

## **Implementation of Case-Based Instruction in Multiple Contexts: Project Overview and Implications for Rural Special Education Teacher Preparation**

Kate Mitchem  
West Virginia University  
606-E Allen Hall  
Morgantown, WV 26506-6122  
304-293-3450 ext 1125

Kevin J. Miller  
Department of Child, Family  
& Community Science  
College of Education  
University of Central Florida  
Orlando, FL 32816

Gail Fitzgerald  
University of Missouri-Columbia

Kevin Koury  
California University – PA

Candice Hollingsead  
Andrews College - MI

Institutes of higher education across the nation face very real issues related to producing sufficient numbers of fully qualified special educators to meet the needs of surrounding school districts (Billingsley, 1993; Boe, Cook, Bobbitt, & Terhanian, 1998). The Bright Futures Report (Council for Exceptional Children, 1998) indicated that while seasoned special education teachers are leaving the field at twice the rate of general educators, inexperienced and unqualified special educators with lower levels of commitment to the field are even more likely to leave. In rural communities, these challenges are exacerbated by limited resources, lack of access to high quality professional development or teacher education programs, the pervasive shortage of special education and related services personnel, and geographical and topographical barriers to a wide range of field placement options (Ludlow, 1998).

Much has been written about the shortages of fully qualified special educators faced by rural communities (Koury, Ludlow, & Wienke, 1991). Recruiting and retaining teachers of students with emotional and behavior disorders can be even more challenging. A study by Singh and Billingsley (1996) indicated that the highest burnout area in special education may be working with students with behavioral disorders. The difference in willingness to stay in the field was attributed to higher stress in BD classes. This seems to be confirmed by Cegelka and Doorlag's (1995) report on attrition of special education teachers. They found that dealing with

severe behavior disorders and managing challenging behavior was one of four skill areas that teachers rated themselves as least well prepared. Many rural schools have been forced to hire special educators on emergency licenses to fill new and vacant positions particularly in the area of emotional and behavioral disorders (EBD), typically considered an entry-level position (Fore, Martin, & Bender, 2002). Although teachers burn out or leave teaching for complex and varied reasons, the training that teachers receive is believed to be a primary contributor to their success or failure (Farber, 1991; Wrobel, 1993). Thus, the need to identify effective and alternative methods of preparing preservice and inservice special educators to work with students with EBD is critical.

The challenges are to deliver effective preparation to teachers-in-training to expand their knowledge and skill repertoires and to foster the development of problem-solving skills so that they are capable of dealing with challenging behaviors. Newer technologies such as case-based instruction, multimedia, electronic performance support tools, and online discussion groups provide teacher educators promising approaches for teaching in new ways and for students to learn in new ways. Fitzgerald and Semrau (1993-97; 1998-2000) have developed, evaluated, and disseminated a series of ten interactive, multimedia case studies focusing on children with emotional and behavioral disorders (Teacher Problem Solving Skills [TPSS]) through the Virtual Resource Center in Behavioral Disorders (VRCBD). While initial research with the TPSS materials shows that students are enthusiastic about their learning experiences and cite the self-pacing, contextual situations, multiple ways of learning, and interactive participation as more motivating and realistic when compared to traditional instructional methods (Fitzgerald, Wilson, & Semrau, 1997; Semrau & Fitzgerald, 1995), further research is needed to investigate the process, outcomes, and transfer of skills and knowledge (Fitzgerald, Hollingshead, Koury, Miller, & Mitchem, 2003).

The purpose of this paper, then, is to describe the TPSS case studies for training personnel to work with children with emotional and behavioral disorders; present an overview of a new federally funded project to examine the implementation of these case studies in multiple contexts; and to discuss the implications of this study for rural preservice and inservice training in special education.

### **TPSS Case Programs**

The over-arching theme of the TPSS case study hypermedia materials is to provide flexible training materials to enhance problem solving of teachers preparing to serve children with social, emotional, and behavioral disorders. These interactive case programs are potentially an excellent resource for rural teacher preparation programs because of their versatility; they can be used as teacher support or learner support materials, in general or special education preparation programs, in face-to-face, web-enhanced, or online teaching formats; and in preservice or inservice education. The materials provide practice fields with authentic cases. Through multiple presentations (audio, video, and case records) of case materials and use of accompanying electronic performance support system (EPSS) tools, learners are able to:

- (a) develop multiple perspectives about children's disorders (Program I: *Understanding Children with Emotional and Behavioral Disorders*);
- (b) practice assessment and planning skills with children in authentic cases (Program II:

- Assessment and Planning in Emotional and Behavioral Disorders and Observation Practice*); and
- (c) create instructional and management plans for serving these children (Program III: *Instruction and Management in Emotional and Behavioral Disorders; Tool Resources; Skill Resources, Teacher Tools; KidTools; and KidSkills*).

More detailed descriptions of the cases can be found at the VRCBD website (<http://www.coe.missouri.edu/~vrcbd>) and free copies of the support tools for children KidSkills and KidTools that can be downloaded from the KidTools website (<http://kidtools.missouri.edu>).

The TPSS programs have been well received by novices in teacher education (Fitzgerald, Semrau, & Deasy, 1997; Fitzgerald, Wilson, & Semrau, 1997). Studies indicated that most preservice teachers were pleased with the quality and usefulness of the interactive cases and considered their learning experiences through the materials to be comparable to hands-on learning experiences similar to being in the classroom. A number of studies have been conducted on the effectiveness of learning outcomes using TPSS materials (Fitzgerald & Semrau, 1998; Fitzgerald, Semrau, & Deasy, 1997). Findings demonstrated that learners broadened their knowledge, improved cognitive flexibility in viewing children's problems, and increased their problem-solving skills. Other studies have also investigated the relationship between learner differences, usage patterns, and learning outcomes using TPSS materials (Fitzgerald, 1998; Kraus, Reed, & Fitzgerald, 2000). Overall engagement time and learning outcomes were equivalent for diverse learners even though learners approached the programs in different ways.

There have been no empirical studies to date that relate conditions of use to learning outcomes or the extent to which knowledge and skills transfer to professional usage. Recent studies (Elksnin, 1998; McNaughton, Hall, & Maccini, 2001) have documented the need for a research agenda for case-based instruction (CBI) that addresses such issues as the impact of CBI on student performance, most effective use of cases, and identification of factors that contribute to successful use of CBI. For this and other reasons, the current Phase III Steppingstones of Technology Innovation for Students with Disabilities project is designed to study the implementation of CBI in multiple teacher preparation contexts to document the process, outcomes, and transfer of knowledge and skills to teaching children with behavioral problems in applied settings.

## **Project Overview**

This Phase III project plans to study the use of TPSS cases and performance support tools across a variety of courses and delivery modes. The research is designed to track what preservice/in-service teachers learn from cases and how they transfer new knowledge and skills in field experience, student teaching, and job settings. Specifically, the research consortium seeks to address the following main research questions throughout the course of this 3-year project:

- (1) How are practice field cases implemented effectively in teacher education? What implementation variables influence effectiveness in multiple contexts?
- (2) How are practice field discussion groups offered effectively during training? What participation variables influence effectiveness in multiple contexts?

- (3) How are knowledge and skills gained in practice field cases utilized in child services during training? What sustained outcomes emerge during guided practice?
- (4) How are knowledge and skills gained in practice field cases transferred to child services in employment settings? What sustained outcomes emerge during employment?

In a collaborative research effort between researchers located at five universities--University of Missouri-Columbia (Gail Fitzgerald), Andrews University (Candice Hollingsead), California University of Pennsylvania (Kevin Koury), University of Central Florida (Kevin Miller), and West Virginia University (Kate Mitchem)--each researcher is currently implementing a minimum of two cases from the TPSS series in one course per semester for the next four semesters. A wide range of data will be collected from approximately 232 preservice and inservice teacher participants during the first two years of the study, with a follow-up group of 50 of those participants to study transfer of knowledge and skills to employment settings. Data will be collected through review of case artifacts using rubrics, computer data generated by users while using the cases and EPSS tools, qualitative comparison of concept maps created at training and transfer milestones, discourse analysis during online discussions, interviews with participants, and instructor field notes and researcher memos. A mixed-methods model will be used to measure and explain the effectiveness of case-based instruction occurring in multiple training programs where contexts and implementation will vary naturally. Multiple methods of qualitative inquiry and analysis will be conducted within and across training groups to examine the process of learning with case-based instructional formats.

### **Implications for Teacher Preparation in Rural Settings**

Berkeley and Ludlow (1991) indicated that most rural school systems experience some difficulty in designing and delivering effective inservice training to special education personnel due to limited resources and geographical distance. The versatility and availability in multimedia format of the TPSS case-based materials make them a practical option for rural special education teacher preparation. As Ludlow (1998) asserted, there is a need for alternatives to traditional staff development activities as well as applied research that investigates the extent to which field-based and distance education programs designed to prepare special education personnel in rural areas are effective. As previously indicated, the TPSS series of cases are potentially an excellent resource for rural teacher preparation programs because of their authenticity, versatility and flexibility of use. Some options for delivery include use as teacher support or learner support materials, in face-to-face, web-enhanced, or online teaching formats; and in preservice or inservice education. The results from this project should provide useful information related to how best to use multimedia case-based instruction as well as its impact on student performance and transfer of skills and knowledge to applied settings.

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