

Impact of Classroom-Based Interventions On Student Outcomes

Leslie M. Babinski, Tamara A. Nimkoff and Ann E. Harman
All Kinds of Minds

In order to help all children succeed, regular education teachers must be skilled in modifying their instruction and implementing specific interventions based on their students' learning needs. In this era of increased accountability for all students as a result of No Child Left Behind, teachers are expected to be able to reach even children considered "difficult to teach." A framework for understanding how children learn and how to adapt instruction for learning differences provides teachers with the knowledge base necessary to make the many instructional decisions they make each day. This study is an exploration of a professional development program called Schools Attuned[®] that provides teachers with the knowledge and skills necessary to address a variety of learning needs in a regular education setting. Results of a cross-sectional survey indicate that teachers reported improvements in students' academic, social, behavioral, and affective outcomes following Schools Attuned. In addition, students of Schools Attuned trained teachers who received consultative special educational services, as opposed to a pull-out resource class, were more likely to experience improvements in behavior, motivation, and student-teacher interactions. Students who participated in a demystification session with their teacher also experienced improvements in self-concept, attitude, motivation, and student-teacher relationships. Finally, teachers who focused on strengthening students' strengths were more likely to report improvements in self-concept and student-teacher interactions. Taken together, these results provide support for the positive impact of Schools Attuned on student outcomes.

Impact of Classroom-Based Interventions On Student Outcomes

In order to help all children succeed, regular education teachers must be skilled in modifying their instruction and implementing specific interventions based on their students' learning needs. In this era of increased accountability for all students as a result of No Child Left Behind, teachers are expected to be able to reach even children considered "difficult to teach." A framework for understanding how children learn and how to adapt instruction for learning differences provides teachers with the knowledge base necessary to make the many instructional decisions they make each day. This study is an exploration of a professional development program called Schools Attuned[®] that provides teachers with the knowledge and skills necessary to address a variety of learning needs in a regular education setting.

BACKGROUND

Schools Attuned[®] is a professional development program designed to improve an educator's ability to help students with differences in learning experience success in school. This program was developed by All Kinds of Minds[®], a non-profit organization that has created a variety of programs based upon a neurodevelopmental approach to learning (Levine, 1998, 2000). This approach involves understanding brain functions that affect the ways a student learns and performs in school and applying that knowledge to assessment and instructional practice.

The goals of the Schools Attuned program are to strengthen educators' understanding and management of differences in learning, help educators to help students become aware of their own learning profiles and improve their academic and social achievement, and create schools that respect differences in learning and nurture strengths in students. The Schools Attuned professional development program was designed using principles that reflect standards of the National Staff Development Council and current research on adult learning (Borasi & Fonzi (National Science Foundation), 2002; Laine & Otto (NCREL), 2000; Little, 1993; Rogers, 2002; Bransford, et al. (National Research Council), 2000). The program design was guided by the need to develop content and instructional

techniques that respect and use educators' wisdom of professional practice; ensure that educators are actively engaged in learning new content; develop reflection and other professional practices; and provide for classroom-based follow up opportunities.

The Schools Attuned program provides a minimum of 35 instructional hours (Core Course) plus a minimum of 10 contact hours for follow-up experiences (Practicum). As a preparatory activity for Schools Attuned, participants select a student of their own whom they identify as struggling with learning. Participants gather observational data and work samples to bring to the program. The student becomes the participant's case student throughout the Schools Attuned training. The Schools Attuned program contains the following elements: (1) content based on a neurodevelopmental approach to learning presented through the *Developing Minds Video Library*, (2) readings from books and articles by Dr. Levine and others, (3) small group work to provide for active assimilation of content and practice of skills, (4) case studies/vignettes to help participants understand the constructs, (5) demonstration and practice sessions to provide opportunities to use complex information and processes simultaneously and fluidly, (6) application of these processes to the participant's own case student or to a complex case student provided to them, (7) preparation for implementing Schools Attuned in the school setting, including management strategies, and (8) practicum experiences offered during the school year to help support implementation of Schools Attuned.

The skills learned in Schools Attuned include the seven-step process of Attuning a Student. The process of Attuning a Student provides tools and methods to help teachers, students, and their parents understand how students' neurodevelopmental differences can affect their learning, particularly in school. Students, their parents, and educators are collaborators both in gathering information about students' learning and in planning to manage their school experiences to maximize success and minimize failure. This collaboration forges a sense of alliance and promotes optimism about the future. Together, through a process called "demystification," these team members share an understanding of the underlying neurodevelopmental functions that may be affecting a student's learning, both positively and negatively. One of the core components of this

approach is a focus on identifying the student's neurodevelopmental strengths into the management plan. This understanding enables them to shed preconceptions, and even misconceptions, about the student as a learner and to plan for and implement strategies that address his/her strengths and weaknesses to improve learning. Attuning a Student consists of seven major stages: Noticing a Student, Data Collection, Data Analysis, Profile Building, Linking the Profile to School Performance, Developing a Management by Profile Plan, and Implementing the Management by Profile Plan.

EVALUATION OF PROFESSIONAL DEVELOPMENT PROGRAMS

Program evaluation is an important component of a professional development program. Extensive work by Guskey on how best to evaluate the impact of professional development has resulted in a framework of five critical levels of program evaluation (1995, 2000, 2002). The framework includes examining: (1) participants' reactions to the professional development experience, (2) participants' acquisition of new knowledge and skills, and (3) changes in the organization, procedures, and climate of schools due to the innovation. Guskey's fourth level of evaluation involves the assessment of participants' use of the knowledge and skills they have gained. For example, how are teachers implementing what they have learned? How did the professional development activity relate to change in instructional practice? The fifth level of evaluation involves the impact of professional development on student outcomes, what Guskey refers to as "the bottom line".

Each of these five levels is important to providing data on the quality and impact of a professional development program. During the Schools Attuned Core Course and Practicum, All Kinds of Minds uses daily written reflections, survey questionnaires, and portfolio documentation to gather evidence of participant reaction to the course and its facilitators, to assess the knowledge and skills that participants gained as a result of the program, and to gather educator reports on the impact of Schools Attuned at the individual student, whole classroom, and school wide levels. The results of these analyses inform the content, format, and organization of the Schools Attuned Program. In addition,

this program evaluation identifies trends that may then be further investigated through independent impact research.

METHODS

This study is based on results of a cross-sectional survey. The purpose of the present research was to examine the student outcomes that teachers report as a result of their use of Schools Attuned, and to explore how those reported outcomes vary according to special education eligibility, type of special education services provided, and the use of the Attuning a Student Process.

Instrument

The *Schools Attuned End-of-Program Participant Survey* was used to gather data for this study. The survey was designed to collect information on (1) how teachers have implemented Schools Attuned strategies and concepts in their classrooms and (2) the outcomes of that implementation on students. Therefore, the *End-of-Program Survey* gathers detailed information on implementation with individual students (and outcomes of that use), as well as implementation and outcomes of use with the whole classroom. The survey was distributed after teachers had completed their final Practicum session, which was 9-12 months after their initial Core Course training.

Data Collection and Sample Description

Surveys were mailed during the second week of June 2003. A total of 317 surveys were sent to educators in North Carolina and Oklahoma who had completed the Schools Attuned Program. After a second mailing, a total of 200 surveys were returned for a response rate of 63%. Of the 200 surveys received, 134 were from regular classroom teachers. The other respondents included administrators, psychologists, counselors, and other specialists and support personnel who were not included in the analyses for this study since the focus was on regular education teachers.

The teachers in the sample taught grades kindergarten through 8th grade. The majority (66%) had more than 10 years experience. Twelve percent of the teachers had between 1

and 3 years experience, 10% had between 4 and 6 years experience, while the final 11 % had 7 to 9 years experience.

RESEARCH QUESTIONS

In this study we were interested in examining teachers' reports of the use of the Schools Attuned for students who were experiencing academic difficulty. The following research questions are examined in this report:

What individual student outcomes do teachers report as a result of the Attuning a Student process?

Are there any differences in reported outcomes for students who receive consultative special education services as compared to those who receive resource class services?

Do student outcomes differ based on the use of interventions specific to the Attuning a Student process, such as the focus on student strengths and the use of demystification?

RESULTS AND DISCUSSION

Student Outcomes

Teachers reported outcomes for an individual student in their class that they focused on in the Attuning a Student process. Of the individual students selected for intervention, 60% were boys and 40% were girls. Eighty-two percent of the students were Caucasian, 13% were African American, and less than 1% each were identified as Native American, Pacific Islander or other. Only 4% of students were identified as Hispanic. English was the first language for over 97% of the students. Just over 35% of the students were identified as participating in the free or reduced lunch program at their school.

As shown in Figure 1, over half of the teachers indicated improvements for the targeted student in each of the following areas: improved self-concept (74%), improved course grades (63%), improved student-teacher interactions (61%), improved motivation (56%), and improved attitude toward school (51%). Teachers also reported improvements in social interactions (48%), parent-teacher interactions (45%), student behavior (42%), and

standardized test scores (25%). These results indicate that teachers perceived improvements in the targeted student across academic, social and behavioral demands.

Special Education. Although Schools Attuned is not designed exclusively as a special education initiative, many teachers use the Attuning a Student process with children who receive special education services for part of the school day. Forty percent of the students who were targeted for interventions and/or accommodations by their teachers were eligible to receive special education services. No significant differences were found for students receiving special education services as compared to those not receiving special education services for any of the individual student outcomes examined. In other words, teachers reported the same level of success with students identified as needing special education services as those students who did not receive special education services.

We hypothesized that students within special education may respond differently to teachers' efforts to intervene or provide accommodations in the regular education classroom based on the level of services they receive. Students were categorized into two levels of service by their teachers: collaborative/consultative services (n = 10, 21%) or resource services (n = 38, 79%).

Students who received collaborative/consultative services were more likely to improve their behavior as compared to students who received resource services (70% vs. 24%, $x^2 = 7.6$, $df = 1$, $p = .01$). Similarly, students who received collaborative/consultation services were more likely to improve their motivation as compared to students who received resource services (80% vs. 45%, $x^2 = 3.9$, $df = 1$, $p = .05$). Furthermore, teachers reported an improvement in student-teacher relationships for students who received collaborative/consultative services as compared to students who received resource level services (90% vs. 55%, $x^2 = 4.1$, $df = 1$, $p = .04$). See Figure 2. Caution should be used in interpreting these results due to the small number of students classified as receiving collaborative/consultative services. However, these findings suggest significant improvements in non-cognitive domains for special education students who spend their

entire school day in a regular education setting with a teacher who has been trained in Schools Attuned.

Demystification. The demystification sessions with students and parents are a key component in the Attuning a Student process in that it is focused on infusing optimism, building an alliance, and promoting the destigmatization of neurodevelopmental variation. Sixty-four percent of teachers reported conducting demystification sessions with the student they targeted for intervention. We were interested in finding out if demystification was related to the teachers' reports of positive outcomes for the student.

Using a series of chi square tests, we found that when teachers used demystification, significantly more teachers reported an increase in their student's self-concept as compared to those who did not use demystification (86% vs. 54%, $x^2 = 16.2$, $df = 1$, $p = .00$). Furthermore, demystified students were more likely to improve their attitude toward school (60% vs. 37%, $x^2 = 6.2$, $df = 1$, $p = .02$); improve their motivation (66% vs. 40%, $x^2 = 8.6$, $df = 1$, $p = .00$); and improve their student-teacher interactions (68% vs. 48%, $x^2 = 5.3$, $df = 1$, $p = .03$) as compared to students who did not participate in a demystification session with their teacher. (See Figure 3.) In other words, students who participate in demystification with their teacher experience improvements in the non-cognitive aspects of learning.

Strengthening Strengths. One of the unique aspects of the Attuning a Student process is the focus on the integration of the student's neurodevelopmental strengths in the development of their management plan. We examined the relationship between the teacher's use of strengths in the management plan and a variety of student outcomes. Seventy-eight percent of the teachers in this sample reported focusing on students' strengths. As shown in Figure 4, we found that when teachers reported strengthening strengths, they were also more likely to report improved student self concept (80% vs. 55%, $x^2 = 7.2$, $df = 1$, $p = .01$) and improved student-teacher interactions (66% vs. 41%, $x^2 = 5.9$, $df = 1$, $p = .02$).

SUMMARY

The results of this study indicate that following Schools Attuned training, teachers perceive improvements in their students across academic, social, behavioral and affective domains. Eligibility for special education was not related to the teacher's report of positive student outcomes. However, among students who received special education services and were part of the Attuning a Student process, those who remained in the regular education classroom (as compared to those who received services in a resource classroom) were more likely to experience improvements in behavior, motivation, and student-teacher relationships. Students who participated in a demystification session with their teacher also experienced improvements in self-concept, attitude, motivation, and student-teacher relationships. Teachers who focused on strengthening students' strengths were more likely to report improvements in self-concept and student-teacher interactions. Although the inferences that can be drawn from this study are limited due to the nature of self-report data, these results provide at least preliminary support for the positive impact of Schools Attuned on student outcomes. We recommend that future research focus on the specific interventions and accommodations teachers make for learning differences and their impact on academic achievement.

References

- Borasi, R. & Fonzi, J. (2002). *Foundations (vol. 3): Professional Development That Supports School Mathematics Reform*. National Science Foundation.
- Bransford, J. D. et al. [National Research Council] (2000). *How People Learn: Brain, Mind, Experience, and School*. National Academy Press: Washington, D.C.
- Guskey, T. R. (1995). *Professional Development in Education: New Paradigms and Practices*. Teachers College Press: New York.
- Guskey, T. R. (2000). *Evaluating Professional Development*. Corwin Press: Thousand Oaks, CA.
- Guskey, T. R. (2002). Does it make a difference? Evaluating professional development. *Educational Leadership*, March, 45-51.
- Laine, S. W. & Otto, C. (2000). *Professional Development in Education and the Private Sector: Following the Leaders*. North Central Regional Educational Laboratory.
- Levine, M. D. (1998). *Developmental Variation and Learning Disorders*, 2nd ed. Educators Publishing Service: Cambridge, MA.
- Levine, M. D. (2000). *Educational Care: A System for Understanding and Helping Children with Learning Problems at Home and at School*, 2nd ed. Educators Publishing Service: Cambridge, MA.
- Little, J. W. (1993). Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis*, 15 (2), 129-151.
- Rogers, C. R. (2002). Voices inside schools- Seeing student learning: Teacher change and the role of reflection. *Harvard Educational Review*, 72 (2), 230-253.