Chapter XXXIV
Electronic Performance Support System (EPSS) Tools to Enhance Success in School for Secondary Students with Special Needs

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ABSTRACT

This chapter introduces the use of electronic performance support systems (EPSS) as an assistive technology for students with mild disabilities, especially those with special learning and behavioral needs. This approach is a new development to use technology to support students in educational environments. In this chapter, the authors describe the need, rationale and technical development process of an electronic performance support system (EPSS), StrategyTools, a software program designed to support the successful integration of secondary students with mild disabilities in inclusive classrooms. In addition, they report the results from two federally funded projects related to research-based social and behavioral outcomes for secondary students and discuss recommendations for implementation of EPSS tool approaches. The authors hope this information on the innovative use of EPSS to support students with mild disabilities will improve success at school through the innovative use of technology.

INTRODUCTION

A relatively new field in technology—**electronic performance support systems (EPSS)** offers tremendous potential for addressing needs of secondary students who are at-risk for failure or who encounter challenges in school due to mild disabilities (Fitzgerald, 2004). The goal of an EPSS is to provide whatever supports are necessary to ensure performance and learning at the moment of need in a seamless activity (Gery, 1991; Gustafson, 2000; Laffey, 1995; Schaff, Bannan-Ritland, Behrmann, & Ok, 2005). EPSS tools can be designed for these students that integrate the main components of an EPSS—information, user guidance, procedural tools, and feedback—with technological enhancements for effective use.

The end of the 20th century saw a paradigm shift in beliefs and practices about how best to educate and support students with special needs in secondary schools (Gersten, 1998). Programming moved from remedial, pull-out classes to integrated models where students remain in general education environments and receive support and modifications as needed. Those students with special needs who are included in high school general education settings are typically those with high incidence learning disabilities and/or emotional/behavioral disorders as well as those at-risk for school failure. These students typically exhibit problems such as disorganization, poor study skills, ineffective learning strategies, difficulty with classroom behavior and social interactions, impulsive behaviors, and failure to plan ahead and engage in self-control (Bryant, Bryant, & Raskind, 1998; Edyburn, 2000; Okolo, 2000).

To be successful in integrated general education classrooms with their heavy focus on mastery of content and independent, self-guided work habits, all students have increased needs for self-regulation and learning and problem solving strategies. Because technology applications for students with special needs have primarily focused on literacy and academics (Fitzgerald & Koury, 1996; Fitzgerald, Koury, & Mitchem, 2008; Woodward & Rieth, 1997), little attention has been placed to date on the use of technologies for improving self-regulation and strategies for school success (Fitzgerald, 2004).

The instructional design, development, implementation, and outcomes of an EPSS for secondary students with special needs are herein described, along with practical recommendations to support the adoption of EPSS in school settings. One resource web site to aid readers in understanding the application of EPSS to students with special needs is found at: http://strategytools.org.

REVIEW OF RELEVANT LITERATURE

Computer-based training and support mechanisms are an innovative approach for helping children/youth gain control over personal behaviors. Although there are limited data on the use of computer-based instruction to support behavior change in children, research results are promising. Fitzgerald and Werner (1996) reported success with a computerized verbal mediation essay as a cognitive retraining procedure to assist a student with significant behavioral disorders in changing his behavior. In this case study utilizing a single subject research design, the computerized essay provided consistent practice and focused the child's attention and thoughts on behavioral choices and consequences. In another case study, the same researchers reported a procedure in which software templates were developed for a student to create self-monitoring materials to guide his behaviors (Fitzgerald & Werner, 1996).

In a recent study with high school students, Hartley (2001) found students could learn strategies from hypermedia computer programs, but learning of these strategies did not impact performance. Hartley hypothesized that better outcomes might occur if instruction in learning strategies was integrated with opportunities to