

Fall 10-23-2009

## Behavioral and academic effects of Skillstreaming the Adolescent for at-risk middle school students

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### Recommended Citation

Evans, Amy and Stefanou, Candice, "Behavioral and academic effects of Skillstreaming the Adolescent for at-risk middle school students" (2009). *NERA Conference Proceedings 2009*. 25.

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Behavioral and academic effects of *Skillstreaming the Adolescent* for at-risk middle school  
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Keywords: social skills training, academic progress, at-risk youth

## Abstract

Research links social skills deficits with academic failure. This study investigated whether social skills training leads to improved social skills and academic achievement. Six middle school students, considered behaviorally at-risk, participated in a six-week social skills training intervention using *Skillstreaming the Adolescent* (Goldstein, McGinnis, Sprafkin, Gershaw, & Klein, 1997). Teacher and self-report measures and grades were collected at pre-intervention, mid, and end of intervention. Results showed significant differences in teacher ratings of the students' cooperation but no achievement improvements. This study provides evidence that brief, targeted interventions may have positive effects on some aspects of social skills for at-risk students.

## Social skills and academic progress among at-risk youth:

### Behavioral and academic effects of *Skillstreaming the Adolescent*

Quite a bit of empirical evidence links inadequate social skills development with poor academic achievement, school failure, delinquency, and negative life outcomes (e.g., Feldhusen, Thurston, & Benning, 1970; McEvoy & Welker, 2000; Kavale & Forness, 1996; Merrell, 1993). Conversely, adequate prosocial development and social competence correlates with strong peer relationships (Asher & Taylor, 1981) and academic achievement (Walker & Hops, 1976). Children begin to learn primary social skills very early in life and continue to learn more complex skills as they age. Unfortunately, some children fail to develop or to perform social skills appropriately. This can happen for a variety of reasons. Sometimes children fail to develop appropriate social behavior because of inadequate opportunities to observe and model prosocial behavior; sometimes because of a concurrent emotional or behavioral problem, such as anxiety or impulsivity, which competes with the desired prosocial behavior. However, the end result is that not having adequate social skills places a child at-risk for several negative life outcomes, not the least of which is school failure and eventual dropping out.

Social skills training is a popular intervention for children and adolescents. The studies examining the effects of social skills training with this population show varying results. The results of meta-analyses on social skills training are fairly consistent in their findings that post-treatment mean effect size show acceptable levels of improvement but unsustainable gains at follow-up (e.g., Beelmann, Pfingsten, & Losel, 1994; and Ang & Hughes, 2001; Gresham, Cook, Crews, & Kern, 2004). Several factors may be important in

understanding the effectiveness of social skills training interventions since it is not uncommon to see studies where effect sizes vary between moderate to high while others report moderate to low effect sizes.

Population characteristics have received attention in narrative reviews (Gresham, Sugai, & Horner, 2001; Maag, 2006). Many participants in social skills training studies are characterized as having behavioral and emotional disturbances; however, as Maag pointed out, behavioral and emotional disturbance is an umbrella term and includes varying degrees of problem behavior. While many of the participants in these studies meet state or federal special education criteria for emotional disturbance or have a clinical diagnosis such as, oppositional-defiant disorder, there are still many participants who have no exceptionality or clinical diagnosis and are typically children or adolescents in the juvenile justice system or are considered "at-risk" for behavioral or emotional problems by significant others (e.g. teachers, parents) (Maag).

Gresham et al. (2001) analyzed effect sizes between meta-analyses that used studies with children and adolescents who met state or federal guidelines for special education under emotional disturbance or learning disabled and studies with children and adolescents who were not in special education but were considered to have externalizing, internalizing, aggressive, or withdrawn characteristics. Effect sizes for 88 studies with children in special education were small (Gresham et al.). In fact, Gresham et al. claimed that one in five of the studies showed that the control group improved more than the experimental group. Gresham et al. and McIntosh, Vaughn, & Zaragoza (1991) concluded that children in special education are particularly resistant to social skills training and that more research needs to be done with

this population to determine if more intense interventions (e.g. longer duration of social skills training) produce better results.

Whether the treatment strategies are matched to the skill deficits demonstrated by participants is another consideration (Gresham et al., 2001; Gresham et al., 2004). Children and adolescents with social skills deficits may be experiencing acquisition, performance, or fluency deficits (Gresham et al. 2001). Intervention strategies used in social skills training (e.g. modeling, coaching, eliminating competing behaviors, enhancing performance, etc.) may need to match the participants' skill deficits to be effective (Gresham et al., 2001). Most studies using social skills training do not attempt to identify the type of social skills deficits the participants demonstrate or if the target skills actually need to be taught, resulting in less effective treatment (Forness & Kavale, 1996; Gresham et al., 2001). Studies that do match skill deficits to training procedures show larger effects than studies that do not (McIntosh et al., 1991).

In summary, social skills training is a moderately effective intervention at post-treatment for children and adolescents 3 to 18 years-old (Ang & Hughes, 2001; Beelmann et al., 1994; Gresham et al., 2004). At this point, the social skills training literature is inconclusive for whom the intervention is most effective; although the literature does show that children and adolescents meeting special education criteria for emotional disturbance and learning disabilities demonstrate the least amount of change (Gresham et al., 2001).

Children and adolescents who fail to develop appropriate social skills often have poor outcomes, one of which is school failure. Rutherford, DuPaul, and Jitendra (2008) suggest that actually academic achievement might have more influence over social skills than the other way around, at least for children with ADHD. However, for those children who do not

have a medical or educational diagnosis, having and using prosocial skills in the classroom may be the difference between school persistence and school failure. The deep connection between the ability to interact in prosocial ways and academic achievement is documented in children as young as those in kindergarten. Contrary to what Rutherford et al. suggest, Peko and Reed-Victor (2007) provide evidence suggesting that learning-related social skills act in support of eventual academic success among the younger age groups.

The emphasis on universal screening for children who are demonstrating academic and behavioral under-achievement, as required by the Response to Intervention (RTI) model currently in place in American public schools, creates an atmosphere that encourages addressing the needs of children who are not already identified for more intense intervention academically or behaviorally but who would most likely benefit from increased attention. Response to Intervention methods identify those children early on who are not making grade-level progress academically and behaviorally and put into place empirically validated interventions to help these children make gains. For this reason, it is important to understand ways to intervene when students demonstrate social skills deficits. Students who lack prosocial skills, or learning-related social skills as Peko and Reed-Victor (2007) refer to them, may demonstrate academic difficulties because they do not have or do not perform basic skills such as listening, asking a question, or following instructions. If students acquire and perform prosocial skills like these through social skills training, then perhaps they will experience better academic outcomes as well. This hypothesis forms the basis for the current study.

To test this hypothesis, a group of students were identified by their teachers and guidance counselor as at-risk based on both academic difficulties and behavioral concerns.

At-risk students were targeted for two reasons. Interventions are most effective when done early, either when the child is very young or before the problem behaviors become more severe. Further, with the prominence of RtI and its reliance on universal screening and progress monitoring of students, studies that show the effects of interventions on less impaired children and youth will provide critical information for those who work with children who are under-achieving.

## Method

### Participants and Setting

Participants were six 13-year old students from a rural, public school district in the northeast United States and included four males and two females. Four of the participants were in 7<sup>th</sup> grade while two were in 8<sup>th</sup> grade. All participants were Caucasian and came from a subject population which was 98.2% Caucasian.

The participants were chosen as a result of referrals from the Student Support Team (SST) and the middle-level guidance counselor during the second month of the academic school year. Inclusion criteria were that the adolescent had been referred to the SST, was struggling academically, and demonstrated a need to learn prosocial skills such as listening, asking for help, and following directions. Exclusion criteria were the presence of the following diagnoses and conditions: Autism Spectrum Disorders; Mental Retardation; Oppositional Defiant/ Conduct Disorder; Attention Deficit Hyperactivity Disorder; history of juvenile delinquency; or violent/threatening behavior. These exclusion criteria were used to limit the confounding variables when measuring academic performance and the construct of social skills.

### Intervention



*Skillstreaming the Adolescent* (Goldstein, McGinnis, Sprafkin, Gershaw, & Klein, 1997) was used for the intervention. This intervention originated from Bandura's (1986) social learning theory and uses many empirically based strategies for improving prosocial behavior (e.g. modeling, coaching, behavioral rehearsal, and reinforcement). Goldstein et al. cite several studies that support the strategies used in the program. However, a review of those studies revealed that they do not specifically use *Skillstreaming the Adolescent*, but instead use strategies that are within the *Skillstreaming the Adolescent* program (e.g. modeling, coaching, behavioral rehearsal, etc.). Those studies that did use the *Skillstreaming the Adolescent* program report findings that generally validate the efficacy of the program. Though there are different population characteristics in each study, Seferian (1999), Reed (1994), Grizenko, Zappitelli, Langevin, Hrychoko, El-Messidi, Kaminester, Pawliuk, & Stepanian (2000), and Leonardi, Roberts, and Wasoka (2001) demonstrate that *Skillstreaming the Adolescent* is an effective intervention for achieving desired results.

#### Measures

*Social skills.* Social skills were measured using the *Social Skills Rating System* ([SSRS] Gresham & Elliot, 1990) Teacher and Student forms. The SSRS is a standardized, norm-referenced behavior rating system used to measure social competence and adaptive behavior. The secondary forms were used for this thesis as they are standardized for students in grades 7-12. The six participants and their homeroom teachers completed the forms three times during the investigation to determine baseline, mid-intervention, and post-intervention behavior.

The SSRS-T (e.g. Teacher) secondary form assesses three domains: Social Skills, Problem Behaviors, and Academic Competence. The Social Skills scale is broken into three

subscales: Cooperation, Assertion, and Self-Control. The Problem Behaviors scale is broken into two subscales: Externalizing and Internalizing, while the Academic Competence scale contains no subscales. Teachers completing the form are asked to measure the frequency and importance of the student's social skills in school. The total internal consistency reliability as reported in the test manual for each scale is adequate, ranging from .86 to .95. Test-retest reliability for a four week span is also adequate with coefficients ranging from .84 to .93.

The SSRS-S (Student) secondary form only contains the Social Skills scale. The Social Skills domain is broken into four subscales: Cooperation, Assertion, Empathy, and Self-Control. Like the SSRS-T, students completing the form are asked to measure the frequency and importance of their social behaviors. The total internal consistency and test-retest reliability as reported in the manual are adequate with a coefficient alpha reliability of .83, and a test-retest reliability coefficient of .68.

*Academic achievement.* Academic achievement was measured by the participants' grade percentage in math and English. Participants' grade percentages were collected at the beginning and end of the intervention period.

## Procedures

The group met one time per week for six weeks, with meetings lasting 30 to 60 minutes each and occurring during the participants' elective courses. Training sessions were facilitated by the primary investigator. During each session, the primary investigator facilitated a social skills training lesson using procedures from *Skillstreaming the Adolescent* (Goldstein et al., 1997).

As recommended by the program, the primary investigator and the participants negotiated the skill selection. The primary investigator created a list of skills identified as

highly important and deficient by the SSRS-T, and then had the participants' rate the skills on the list based on the skills they would like to learn first. Because there were more than six skills identified, the primary investigator chose the final skills to be taught based on skills essential for classroom functioning and the participants' needs. A different skill was focused on each week. Listening (session #1), asking for help (session #2), using self-control (session #3), following instructions (session #4), standing up for your rights (session #5), and dealing with accusation (session #6) were the skills identified and taught during the six sessions. These skills are measured by the subscales of cooperation (listening, using self-control, and following instructions—weeks 1, 3, and 4), assertion (asking for help and standing up for your rights—weeks 2 and 5), and self-control (using self-control and dealing with accusation—weeks 3 and 6).

#### Analyses

Nonparametric Friedman tests, with follow-up Wilcoxon Signed Rank tests, were conducted on teacher ratings of social skills. Subscale (cooperation, assertiveness, self-control, externalizing behaviors, and internalizing behaviors) and domain (social skills, problem behavior, and academic competence) scores were analyzed separately. Wilcoxon Signed Rank test was conducted to measure change in grades from pre to post-intervention.

#### Results and Discussion

Nonparametric Friedman tests were calculated examining the effect of time on cooperation, assertiveness, self-control, externalizing behaviors, and internalizing behaviors scores provided by the teacher-version of the SSRS. A significant effect was found for cooperation (Friedman's test  $\chi^2(2) = 6.40, p = .041$ ). Follow-up tests indicated that the students were significantly more cooperative between mid-intervention ( $M = 13.83, SD =$

3.1) and end of intervention (M = 15.00, SD = 3.3) and between baseline ( M = 13.5, SD = 3.15) and end of intervention (M = 15, SD = 3.3). No significant effects significant effects were found for assertiveness (Friedman's test  $\chi^2(2) = .818, p = .664$ ), self-control (Friedman's test  $\chi^2(2) = .875, p = .646$ ), externalizing behaviors (Friedman's test  $\chi^2(2) = .182, p = .913$ ), or internalizing behaviors (Friedman's test  $\chi^2(2) = .444, p = .801$ ). Means and standard deviations for subscale scores are reported in Table 1.

No significant effects were found for domain scores of Social Skills (Friedman's test  $\chi^2(2) = 2.67, p = .264$ ), Problem Behaviors (Friedman's test  $\chi^2(2) = 2.55, p = .280$ ), or Academic Competence (Friedman's test  $\chi^2(2) = 1.13, p = .568$ ) as measured by the teacher-version of the SSRS. Means and standard deviations for subscale scores for teacher ratings are found in Table 2. No significant effects were found for student self-ratings (Friedman's test  $\chi^2(2) = 3.00, p = .223$ ). Means and standard deviations for subscale scores for student ratings are found in Table 3.

Wilcoxon Signed Rank test was conducted on academic achievement as measured by student grade average from baseline to end of intervention. No significant effect was found (Wilcoxon test  $z(1) = -.736, p = .462$ ). Means and standard deviations for grades are found in

Table 4.

Table 1

Social Skills Rating System- Teacher Form Subscale Raw Scores

|                                | <u>Baseline</u> |           | <u>Mid-Point</u> |           | <u>End-Point</u> |           |
|--------------------------------|-----------------|-----------|------------------|-----------|------------------|-----------|
|                                | <i>M</i>        | <i>SD</i> | <i>M</i>         | <i>SD</i> | <i>M</i>         | <i>SD</i> |
| <i>Cooperation*</i>            | 13.50           | 3.15      | 13.83            | 3.31      | 15.00            | 3.29      |
| <i>Assertiveness</i>           | 9.83            | 3.66      | 10.67            | 4.80      | 11.83            | 4.26      |
| <i>Self-Control</i>            | 12.33           | 1.51      | 13.00            | 2.45      | 13.00            | 3.63      |
| <i>Externalizing Behaviors</i> | 1.33            | 2.42      | 1.00             | 1.55      | 1.17             | 1.47      |
| <i>Internalizing Behaviors</i> | 3.17            | 0.98      | 2.83             | 2.32      | 2.33             | 1.03      |

\*  $p < .05$

Table 2

Social Skills Rating System- Teacher Form Standard Scores (mean = 100; standard deviation = 15)

|                            | <u>Baseline</u> |           | <u>Mid-Point</u> |           | <u>End-Point</u> |           |
|----------------------------|-----------------|-----------|------------------|-----------|------------------|-----------|
|                            | <i>M</i>        | <i>SD</i> | <i>M</i>         | <i>SD</i> | <i>M</i>         | <i>SD</i> |
| <i>Social Skills</i>       | 91.33           | 4.80      | 94.17            | 8.95      | 99.17            | 15.46     |
| <i>Problem Behaviors</i>   | 100.00          | 5.48      | 95.33            | 10.52     | 95.00            | 7.90      |
| <i>Academic Competence</i> | 91.83           | 7.36      | 92.50            | 3.02      | 89.50            | 5.32      |

Table 3

Social Skills Rating System-Student Form Standard Scores (mean = 100, standard deviation = 15)

|                      | <u>Baseline</u> |           | <u>Mid-Point</u> |           | <u>End-Point</u> |           |
|----------------------|-----------------|-----------|------------------|-----------|------------------|-----------|
|                      | <i>M</i>        | <i>SD</i> | <i>M</i>         | <i>SD</i> | <i>M</i>         | <i>SD</i> |
| <i>Social Skills</i> | 90.80           | 12.60     | 101.80           | 9.83      | 105.00           | 12.26     |

Table 4

## Mean Grade Percentages

|               | <u>Baseline</u> |           | <u>End-Point</u> |           |
|---------------|-----------------|-----------|------------------|-----------|
|               | <i>M</i>        | <i>SD</i> | <i>M</i>         | <i>SD</i> |
| <i>Grades</i> | 76.30           | 12.98     | 79.50            | 11.62     |

Efficacy studies of social skills interventions typically rely on behavioral counts demonstrating either greater production of prosocial behaviors or a decrease in inappropriate behaviors. Instead this study used standardized rating forms to determine outcome, a departure from other studies that used criteria such as number of discipline referrals or performance on classroom-wide token economies. This study measured perceptions of change in constructs associated with adaptive social skills. In this respect, this study may be more appropriately considered to be a study of perceptions of social competence. Perhaps one reason why only the aspect of cooperation was significantly and positively impacted by the intervention is that cooperation was the topic of the first, third and fourth training sessions. There were many more opportunities for the youth to practice this skill in a variety of forms and to receive continued feedback on refining the use of the skill. Attention to cooperation came early and was more frequent than the other social skills of assertion and self-control. Another explanation for the singularity of the significance of cooperation is that changing perceptions of others may be more difficult to do than changing behavior itself. How much change must be evident before others perceive and acknowledge that change has occurred?

While this study attempted to teach skills based on participants' specific deficits, the participants ultimately differed in terms of need in each area targeted for intervention. For

example, among the participants in this study one was less assertive than the others and needed to acquire skills such as standing up for your rights; while another lacked self-control and needed to acquire skills to maintain control. Both skills were taught during the intervention, but both were not relevant to all participants. The literature on social skills intervention indicates that it is more effective when interventions match participant deficits to skills taught. The lack of relevance of each skill to all participants and the degree of need if relevant may also be a factor that impacted on the results.

The intervention in this study was intentionally shorter in length and less intense than other studies using *Skillstreaming the Adolescent* and social skills training because RtI rests on the use of brief interventions carried out during the course of the school day with the common recommendation for how long to use an intervention before making a determination as to its efficacy being 6 weeks. Previous work using *Skillstreaming the Adolescent* had interventions lasting longer than six weeks or occurring more frequently (e.g. twice a week v. once a week) than this study. Each skill was introduced at a rate of one per week, so students had more opportunities to practice the earlier skills and some skills contributed to the development of a larger construct, such as cooperation which was targeted in three separate skills/weeks. If the intervention lasting six weeks was insufficient for producing noticeable change, then the skills introduced in the later stages were essentially even further limited. This suggests that in order for significant behavioral changes to take place, interventions may need to occur with more intensity or for a longer duration.

Academic achievement was not affected by the social skills intervention, as was hypothesized. Perhaps the answer for not finding academic change lies in the length of time of the intervention and in the measurement of academic achievement as well. Grade

averages might mask subtle changes that might be occurring in a student's academic behaviors. Perhaps all factors that contribute to a student's grade should be considered separately as well as in the aggregate as was done in this study. Just as there were no significant changes in the domain scores on the SSRS, but at least one significant improvement among the subscale scores, there might have been significant changes in one or more of the components that contribute to a student's overall average in a given subject but not in the final average. For example, did homework completion increase? What about completion of class work? Class participation? Test grades? Do we expect that all academic behaviors will increase at the same time and at the same rate? Will one behavior change first and then others follow? Or perhaps as Rutherford et al. (2008) suggest in the case of children with ADHD, academic achievement precedes social skill improvements. Make positive changes in academic outcomes and teachers' perceptions of increases in social skills follow.

This study provides some evidence that significant gains are possible under conditions of short-term intervention. Although significant gains were not made across-the-board, this study holds out promise that focused brief intervention can alter the course of behaviors that place a child at-risk of school failure when conducted at a point before problematic behaviors become significant enough to warrant special education.



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