Do executive skills or language skills best predict social competence? Suzanne Hungerford, Katherine Call-Morin, Nancy Bassendinowski & Shasta Whitford 

Introduction

• Vygotsky (1934/1986) purported that children use self-talk or internal speech to guide and regulate their own behavior. Since that time, the idea that language is important for self-regulation and social competence has received considerable attention.
• In fact, research shows that children with language disorders are at high risk for social skill deficits and problem behaviors (Bahau & Simonsen, 1990; Bistak et al., 1996; Camarata, Hughes & Ruhl, 1988; Castell & Baker, 1987; Cohen, 1996; Fujik & Bennett, 1996; Hart, Fujik, Brinton, & Hart, 1990).
• Gallagher (1999) stressed the importance of language in the regulation of emotion and behavior, and attributed emotional and behavioral problems in children with language disorder directly to the inadequate language.
• Hart, et al. (2004) also concluded that problems in prosocial behavior are directly related to language impairments, but the social withdrawal found in language disorder is not directly related to language. They postulate that some other factor linked to language impairment must be linked to social withdrawal.
• Executive functions are known to mediate several aspects of social and behavioral functioning in a variety of clinical populations (Riley-Brubak & Sabin, 2006; Schofield, Paley, Frankel, & O’Connor, 2006; Wibbels, Thorell, & Bokil, 2008). Executive dysfunction appears to be common in children with language-based learning disabilities, as well, and in the fact lines between language-based learning disabilities, ADHD, and executive dysfunction are not clear (Meltzer & Krishnan, 2006; Wahlstedt, 2006; Beitchman & Baker, 1987; Cohen, 1996; Simmons, 1990; Bartels, 2001). Executive dysfunction relative contributions of language and executive functioning. This example is through the use of self-talk.
• Indirectly, teach social regulation through non-contingent reinforcement (Gimpel, 2007). Through the use of times during social activity, children can learn to check-off specific behaviors that occur. Once successful at identifying behaviors, the process is followed by “contingent reinforcement for increase in positive behaviors and a decrease in negative behaviors” (p. 311).
• Provide a “surrogate narrative” (Cox, 2007, p. 224). This is a narrative you model for self-regulation. Skills suggested are to provide a “roadmap” for problem solving (p. 237).
• Use group role-play, then reinforce skill production. Ignite disinterested responses, fade cuing and reinforcement over time (Dawson & Gauze, 2004).
• Use reflective journals and cognitive problem solving to teach executive function skills (Catterall, 2005).
• Employ school-wide curricula like “I Can Problem Solve” (Shure, 2006) or “Tools of the Trade” (Herbst et al., 2008). These are curricula for teaching pro-social skills via problem solving activities or emphasis on self-regulation.

Methods

• The data for this study were gleaned from the records of 45 children (age range: 6-12 years) who had been referred for auditory and language processing assessment. Recorded from the files were scores from the Parent forms of the Behavior Regulation Index (BRIEF; Gresham & Elliott, 1999), the Parent forms of the Social Skills Rating System (SSRS; Gresham & Elliott, 1999), and the Clinical Evaluation of Language Fundamentals (CELF; Semel, Wiig, & Secord, 2003).

• Stepwise linear regressions were performed using SSRS for each of the four subscales (p < .005). Independent (or predictor) variables were composite or subscale scores from the Parent forms of the Behavior BRIEF (BRIEF-Parent). Dependent variables were Social Skills and Problem Behavior standard scores from the Parent form of the SSRS. T-tests and descriptive statistics were also used to make comparisons and list the descriptive data.

• Parent BRIEF scores were used in this study.

• All analyses were performed using SPSS for Windows (version 15). A one sample t test was used to test the null hypothesis that the population mean is equal to the sample mean. Independent (or predictor) variables showed that executive dysfunction is directly related to language impairments, but the social withdrawal found in language disorder is not directly related to language. They postulate that some other factor linked to language impairment must be linked to social withdrawal.

• Questions remain about the relative contributions of language and executive functioning on the social skills and behavioral regulation in children with deficits in both areas.

Executive functions (EFs) “allows us to organize our behavior over time and override immediate demands in favor of longer term goals” (Dawson & Gauze, 2004, p.11). They include the ability to:

• Initiate actions when appropriate;
• Inhibit impulses and emotions when necessary;
• Plan actions;
• Organize behavior and materials;
• Employ strategies and attention appropriately;
• Hold information in memory to complete tasks;
• Self monitor.

Subject Characteristic

• A sample size test revealed that these children, referred for auditory and language processing assessment, did have significantly fewer social skills (p < .05), significantly more problem behaviors (p < .005), more executive dysfunction competence (p < .05) than the normative population, as measured by the SSRS, BRIEF, and CELF 4 scores. T-tests also revealed that Parent and Teacher BRIEF composite scores were not significantly different (p > .05). Only Parent BRIEF composite scores were used in this study.

Conclusions and Implications

• Our results indicate that executive skills, not language skills, may mediate social skills and behavioral regulation in this population.

• Riggs et al., (2006) found that executive functions can influence social skills development through three main areas: as moderating social skills development; as mediating (by controlling the development); and through executive skills as being the outcome of intervention.

• In a longitudinal study (Hawkins et al., 2005) on the mediating effects of teaching executive function skills during elementary school, the impact on “crime, delinquency, emotional and mental health, health, and crime and substance use at age 21 years of age” was dramatic (p.25).

• Results of their early, long-term, curriculum-wide intervention were that it “put children on a more positive developmental trajectory that is maintained into early adulthood” (Hawkins, 2005, p.30).

Summary of Results

A regression analysis using CELF-4 and BRIEF scores as independent (predictor) variables showed that only executive function scores (specifically the Behavior Regulation Index of the BRIEF) predicted social skills (r2 = .42, F(1, 20) = 54.82).

A second regression analysis using CELF-4 and BRIEF scores as independent (predictor) variables showed that self-regulatory index alone (Behavior Regulation Index, specifically) was the most powerful predictor of SSRS Problem Behaviors (r2 = .36, F(1, 20) = 36.66, p < .005). This regression also found other predictor models that included executive dysfunction and some language scores (Language Content, primarily), but language alone did not predict problem behavior scores (p > .05). Results indicate that primarily executive skills, not language skills, are predicting social skills and behavioral regulation. Results need to be replicated with other measures of language and executive functioning.

One implication of this is that therapy that targets executive control may be more effective than language therapy, because children can learn to check-in for social competence and appropriate behavior. There is some support for this in the TBI literature (see Turckova, 2007).

Language was not a predictor of social skills (p > .05). Regression analyses were used to determine if executive functions as measured by the BRIEF, or language competence as measured by the CELF-4, were better predictors of social problem and problem behavior as measured by the SSRS.