Chapter 6

Electronic Performance Support System (EPSS) Tools to Support Teachers and Students

Katherine Mitchem
California University of Pennsylvania, USA

Gail Fitzgerald
University of Missouri, USA

Kevin Koury
California University of Pennsylvania, USA

ABSTRACT

This chapter describes the use of a family of Electronic Performance Support Systems (EPSS) to support teachers and students with mild disabilities, especially those with special learning and behavioral needs. This approach uses technology to support students in educational environments. In this chapter, the authors provide a brief overview of the family of tools and describe the need, rationale, and technical development process of the latest tools in the family, PictureTools™ and PictureTools-Mobile™. These tools are designed to support positive behaviors of young children, incorporate both images and video, and in the case of PT-Mobile, the capacity to run on iPod and iPad. In addition, they report the results from two federally funded projects related to development, usability, and feasibility testing of these tools. Future research directions are discussed.

INTRODUCTION

Electronic performance support systems (EPSS) offer significant potential for addressing needs of students who are at-risk for failure or who encounter challenges in school due to mild dis-

abilities (Fitzgerald, 2005). 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, 1995; Gery et al., 2000; Gustafson, 2000; Laffey, 1995; Schaff, Bannan-Ritland, Behrmann, & Ok, 2005). EPSS systems have four basic components: 1) easily accessible information, 2) user guidance, 3) information/skills tutorials, and 4) tools to carry

out the task (Gery, 1991). As more experience has been gained with EPSS systems, tools have become more sophisticated and tutorials have incorporated multimedia instruction and con-textualized practice (Gustafson, 2000; Wilson & Myers, 2000). As schools have integrated more software tool approaches into the curriculum, a new area of interest focuses on the use of EPSS tools to help students to manage their own learning and behaviors independent of teacher direction. For students to develop this independence, they must be able to self-regulate in both behavioral self-control and strategic learning.

Self-regulation plays an important role in strategic performance. Research demonstrates positive effects on new learning as well as mastery and generalization from strategic self-regulation instruction (Reid, 1996). One group of EPSS tools to build self-regulation and problem-solving skills for students with mild emotional disorders and/or learning disabilities is *KidTools*™ (Fitzgerald & Semrau, 2000). A second EPSS software program, called *KidSkills*™ provides a system of organiza-tion tools and learning strategy tools (Fitzgerald & Koury, 2001-2002). A related EPSS program for the secondary level, *StrategyTools*™, combines tools for self-regulation and learning strategies (Fitzgerald & Koury, 2004-2005). The latest EPSS software programs in the EPSS series are *PictureTools* and *PictureTools-Mobile* designed for young, pre-reading children to assist with self-regulation through the use of picture and video prompts (Fitzgerald & Mitchem, 2008-2011, 2011-2013).

This chapter will provide a description and brief review of the literature to support EPSS and then describe the family of EPSS tools referred to here that are designed to be "growable" and incorporate numerous parent and teacher sup-ports and training materials that include interac-tive websites for students and educators—called *Kid Coach*™ (http://kidtools.org) and *Strategy Coach*™ (http://strategytools.org). These websites provide descriptions, examples, practice simula-

tions, and tool tips for adults to use to learning the tools and approaches. To illustrate the process involved in creating an EPSS, the next section of the chapter will describe the need, rationale and technical development process of *PictureTools* and *PictureTools-Mobile*, the latest in this family of software. The final section of the chapter will provide a case study of the application of tools in one classroom. In addition, recommendations for implementation of EPSS tool approaches and future research in this area will be discussed.

Examples of EPSS Tools

Before discussing the background and theoreti-cal underpinnings of the EPSS tool approach for students in schools, two examples of tools from the *StrategyTools* software program are provided. Figure 1 displays the self-regulatory tool "STAR Card". It is useful to help students take control of a problem behavior by stopping and thinking before acting, and then planning a better way to act and forecasting good results. Figure 2 shows the learning strategy "Chunker" that is a concept mapping strategy. By chunking the main parts of the concept into branches and important points for each, the Chunker helps students organize and remember information.

REVIEW OF LITERATURE

Computer-assisted (CAI) training and support mechanisms are an innovative approach for help-ing children/youth gain control over personal behaviors. 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. More recently, re-

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