psychology offices at St. Lawrence College for seven years, after which it will be destroyed. A copy of your consent will be kept in the agency file and will be destroyed one year after you leave the agency.

**Do I have to take part?**

It is up to you to decide whether or not you take part. If you do decide to take part, you will be asked to sign this consent form. If you do decide to take part, you are still free to withdraw at any time, without giving any reason, and without causing any problems for you – in any way – in the classroom.

**Contact for further information.**

This project has been approved by the Research Ethics Board at St. Lawrence College. The project has been developed under the supervision of Susan Meyers, Ph.D., my supervisor from St. Lawrence College. I really appreciate your cooperation. If you have any additional questions or concerns, feel free to ask me, Sarah Reid at sreid10@student.sl.on.ca, or you can contact my College Supervisor Susan Meyers at 613-329-1046 or smeyers@kos.net. You may also contact the Research Ethics Board at appliedresearch@sl.on.ca.

**Consent**

If you agree to participate in the project, please complete the following form and return it to me as soon as possible. A copy of this signed document will be given to you for your own records. The original copy of your consent will be retained at the agency in your file, and will be destroyed one year after your attendance in the program.
CONSENT

By signing this form, I agree that:

- The study has been explained to me.
- All my questions were answered.
- Possible harm and discomforts and possible benefits (if any) of this study have been explained to me.
- I understand that I have the right not to participate and the right to stop at any time.
- I am free now, and in the future, to ask any questions about the study.
- I have been told that my personal information will be kept confidential.
- I understand that no information that would identify me will be released or printed without asking me first.
- I understand that I will receive a signed copy of this consent form.

I hereby consent to participate.

Participant’s Printed Name: __________________________

Age of Participant:___________

Signature: _______________________________       Date: ________

SLC Student Signature: ___________________       Date: ________

Printed Name: ____________________________
Appendix B
Event Recording Sheet

Instructions: Each time a behaviour occurs, mark it down!

Student #: ________________ Day: ______ Begin: _______ Finish: _______

Behavior: ______________________________________________________________

Context: ___________________________________

Observer/ function in classroom: _________________________________________

<table>
<thead>
<tr>
<th>Inappropriate word</th>
<th>Positive Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: _______________ Rate: _____ per minute

Student: _______________ Date: ______ Time (Start): _______ Time (End): _______
Appendix C
Blank Cognitive Worksheet
Language Skills

"Good communication does not mean that you have to speak in perfectly formed sentences and paragraphs. It isn't about slickness. Simple and clear go a long way."

John Kotter

1. What sort of language do you use during the day, usually?
   a. Only positive (kind, compliments)
   b. Primarily positive
   c. Primarily negative (insults, sarcasm)
   d. Only negative

2. Is there a reason you choose to talk this way?

3. What are the benefits of talking this way? What are the costs of talking this way?

4. Thinking back – when was a time that someone used language that upset or bothered you? What sort of things were they saying?

5. Has there been a time you’ve gotten into trouble for using language inappropriately? What was the situation? What was the outcome?

6. When was a time you’ve used language to benefit you? What was the situation? What was the outcome?

7. How do people react to you when you say nice things? Mean things?
8. How do you want people to see and think of you? How do you think the language that you use affects that?

9. Do you think that your life in the classroom could be different by saying more positive things?

10. How do you think people (like staff or volunteers) would treat you if you used more positive language? Why do you think this?

11. Overall, would there be a benefit to changing the way you talk to people? Why or why not? What would the largest benefit be?
Appendix D
Raw Data from the FACTS

Raw Data from the FACTS

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Routine</th>
<th>Predictors</th>
<th>Antecedents</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative verbalizations</td>
<td></td>
<td>Transition time, instructional time</td>
<td>Problems with peers, problems at home, court dates, undesirable tasks</td>
<td>Frustration, anxiety</td>
</tr>
<tr>
<td>Youth 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggressive and negative behaviour, talking out of turn</td>
<td>Instructional time, undesired</td>
<td>Trouble at home, lack of medication, spent the weekend with mom</td>
<td>Interaction with staff</td>
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35
Appendix E
FAO Data for Incidents of Positive and Negative Verbalizations

**FAO Raw Data for Incidents of Positive Verbalizations**

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**FAO for Incidents of Negative Verbalizations**

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## Appendix F

*Raw Data for Positive and Negative Interactions During Baseline*

### Positive Verbal Interactions During Baseline

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### Negative Verbal Interactions During Baseline

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Appendix G
Completed Worksheets for the Cognitive Phase

Completed Worksheets for Cognitive Phase

Language Skills: Youth 1

"Good communication does not mean that you have to speak in perfectly formed sentences and paragraphs. It isn't about slickness. Simple and clear go a long way."

John Kotter

1. What sort of language do you use during the day, usually?
   a. Only positive (kind, compliments)
   b. Primarily positive
   c. Primarily negative (insults, sarcasm)
   d. Only negative

2. Is there a reason you choose to talk this way?
   *No, it’s the way I am.*

3. What are the benefits of talking this way? What are the costs of talking this way?
   - *No real benefits: it helps me to fit in with my friends.*
   - *Yeah, it’s caused fights*

4. Thinking back – when was a time that someone used language that upset or bothered you? What sort of things were they saying?
   - *There never was a time*
   - *Someone was saying things that wasn’t true – called me a goof.*

5. Has there been a time you’ve gotten into trouble for using language inappropriately? What was the situation? What was the outcome?
   - *Kicked out of school, of program*
   - *Grade 2 (or 1) my teacher pissed me off so I called her a fucking bitch, and was suspended for three weeks*

6. When was a time you’ve used language to benefit you? What was the situation? What was the outcome?
   - *All the time – I got stuff I wanted like modern warfare 3*
   - *Saying stuff like ‘mom, you buy my sister everything’ etc.*

7. How do people react to you when you say nice things? Mean things?
   - *They don’t (nice things) – they ignore me (nice things)*
- They react however they do (about mean things), but they usually get mad.

8. How do you want people to see and think of you? How do you think the language that you use affects that?
   - differently than they do now – I want them to see me as not like I used to be
   - oh, it affects it a lot. It just does.

9. Do you think that your life in the classroom could be different by saying more positive things?
   - yeah, I could actually get back into school

10. How do you think people (like staff or volunteers) would treat you if you used more positive language? Why do you think this?
    - a lot different: better
      - because you have to give respect to get it
    - if you’re not nice to people they’re not nice to you

11. Overall, would there be a benefit to changing the way you talk to people? Why or why not? What would the largest benefit be?
    - Yes. Because then I’d get more respect. They wouldn’t hate me so much.
     - I’ll get stuff faster if I don’t harass them.
     - respect.

Language Skills

"Good communication does not mean that you have to speak in perfectly formed sentences and paragraphs. It isn't about slickness. Simple and clear go a long way."

John Kotter

1. What sort of language do you use during the day, usually?
   a. Only positive (kind, compliments)
   - b. Primarily positive
   c. Primarily negative (insults, sarcasm)
   d. Only negative

2. Is there a reason you choose to talk this way?
   Just happens.

3. What are the benefits of talking this way? What are the costs of talking this way?
   I get video games

4. Thinking back – when was a time that someone used language that upset or bothered you?
What sort of things were they saying?
*No good low life. It pissed me off.*

5. Has there been a time you’ve gotten into trouble for using language inappropriately? What was the situation? What was the outcome?
- Yes. I told the teacher to go fuck himself.
- got kicked out of class
6. When was a time you’ve used language to benefit you? What was the situation? What was the outcome?
- *tell the truth* (it was apparent that Y4 didn’t understand this question, and despite attempts by the researcher to explain it, couldn’t.)

7. How do people react to you when you say nice things? Mean things?
*They react nicely back.*
*They act mean back.*

8. How do you want people to see and think of you? How do you think the language that you use affects that?
- *I want people to see me as a nice guy, and think of me as a nice guy.*
- *it does, don’t know how the way you sound like.*

9. Do you think that your life in the classroom could be different by saying more positive things?
*Yeah.*

10. How do you think people (like staff or volunteers) would treat you if you used more positive language? Why do you think this?
- *nicer*
- *just because*

11. Overall, would there be a benefit to changing the way you talk to people? Why or why not?
What would the largest benefit be?
*Yeah, because people would think I’m nicer*
*I’d have more friends.*

**Language Skills**

Youth 3

"Good communication does not mean that you have to speak in perfectly formed sentences and paragraphs. It isn’t about slickness. Simple and clear go a long way."

*John Kotter*

1. What sort of language do you use during the day, usually?
   a. Only positive (kind, compliments)

   **b. Primarily positive**
c. Primarily negative (insults, sarcasm)

d. Only negative

2. Is there a reason you choose to talk this way?
   - I got in with the wrong people and started talking that way.

3. What are the benefits of talking this way? What are the costs of talking this way?
   - no benefits
   - get sent to the office, fights, argue

4. Thinking back – when was a time that someone used language that upset or bothered you? What sort of things were they saying?
   Yes. Little bitch. I don’t like it, it made me feel not good.

5. Has there been a time you’ve gotten into trouble for using language inappropriately? What was the situation? What was the outcome?
   Yes. In class, mouthing off. I got in trouble with the teacher and got sent to the office.

6. When was a time you’ve used language to benefit you? What was the situation? What was the outcome?
   To get me out of trouble. At school. I explained myself and got out of a suspension.

7. How do people react to you when you say nice things? Mean things?
   Good things - happy
   mean things – unhappy, disappointed.

8. How do you want people to see and think of you? How do you think the language that you use affects that?
   - not the way they do now. Like I wasn’t a badass. Like I was nice and trustworthy and not intimidating.
   - yeah, it does. Swearing puts a bad image on me.

9. Do you think that your life in the classroom could be different by saying more positive things?
   Probably. I probably wouldn’t have you guys looking over my shoulder every two minutes

10. How do you think people (like staff or volunteers) would treat you if you used more positive language? Why do you think this?
    Better, I wouldn’t be acting bad – fewer conflicts.

11. Overall, would there be a benefit to changing the way you talk to people? Why or why not? What would the largest benefit be?
    Yeah. I’d have more friends – I don’t have many friends.
## Appendix H
Raw Intervention Data on Positive and Negative Verbalizations

### Raw Intervention Data on Positive Verbalizations

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Appendix I

Graph of Incidents of Positive Language, with Trendlines

Graph of Incidents of Positive Language, with trendlines

* indicates criterion level
Appendix J
Graph of Incidents of Negative Language, with Trendlines

Incidents of Negative Language, with trendlines

Youth 1

Youth 2

Youth 3