User Studies: Evaluating the Use of EPSS Tools for Self-Management by Children*

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Abstract: This paper is a report of user studies with an EPSS software program for children that provides them easy-to-use templates for creating self-management materials for use in classrooms. An evaluation was conducted on the use of the materials in elementary classrooms in three states. Data were collected on behavioral characteristics and locus of control of the children, use of the software, teacher perceptions of behavioral change, and teacher and child satisfaction with the software. Findings from the usability tests will be reported and recommendations made for the design and development of EPSS software for young children.

Theoretical Base for the Use of EPSS with Children

Computer-based training and support mechanisms are an innovative approach for helping children gain control over personal behaviors. Although there are limited data on the use of computer-based instruction to support behavior change in children to date, 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; 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. This study was the pre-cursor to this work to develop and investigate the use of EPSS (electronic performance support system) tools with children and their teachers as part of a federally-funded initiative focusing on children with classroom behavior problems (Fitzgerald & Semrau, 1998-2000).

The Two Components of KidTools

Software for Children

KidTools is a software program designed with easy-to-use templates that can be individualized by children and/or their teachers. The computerized templates provide the structure and modeling for children to design cognitive-behavioral interventions to gain internal control over problematic behaviors (Meichenbaum & Goodman, 1971). The tools in the program are grouped into six types of self-management procedures: point cards, countoons, self-monitoring cards, STAR (Stop-Think-Act-Results) cards, make-a-plan procedures, and behavioral contracting. The software is kid-friendly with colorful graphics, text-with-audio directions, and simple formats. KidTools has undergone usability testing with children ages 7-10 to ensure literacy is appropriate for young children (Fitzgerald, Watson, Lynch & Semrau, 1999). The text and audio in KidTools utilize natural language of children; graphic

characters serve as "guides" to the different tools; and audio directions are provided to supplement the simplified text instructions.

KidTools is designed for children to use independently on classroom computers. To use the templates, the child simply clicks on "hot words" on the template form to enter personalized content and then prints the completed form for use in the classroom. The program automatically enters the child's name, date, and establishes an audit trail for record keeping purposes and user studies.

Resources for Educators

The package includes a resource information database that provides educators and parents with information to assist children in using KidTools. The infobase includes descriptive information for each type of procedure, steps for implementation, a variety of examples for students, troubleshooting tips, and recommended resources. Teachers introduce children to KidTools and troubleshoot the procedures as they are implemented in classrooms. This information resource component has been developed in conjunction with KidTools. Thus, the EPSS software package integrates references, guidance, and tools to support real-world classroom jobs.

Evaluation Study

The implementation of KidTools was evaluated with children, ages 7-10, in elementary classrooms in three states. Based on a teacher nomination process, children were selected to participate if (a) showing behavioral difficulties in classroom settings, or (b) having personal habits that could be improved through a self-management process. Each child utilized KidTools under the guidance of the classroom teacher for a two-month period. The process of identifying behaviors and selecting the tools for self-management were negotiated between the child and the teacher. Each classroom was supported by a project researcher who provided an orientation to the procedures and materials and responded to teacher questions as needed. Participants were also invited to participate in virtual online conference regarding self-management procedures and the use of KidTools.

Data collection instruments included: 1) an internal-external scale for children to ascertain the child's perceptions of internal versus external behavior control in school, and 2) a behavior rating scale filled out by the teacher to rate the presence of 45 problematic behaviors. Audit trails stored on the children's computer disks were analyzed for tool selection, content, and frequency of use. In addition, samples of the materials children created with the tools were examined as indicators of progress. Participating teachers were interviewed at the close of the project regarding use of the tools, perceived impact on children's behavior, usability of the resource information database, satisfaction with the software tools, and recommendations for improvement.

Conclusions from the Data

1. Observe and listen to children during design and development. Children can be important partners in the design process (Druin, 1999). Our involvement of children led to the addition of spoken text, simplified directions, and easy start-over options.

2. Gather feedback from children as users in their own settings. Children have different ideas than adults. Usage needs to be examined within the context of use.

3. Ease of use is critical for teacher acceptance. Teachers have minimal time to read manuals, troubleshoot software, and stand over children giving constant help.

4. Offer orientation and support for teachers. Teachers may not be familiar with the philosophy, approaches, and pre-requisites needed for effectively using KidTools. Hold an overview session, demonstrate the software, and discuss different implementation methods. Provide assistance and modeling in the classroom when needed.

Fitzgerald, G., Lynch, J., Semrau, L., & Peng, H. (2000). User studies: Evaluating the use of EPSS tools for self-management by children. Proceedings of Ed-Media 2000 World Conference on Educational Multimedia and Hypermedia.

5.   Focus on integration into a total, positive system for children. KidTools is not a stand-alone program, but rather, a tool to be used in combination with an effective, positive system of classroom management and instruction in the skills of behavioral change.

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