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The use of evidence-based instructional strategies in special education settings in secondary schools: Development, implementation and outcomes☆

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ABSTRACT

The lack of effective training and an inability to maintain fidelity are two major barriers to implementing evidence-based practices in schools. This study examined the level of implementation of evidence-based practices by teachers after they participated in a unique training program aimed at enhancing the use of evidence-based practices. The results indicate that five months posttraining, 62% of the evidence-based strategies had been implemented and these levels were maintained 13-months posttraining. While the level of exposure to students of the evidence-based practices was low, significant longitudinal improvements in reading and levels of inclusion were documented.

1. Introduction

The use of instructional strategies that have a strong empirical foundation supporting their effectiveness is proposed as an important factor in improving the educational outcomes of students in both general and special education. In the United States, the *No Child Left Behind Act* (U.S. Department of Education, 2002) refers to evidence-based practice 110 times in outlining the federal plan to improve general education (Slavin, 2002). The need to improve outcomes in special education has also been noted and the first recommendation in the report of the President's Commission on Excellence in Special Education (PCESE) is to develop a culture of results that should emerge from improved instruction based on research and increased accountability (PCESE, 2002). At present, the United States, as well as other countries, is deeply immersed in comprehensive reform activities aimed at improving student outcomes in both general and special education. However, the need to improve outcomes for students who have disabilities is critical in light of the continuing poor achievement of this group of students (Wagner et al., 2006).

Evidence-based practices are generally regarded as those strategies shown to be effective by credible research demonstrating the practices caused improved learner outcomes (Cook, Tankersley, Cook, & Landrum, 2008; Odom et al., 2005). The use of evidence-based instructional strategies to improve student outcomes in special education classes has much potential. A special issue of *The Journal of Special Education* (Cook & Schirmer, 2003) highlighted a series of research based instructional practices for children who have disabilities and the literature in special education contains several research syntheses and meta-analyses describing a multitude of evidence-based practices (e.g., Forness, Kavale, Blum, & Lloyd, 1997; Gersten, Schiller, & Vaughn, 2000). However, the consensus in the field is that there is a vast gap between research and practice that is of national concern (Greenwood, 2001). Further, the failure to implement and sustain the use of effective practices in the classroom has been offered as a major explanation for the poor outcomes for students in special education programs (Greenwood & Abbott, 2001; Landrum, Tankersley, & Kauffman, 2003).

While several explanations have been proposed to explain the research to practice gap (e.g., Greenwood & Abbott, 2001; Joyce & Showers, 2002; Klingner, Ahwee, Pilonieta, & Menendez, 2003), two factors emerge as being especially compelling in accounting for the sparse use of evidence-based instructional practices in special education classrooms as well as in general education. First, typical professional development opportunities conducted by school

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districts, the major vehicle for introducing new effective strategies to practicing teachers, have not demonstrated a transfer of practices to the classroom (Council for Educational Policy, Research, and Improvement (CEPRI), 2005; Joyce & Showers, 2002; PCESE, 2002; Spencer & Logan, 2003). Current professional development for teachers has been characterized as "one shot" and lacking in the systematic follow-up necessary to sustain newly presented instructional strategies. This is especially discouraging in light of the estimate of over $700 million being spent annually on professional development for teachers (CEPRI, 2005).

Second, when the use of evidence-based practices is introduced to teachers and implementation begins, there is very little evaluation of the degree to which the intervention is being implemented with program fidelity. For example, in two reviews that included several hundred interventions studies (Dane & Schneider, 1998; Moncher & Prinz, 1991), it was found that only 24% and 18% of the studies reviewed measured fidelity. Therefore, it is not surprising that numerous studies indicate that few evidence-based practices are implemented in the field with adequate fidelity due to a lack of administrative support, inadequate follow-up, a lack of collaboration with teachers at the school level, and a general lack of time (CEPRI, 2005; Joyce & Showers, 2002; Klingner et al., 2003; Spencer & Logan, 2003).

The importance of examining the fidelity with which interventions are implemented has been pointed out in the literature for some time. For example, over 20 years ago Blasé, Fixen, & Phillips (1984) discussed the need to discriminate between implementation outcomes and effectiveness outcomes when implementing evidence-based interventions. That is, we need to know if the practitioners are implementing the intervention as intended and, if so, we can then evaluate the effectiveness of the program. Without ascertaining program fidelity, the cause of effectiveness (or ineffectiveness) cannot be attributed to program features. The literature describing research on implementation is growing and syntheses of findings are available (e.g., Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). It is clear from implementation research that we only can expect positive outcomes from evidence-based practices if they are implemented with fidelity (Bernfeld, 2001; Aos, Lieb, Mayfield, Miller & Pennuci, 2004).

1.1. Enhancing implementation

In order to maximize the extent to which teachers had "buy in" to implementing evidence-based practices in their classrooms, a research demonstration project was developed through a unique partnership of special educators, parents, administrators, and researchers. Planning meetings with members of the partnership were held to discuss what constitutes evidence-based practice, what practices teachers were already using that met these criteria, and what practices they thought would be helpful to students. Subsequently, work groups met to develop teacher friendly manuals that would facilitate the implementation of evidence-based practices in the classrooms. These manuals focused on strategies that would supplement or add to existing classroom practices. The topics of the four evidence-based strategies manuals (ESMs) were: (1) enhancing reading comprehension, (2) formative evaluation, (3) positive behavior supports (PBS), and (4) family involvement. A significant body of empirical literature supports the effectiveness of each of these topic areas (e.g., Gersten et al., 2000). A detailed report on this demonstration project has been published (Duchnowski, Kutash, Sheffield, & Vaughn, 2006).

Many of the strategies to improve reading were adapted from *Creating Independence through Student-owned Strategies* (Santa, Havens, & Maycumber, 1996), a reading program based on empirically validated strategies. The reading ESM promoted the use of effective strategies such as mnemonics, selective highlighting and underlining, finding the main idea, and using graphic organizers (Mastropieri, Scruggs, Whittaker, & Bakken, 1994). Formative evaluation (Fuchs & Fuchs, 1986) was considered to be technical jargon by the teachers and was replaced with "providing academic feed-back." The ESM contained sample charts and graphs that the teachers could customize and use to involve the students in monitoring their progress on a frequent basis. Strategies using PBS were aimed at reducing challenging behaviors and increasing desirable social skills in students (Koegel, Koegel & Dunlap, 1996). These strategies included concepts such as an emphasis on strengths, accommodations in the classroom environment, and developing effective classroom rules. All the partners viewed family involvement as a critical area needing to be addressed in the project. The strategies developed in this ESM emphasized helping families collaborate with teachers to ensure academic success of their children, with a specific focus on increasing family help with homework assignments (Jeynes, 2005, 2007). In addition, issues of cultural sensitivity were addressed in the materials associated with this topic by including strategies that were appropriate for the ethnic and cultural diverse student populations in the school.

The activities of the demonstration project continued for 16 months and encompassed an iterative process in which the ESMs were pilot tested and refined based on the feedback of the teachers, administrators, and parents. Workshops were held with project teachers, administrators, and parents to discuss feedback on draft versions of the manuals, which were incorporated in subsequent versions. In addition, teachers developed rubrics and checklists to facilitate implementation. For example, for parent involvement, the checklist contained items such as: send a welcoming letter to parents at the start of school; send a letter to parents of new students entering during the school year. During these sessions teachers developed sample lesson plans incorporating strategies for the group to consider for inclusion in the manuals. Draft versions were developed at the 4th and 12th month of the project with a final version being produce in the 16th month and given to teachers at the start of a school year for implementation (Duchnowski et al., 2006).

1.2. Purpose of the present study

The present study was conducted in order to investigate the implementation outcomes of the ESMs; i.e., we examined the degree to which participating teachers implemented the components of the four ESMs with their students. In addition the level of obtained implementation was compared to a group of teachers from neighboring schools who did not participate in the project. Fidelity was measured longitudinally, 5 months and 13 months after the final version of the ESMs were produced. This assessed the degree to which implementation of evidence-based practices were sustained over time. In addition, a measure of the contact each student had with these teachers, i.e., "dosage", was calculated. The measure of dosage is particularity important at the secondary level. Students typically have more than one teacher, may move into more inclusive settings and thus reduce their time with the special education teachers who are implementing the ESMs. A measure of dosage takes into account the level of fidelity for a teacher as well as the time a student spends with that teacher. Finally, levels of implementation, dosage, and students' outcomes were examined across disability categories.