Newsletter of the **Evidence-Based Practice** Special Interest Group
of the Association for Behavior Analysis International

"The most Savage Controversies

are those about matters as to which there is no good evidence either way." Bertrand Russell

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Functions of the Evidence-Based Practices Special Interest Group (EBP-SIG)

- To identify appropriate methods for evaluating evidence from single-subject research and promote these methods within both ABA and the larger context of the evidence-based practice movement
- To promote activities that address the large-scale implementation of EBP within systems that support their sustainability
- To advocate for behavior analysis in this societal shift by following developments in other disciplines that influence the evolution of evidence -based practice and allow the larger professional community to have a voice

Inside This Issue

PRESIDENT'S CORNER

Join us in Welcoming Mark Harvey, New EBP Special Interest Group President as He Tells Us…Context Matters

When evaluating the efficacy and sustainability of evidence-based practices (EBPs), the impact of context warrants extensive consideration. For example, technologies and practices that work in special education classrooms, typically with smaller teacher to student ratios, may not be effective when implemented in general education classrooms that have higher teacher to student ratios. While many EBP evaluations consider participant demographic information, they fail to include staffing ratios and/or the density of the classroom (e.g., how many students in the instructional group, total number of students in the classroom). Inclusion of contextual variables during the EBP review process should facilitate identification of practices that can be efficiently translated from research to practice and may help ascertain variables that affect sustainability.

~ Mark Harvey

FEATURED ARTICLES

Editor's Note: We are pleased to have two Featured Articles for this issue. The first article, written by EBP SIG member Oliver Wendt, is a brief introduction to the process of conducting a systematic review of the literature. The second article, by Jimenez, Knight, and Spooner provides an example of how the outcomes from systematic reviews can be used to drive further research. Together, they are an excellent example of what the ABAI EBP SIG is all about. Enjoy.

Issue 1 (December), Issue 2 (April), Issue 3 (August)

Featured Article One – Systematic Reviews

Systematic Reviews of Behavior Analysis Research: A Brief Overview and Introduction

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In recent years, the field of Applied Behavior Analysis (ABA) has increasingly adopted the paradigm of evidence-based practice (EBP) as the preferred approach to assessment and intervention (Cooper, Heron, & Heward, 2007; Horner et al., 2005). EBP requires integrating the best and most current research evidence with clinical/educational expertise and relevant stakeholder perspectives to derive the best possible decision for a particular client or student (Schlosser, 2003; Straus, Richardson, Glasziou, & Haynes, 2005). The growing importance of EBP in the ABA field reflects the desire of behavior analysts and their clients to know how effective behavior analytic interventions truly are. Practitioners and consumers are asking what outcomes can be targeted and will be improved through ABA interventions, what is the extent of improvement that can be expected, how long do ABA interventions need to last, and what will be the cost? In addition, funding agencies and other stakeholders are increasingly questioning whether commonly accepted policies, programs, and practices actually produce an effect, or perhaps pose a risk (Turner, Nye, Ortiz, Liu, & Eisenstein, 2007). An answer to such questions cannot be given in a convincing manner through one individual study. Instead, multiple studies need to be synthesized to create aggregated evidence and establish the effectiveness or efficacy of an intervention under question. Only such a synthesis can offer a comprehensive overview on the currently available research base, and provide sound evidence in favor of, or against, an intervention (Schlosser, 2006). Systematic reviews and meta-analyses are rigorous scientific tools to create these urgently needed research syntheses. Many fields in health care and education have created hierarchies of treatment evidence to guide clinical and educational decision-making (e.g., Schlosser & Raghavendra, 2004). In these hierarchies, systematic reviews and meta-analyses constitute one of the most persuasive forms of scientific evidence and rank higher than individual experiments or non-systematic research reviews. Scientific disciplines where single-subject experimental designs (SSEDs) are the predominant approach to establishing the efficacy of an intervention went as far as placing SSEDs at the same evidence level as quasi-experimental group designs, with a synthesis of either design ranking on top of the hierarchy. A hierarchy example from the field of Augmentative and Alternative Communication is shown in Table 1. The purpose of this article is to provide a brief overview on the concept and major steps of conducting a systematic review by introducing the widely accepted format of the Campbell Collaboration (C2; 2010), an international organization devoted to producing and disseminating systematic reviews.

Table 1. Hierarchy of Evidence in Augmentative and Alternative Communication

1. Meta-analysis/Systematic review of (a) single-subject experimental designs, (b) quasi-experimental group designs (i.e., non-randomized)		
2a. quasi-experimental *group designs**	2b. *Single-subject* experimental design—one intervention	2c. *Single-subject* experimental design— multiple interventions
3. Quantitative reviews that are non meta-analytic		
4. Narrative reviews		
5. Pre-experimental group designs and qualitative case studies		
6. Respectable opinion and/or anecdotal evidence		
* Consider differences in quality regarding threats to internal and external validity (Campbell & Stanley, 1963). Wendt & Lloyd, 2005.		

Characteristics of Systematic Reviews

The Dictionary of Epidemiology (Last, 2001), refers to a systematic review as:

"The application of strategies that limit bias in the assembly, critical appraisal, and synthesis of all relevant studies on a specific topic. Meta-analysis may be, but is not necessarily, used as part of this process" (pp. 176-177).

As indicated by this definition, the term meta-analysis is often used in conjunction with systematic review; it would be incorrect, however, to use these terms synonymously. A meta-analysis is a special variant of a systematic review that is only conducted if data from primary studies are available, sufficient, and appropriate to carry out a set of procedures for a statistical synthesis of study results across the entire body of reviewed literature (Turner et al., 2007).

Systematic reviews are more and more replacing the traditional form of a literature review, the narrative review. Narrative reviews have been criticized as being of little value for EBP for at least the following reasons: Research literature synthesized in a traditional narrative review tends to reflect a biased sample of the entire range of relevant literature. Often only one single reviewer gathers and interprets the literature from his personal perspective. Reasons for including certain studies and excluding others are not made public, resulting in reviewer bias (Torgerson, 2003). Because the process of literature retrieval and making decisions of study inclusion and exclusion is not transparent, narrative reviews can hardly be replicated by other researchers. Due to the lack of a systematic, rigorous, and exhaustive search of all potentially relevant literature sources (Davies, 2000),

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pertinent research evidence can easily be ignored, inadvertently causing a possible selection and/or publication bias.

What distinguishes a systematic from a narrative review is the higher level of transparency and reduced potential for bias. In a systematic review, methods are made explicit and are open to scrutiny. Strong efforts are made to locate all the available evidence on a given topic. This evidence is systematically accumulated, examined for quality, and assembled into a comprehensive synthesis of the research base. All pertinent studies are included, rejected studies and reasons for their rejection are made public, and sound and unsound studies are differentiated so that the results obtained from a systematic review are often more resistant to selection, publication, and other biases than those of a traditional narrative review (Torgerson, 2003).

Stages of Conducting a Systematic Review: The Campbell Collaboration Format

In general, systematic reviews adhere to the following eight stages (C2; 2010):

1. Formulate review questions

A systematic review should be based on well-constructed review questions. To develop those, it is advisable to break down the general review question into subquestions. This can be done by following the PICO template and specifying Population, Intervention, Comparison, and Outcomes (Schlosser & O'Neil-Pirozzi, 2006; Petticrew & Roberts, 2006).

2. Define inclusion and exclusion criteria

In a high-quality systematic review, inclusion and exclusion criteria need to be stated in detail and be as transparent as possible. These criteria can relate to, for example, the time span of publications, the type of study design to be reviewed, or the relevance to the research question. Essential characteristics of inclusion and exclusion criteria are: (a) they are set a priori, (b) they are explicit, (c) they are applied consistently and strictly, and (d) a log is kept on included as well as excluded studies along with a justification (Torgerson, 2003). Whatever criteria are established, they need to be made public in the final report or article.

3. Locate studies

Based on review questions and inclusion/exclusion criteria the review team can identify what studies need to be retrieved during the literature search. This search usually starts with the use of electronic databases. Because these databases differ regarding what journals are indexed and what indexing terms are utilized, specific search strategies are often necessary for each database. Reviewers are therefore advised to chose the right combination of databases and never rely on only one or two. The final report or article should openly communicate the search strategy, so that another review team may replicate the search.

4. Select studies

During this stage all retrieved references from the literature search are screened to determine which are relevant for later application of the inclusion/exclusion criteria. If it is clear from the title or abstract that an article is irrelevant it can be excluded right away. If there is any doubt, the full text of the study should be screened. Decisions regarding screening and full-text retrieval should involve more than one person. For example, two researchers can read titles and abstracts independently and full-text versions will be collected for all those references that either researcher deems potentially relevant (Littell, Corcoran, & Pillai, 2008). Subsequently, two or more independent raters will apply the inclusion/exclusion criteria to the set of studies that has passed the screening stage. Inter-rater agreement on study inclusion/exclusion should be calculated and reported in the final manuscript.

5. Assess study quality

The methods and results of each study should be critically appraised and this process is termed assessing study quality (Petticrew & Roberts, 2006). The primary aim is to determine whether the study is adequate to answer its underlying research question with the final purpose to distinguish high quality from low quality studies. Many aspects of a study design can affect the final study outcomes. Most important is the aspect of internal validity, that is, the extent to which a study is not distorted by the main methodological biases (such as selection bias, response bias, attrition bias, and observer bias). Several appraisal tools have recently become available to assess the quality of SSEDs (e.g., Logan, Hickman, Harris, & Heriza, 2008; Tate et al., 2008).

6. Extract data

This stage refers to the process of extracting relevant information from each study and is often referred to as study coding (Torgerson, 2003). Study coding involves reading through a study and filling out a data extraction sheet with the appropriate information taken from that study. Creating a coding manual is essential for conducting this process appropriately. The coding manual specifies and describes what study features should be extracted. Before putting the coding manual to use, it should be pilot-tested with several articles and revised accordingly (Wright, Brand, Dunn, & Spindler, 2007). In general, the coding process consists of (a) encoding information about study characteristics (also called study descriptors), and (b) encoding information about the empirical results of the study (also known as effect sizes).

Study descriptors. These can be divided into aspects that represent the phenomenon under investigation, for example, intervention type, instructional format, population being studied;

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and those that represent research methods that are used, for example, particular research designs, measures and procedures.

Effect sizes. Descriptive or other statistical information from primary studies are extrapolated and converted into a standard metric that allows comparing studies. This metric is called an effect size and reflects a statistical measure of the observed intervention effect. Effect sizes can only be calculated if data are available to this extent. For group studies, means and standard deviations of treatment and control group need to be known, and for SSEDs, baseline and intervention data need to be reported and displayed in a format that lends itself to computing special effect size estimates applicable to SSEDs. Group designs and SSEDs have different effect size metrics that cannot be combined at this point (Allison & Gorman, 1993).

Because a reviewer can easily introduce bias when extracting data from primary studies, a second reviewer should re-code at least 20% of the data and inter-rater reliability should be calculated and reported (Schlosser, Wendt, & Sigafoos, 2007).

7. Analyze and present results

The first step during this stage is to provide simple descriptive evaluations of each included study. This is commonly done by creating a table that lists all studies along with the most relevant study descriptors and effect sizes. Tables can include, for example, authors and year, study purposes, target populations, interventions, outcomes, etc. What items are displayed in the table is determined by the initial research question(s). Methodological aspects and study quality assessment can also be included (Wright et al., 2007). Preparing these tables can be helpful in deciding whether or not it makes sense to aggregate results across the entire body of literature and perform the more sophisticated statistical procedures of a meta-analysis. These only make sense if studies are suitable to be pooled. Too much heterogeneity between studies in terms of populations, interventions, outcome measures etc. prevents conducting a meta-analysis because the researcher would be comparing "apples and oranges" (Eysenck, 1978).

8. Interpret results

In the final stage of a systematic review, a balanced answer should be given to initial research question(s). Strengths and weaknesses of included studies must be addressed (Wright et al., 2007), and limitations of the review should be discussed. If a meta-analysis was conducted across studies, it can be easier for the review team to draw inferences about overall effectiveness of the intervention under investigation. When a meta-analysis was not possible, reviewers need to summarize study results based on the strength of individual studies and draw conclusions within these limits. The final goal of this last step in a systematic review is to arrive at conclusions grounded in the best available evidence to facilitate clinical/educational decision-making and to outline further research directions.

Conclusion

Systematic reviews of the research literature are increasingly recognized as a valuable scientific tool to implement EBP. They allow a credible and persuasive evaluation of efficacy of an intervention (Schlosser, 2006). In addition, systematic reviews are an excellent tool to derive future research directions, as they provide data-based documentation of research gaps. The C2 format for conducting a systematic review introduced in this article holds great promise for the ABA field. Using the steps described, ABA researchers can get a first start on performing their own reviews even if they are not formally trained in the methods. This rigorous approach to a critical and thorough evaluation of available evidence elevates the standards previously acceptable for demonstrating the efficacy of an intervention and helps the ABA field to further advance EBP.

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Applications of Evidence-Based Practices and Addressing Research Gaps in Teaching Science to Students with Severe Disabilities

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Across the course of the last four years, our work at UNC Charlotte has focused on identifying evidence-based practices for teaching academic skills to students with severe developmental disabilities. In that timeframe, we have examined evidence-based practices for teaching reading, mathematics, and science to this population (Browder, Ahlgrim-Delzell, Spooner, Mims, & Baker, 2009; Browder, Spooner, Ahlgrim-Delzell, Harris, & Wakeman, 2008; Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006; Courtade, Spooner, & Browder, 2007). In general, determining evidence-based practice requires: identifying a practice; locating research on practice; evaluating the quality of each study; and making determination of whether subset of studies meet quality guidelines to support the practice.

Most of the investigations exploring skill acquisition for students with severe developmental disabilities have used single-subject methodology (McDonnell & O'Neill, 2003; Spooner & Browder, 2003). Because of the predominant use of single-subject designs, we have applied the Horner et al. (2005) criteria for single-subject design research to determine if there is evidence for a given practice (e.g., 20 quality indicators across 7 major areas [participants, setting, dependent variable, independent variable, baseline, results, & social validity] & then examining if there are a sufficient number of studies [5], across investigators [3], geographic regions [3], & participants [20]). We have found, for reading and mathematics, systematic instruction (e.g., logical and organized antecedent prompting strategies, explicit fading strategies) to be an evidence-based practice for teaching these academic skills to this population of students.

Most recently, we have examined the degree to which there is enough evidence for teaching science content to this population by using the Horner et al. (2005) criteria and guidelines for applying criteria developed by the National Secondary Transition Technical Assistance Center's (NSTTAC, 2010; Test et al., 2009) to evaluate evidence-based practice (Spooner, Knight, Browder, Jimenez, & DiBiase, 2010). The NSTTAC guidelines add some specificity and flexibility to the Horner et al. criteria by providing decision rules for conducting a literature review (e.g., separating studies into high quality [studies meet all quality indicators] and **acceptable quality** [studies meet all quality indicators except #2, participant selection; #11, procedural fidelity; and one of #s 17-20, social validity]), and providing strong,

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Example Applications of EBP

moderate, and potential levels of causal inference. Similar to the other reviews, we found systematic instruction as an overarching procedure for teaching science content to this population. A finer grained analysis also suggested support for using task analytic instruction to teach chained skills, and for the use of time delay to teach discrete skills in science.

Collectively, in teaching academic skills to students with severe developmental disabilities, we know the least about teaching science content to this population, as there are simply more investigations in reading (128 experiments, Browder et al., 2006), and mathematics (68 experiments, Browder et al., 2008) than in science (17 experiments, Spooner et al., 2010). In an effort to extend our work in the area of science and to apply effective instructional strategies (e.g., components of systematic instruction), we have conducted additional investigations in teaching science content by using peer-mediated embedded instruction with inquiry science and explicit instruction with supported electronic text programs.

An Application of Evidence-Based Practices

Spooner et al. (2010) suggested the use of systematic instruction to teach science vocabulary to students with severe disabilities. Specifically, they suggested (a) use of time delay to teach science vocabulary terms, (b) students should be taught to identify science concepts using systematic instruction strategies, and (c) future researchers target the instruction of more complex science skills.

Currently, research regarding teaching science to student with severe disabilities is limited, especially in inclusive contexts; however, the number of students with disabilities receiving services in inclusive classrooms is growing (U.S. Department of Education, 2004). Although there is limited research on how to teach academics to students with severe disabilities in the general education classroom, there is a growing research base on how to use peers to implement instruction (e.g., Carter, Cushing, Clark, & Kennedy, 2005; Jameson, McDonnell, Polychronis, & Riesen, 2008). Additionally, there is a growing research base on embedding learning trials in which the target behaviors are taught within the naturally occurring lesson (e.g., Johnson & McDonnell, 2004; Wolery, Anthony, Caldwell, Snyder, & Morgante, 2002).

In response to the need to extend the literature base for teaching science to students with severe disabilities using evidence-based practices, Jimenez (2010) conducted a study examining the effects of peer-mediated time delay instruction to teach science responses and KWHL chart responses during inclusive inquiry science lessons to students with severe intellectual disabilities. A multiple probe design across three science units, with replication across five participants, was used to determine if peer-mediated embedded time delay instruction was an effective strategy in teaching science vocabulary (e.g., kinetic energy), vocabulary picture symbols (e.g., roller coaster to symbolize kinetic energy), science concepts (e.g. Kinetic energy is the energy of motion), and the use of a KWHL graphic organizer (K=what do we Know, W = What do we want to know, H = How will be find out, L=what did we Learn). Five general education middle school peers were trained to implement a constant time delay procedure to embed three instructional trials per dependent variable during each inclusive science lesson with five students with moderate disabilities. Students were taught a total of two vocabulary words, three picture symbols per word (multiple exemplars), and two concept statements per unit of instruction. Finally, students were also taught to self-direct themselves through the inquiry process by using a KWHL chart during inquiry science lessons.

Jimenez (2010) indicated that peers are able to implement with high fidelity, embedded time delay instruction to students with moderate intellectual disabilities. The outcomes also suggested that students with moderate disabilities were able to acquire new science content across units of instruction at the same pace as the general education curriculum occurs. Additionally, to extend the literature using evidence-based practices (i.e., time-delay) for teaching science to this population as outlined by Spooner et al. teachers and students validated peer-mediated embedded instruction as a practical and useful strategy in inclusive education. Finally, this study contributes to the evidence-base for teaching science to this population by adding additional support for peer-mediated instruction and embedded instruction.

Addressing Gaps in the Research

Spooner et al. (2010) recommended the following (a) an overall need for additional research in teaching science to students with severe developmental disabilities, (b) more research specifically on teaching the concepts of science, (c) instruction of more complex science skills in addition to fact-based skills and (d) applications of systematic instruction to cover the breadth and depth of science content. Although not explicitly stated in the Spooner et al. review, additional research also is needed on the use of computer-assisted instruction to promote science skills. A study conducted by Knight (2010) on the effects of supported electronic text on science comprehension by students with Autism Spectrum Disorder (ASD) attempted to address these gaps in the research.

Supported electronic text (eText), or text that has been altered to increase access and provide support to learners, may promote comprehension of more complex science content for students with disabilities. According to CAST, a free, on-line digital authoring tool called Book Builder™, uses supported eText to promote reading for meaning for all students. Technology has been used for over 35 years to instruct students with ASD in academic areas, but to date, this is the only study that evaluated the effects of a supported eText and explicit instruction on science comprehension of middle school students with ASD. Research has shown that effective and explicit instructional strategies have been used to teach reading comprehension to

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students with diverse learning needs, students from diverse language backgrounds, and students from preschool to adulthood (e.g., Adams & Engelmann, 1996; Marchand-Martella, Slocum, & Martella, 2004).

Knight (2010) used a multiple probe across participants design to evaluate the Book Builder™ program on measures of vocabulary, literal comprehension, and application questions. Addressing the need to cover the breadth and depth of science content, as well as complex science skills as recommended by Spooner et al. (2010) examples of science lessons included (a) helpful and harmful bacteria, (b) protists, (c) reproduction of fungi, (d) plant transportation and food production, (e) types of invertebrates, and (f) special characteristics of mammals. Each book was designed to include the supports recommended on the Book Builder™ website (i.e., text to speech, illustrations, embedded coaches [avatars], hyperlinks to vocabulary). In the first phase of the intervention, embedded coaches delivered comprehension strategies recommended by the CAST (2010) website (e.g., summarizing, predicting, questioning). During this phase, only two of the four students made minimal gains. In the second and third phases of the intervention, the embedded coaches delivered comprehension strategies using explicit instruction.

Knight (2010) indicated a functional relation for three of the four students between the Book Builder™ program and explicit instruction (i.e., model-lead-test, examples and non-examples, and referral to the definition) and the number of correct responses on the probe. In addition, students were able to generalize science concepts to untrained exemplars. Finally, addressing the need for formal measures of social validity by Spooner et al.(2010) teachers and students validated the supported eText program using explicit instruction as practical and useful.

Moving Forward with the Evidence

The preceding examples provide emerging support for teaching more complex science content to students with severe disabilities (a) in various educational settings (e.g., general education), (b) using grade-aligned content on a variety of science topics, (c) using peer-delivered embedded instruction, and (d) using computer-assisted instruction. Despite these extensions of the literature on methods for teaching science content to students with severe disabilities, there is still an overall small body of literature on strategies for teaching this content area. Specifically, research is needed that addresses (a) inquiry-based science instruction, (b) generalization of skills learned in inquiry lessons to “real-world” applications, (c) content across grade-levels and bands, and (d) incorporation of strategies to promote self-determination.

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New EBP Resources

The Iris Center: Star Legacy Modules

http://iris.peabody.vanderbilt.edu/fid/chalcycle.htm

The Iris Center is funded through the Office of Special Education Programs with goals to serve college and university faculty who are preparing the next generation of school personnel, including special education professionals, as well as to serve professional development providers who conduct in-service training for practicing educators. One resource provided by the IRIS are Star Legacy Modules that are professional development modules for practitioners. One new Star Legacy Modules is entitled - Fidelity of Implementation: Selecting and Implementing Evidence-based Practices and Programs. The module includes: (a) challenges schools and teachers face in implementation of evidence-based practices and programs; (b) questions related to thoughts about the challenges, perspectives, and resources that help practitioners to identify, select, and monitor fidelity of implementation; (c) methods for selecting high quality activities for professional development; and (d) methods for evaluating quality of professional development training.

Center on Instruction

http://www.centeroninstruction.org/

The Center on Instruction provides a collection of scientifically-based research and information on K-12 instruction in reading, math, science, special education, and English language learning. The Center on Instruction is affiliated with the Comprehensive Center network and is one of five content centers serving as resources for the 16 regional U.S. Department of Education Comprehensive Centers. The Center provides information on research-based topics related to (a) reading, math, science, special education, and English language learning, (b) syntheses of recent research, and (c) exemplars of best practices.

The Florida Center for Reading Research

http://www.fcrr.org/

The Florida Center for Reading Research is jointly administered at Florida State University by the Learning Systems Institute and the College of Arts and Sciences. The Center has four missions, (a) conducting basic research on reading, reading growth, reading assessment, and reading instruction that will contribute to the scientific knowledge of reading and benefit students in Florida and throughout the nation, (b) disseminating information about research-based practices related to literacy instruction and assessment for children in pre-school through 12th grade, (c) conducting applied research that impacts policy and practices related to literacy instruction in Florida, and (c) providing technical assistance to Florida's schools and to the State Department of Education to improve literacy outcomes to all students.

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In Other Sources

Benner, G. J., Nelson, R. J., Ralston, N.C., & Mooney, P. (2010). A meta-analysis of the effects of reading instruction on the reading skills of students with or at risk of behavioral disorders. *Behavioral Disorders*, *35*, 86-102.

The authors conducted a systematic review of the reading literature to determine the level of evidence to support the use of a broad range of instructional programs (e.g., stepping stones, DIBELS) and instructional approaches (e.g., peer-mediated instruction, small group instruction, and one-on-one instruction) with students with behavior disorders. Based on the literature reviewed, the authors concluded that students with BD are responsive to a variety of reading programs and instructional approaches. They also concluded that supplementing classroom instruction with phonological awareness interventions has evidence of improving the reading skills of students with BD. The final conclusion was that although literacy instruction has had positive effects on reading skills of students with behavior disorders, there are limited high quality studies examining the effects of reading interventions for students with behavior disorders. The authors provide suggestions for making literacy research more relevant.

Chorpita, B. F., & Starace, N. K. (2010) Evidence-based practice in the broader context: How can we really use evidence to inform decisions. *Journal of Evidence-Based Practices for Schools*, *11*, 47-61.

The authors described the evidence-based practice decision-making logic and how it fits into the broader context of clinical decision-making. They suggested a model that incorporates evidence-based decision making logic to assist clinicians in making decisions regarding the intervention and supports provided to their clients. Until research defines a model that is best, authors encourage clinicians to explicitly define their decision-making model in order to make informed decisions.

Fixen, D. L., Blasé, K.A., Duda, M., Naoom, S. F., & Van Dyke, M. (2010). Sustainability of evidence-based programs in special education. *Journal of Evidence-Based Practices for Schools*, *11*, 30-46.

The authors discussed ways to sustain evidence-based programs in education. They provided suggestions for selecting programs, implementing practices to reach desired outcomes, and scaling up effective practices to make them available to all students who may benefit. The authors also discussed how to align system structures and functions to support program efforts over time.

Shukla-Mehta, S., Miller, T., & Callahan, K. J. (2010). Evaluating the effectiveness of video instruction on social and communication skills training for children with autism spectrum disorders: A review of the literature. *Focus on Autism and Other Developmental Disabilities*, *25*, 23-36.

The authors conducted a systematic review (i.e., using quality indicators suggested by Odom et al., 2005) of literature using video instruction to teach social and communication skills to determine the level of evidence to support the use of the practice with students with Autism Spectrum Disorder. Based on the literature reviewed, the authors found that the video instruction (i.e., video modeling, video self-modeling, and point-of-view video) does not meet the requirements for being an evidence-based practice for students with ASD. Recommendations for future research are provided.

Sugai, G., & Horner, R. (2010). Schoolwide positive behavior supports: Establishing a continuum of evidence-based practices. *Journal of Evidence-Based Practices for Schools*, *11*, 62-83.

The authors provided a brief history of school-wide positive behavior supports (SWPBS), described some of the defining features such as the integration of data-based decision making, effective practices, and systems support, and present SWPBS as a framework for giving schools the capacity to establish and sustain a continuum of behavior supports for students. Suggestions were provided for how to establish a continuum of behavior supports.

We are currently searching the following journals for evidence-based practices: If you feel there are other journals that need to be included, please contact Dawn Rowe at drowe6@uncc.edu.

- American Journal on Intellectual and Developmental Disability
- Behavior Analyst
- Career Development for Exceptional Individuals
- Exceptional Children
- Focus on Autism and Other Developmental Disabilities
- Intellectual and Developmental Disabilities
- Journal of Applied Behavior Analysis
- Journal of Evidence Based Practices in Schools
- Journal of Learning Disabilities
- Journal of Special Education
- Journal of Vocational Rehabilitation

Other Evidence-Based Practice Efforts

Updated Resources

Best Evidence Encyclopedia (BEE)

http://www.bestevidence.org/index.cfm

The Best Evidence Encyclopedia presents reliable, unbiased reviews of research-proven educational programs to assist policy makers, principals, teachers, and researchers in making informed choices about program development and implementation. BEE has conducted program reviews in the areas of math, reading, and comprehensive school reform. **WHAT'S NEW?** Effective Early Childhood Education Programs is the newest addition to the BEE website. The report systematically reviews research on the outcomes of programs that teach young children in a group setting before they begin kindergarten. The purpose of the review was to assist practitioners and policy makers in selecting the types of early childhood programs to implement and to inform researchers about the current evidence on early childhood programs and guide further research.

Center for Implementing Technology in Education (CITEd)

http://www.cited.org/index.aspx

The Center for Implementing Technology in Education is a national technical assistance center funded by the Office of Special Education Programs. CITEd's purpose is to identify evidence-based practices for incorporating instructional technology to support the achievement of all students. CITEd provides strategies for effective technology implementation to schools and districts, tools to help practitioners meet educational challenges through technology, and provides evidence-based, promising, and emerging practices for incorporating technology into instruction. **WHAT'S NEW?** Lessons Learned for Effective Technology Implementation is the latest addition to the CITEd website. This research in brief provides an overview of CITEd's findings in the literature on technical assistance and professional development.

Council of Administrators of Special Education (CASE)

http://www.casecec.org/index.html

The Council of Administrators of Special Education is an international professional education organization affiliated with the Council for Exceptional Children focused on promoting scientifically-based research practices. CASE's primary purpose is to provide leadership and support to shape policy and practices to improve the quality of education for students with exceptional needs. CASE is in the process of developing a Publication and Product Review Endorsement Rubric to determine the evidence -base for published curricula for students with exceptional needs.

Council for Exceptional Children (CEC)

http://www.cec.sped.org

The Council for Exceptional Children has taken a leadership role in the process for identifying evidence-based practices for students with disabilities. CECs Division of Research has recommended a process for identifying the quality of evidence for specific research methodologies (i.e., group experimental, single-subject, correlational, qualitative) published in Exceptional Children in 2005 (Winter issue). Additionally, the CEC Professional Standards and Practice Committee has developed a comprehensive proposal to select criteria to identify evidence-based practices and develop a process for CEC to use in identifying evidence-based practices.

Doing What Works

http://dww.ed.gov/site/

Doing What Works is sponsored by the U.S. Department of Education and is based on information from IES' What Works Clearinghouse. The website provides examples of ways practitioners might use the evidence-based practices identified by the What Works Clearinghouse. The website is organized by five topic areas, including data-driven improvement, quality teaching, literacy, math and science, comprehensive support, and early childhood. Under each topic area, a list of evidenced-based practices are provided, and each practice includes four components: (a) practice summary, which provides and overview of the practice and issues it addresses; (b) learn what works, which provides information about the research base behind the practice; (c) see how it works, which provides examples of schools using the practice; and (d) do what works, which provides examples of tools teachers can download to improve practice.

National Autism Center

http://www.nationalautismcenter.org/

The National Autism Center is dedicated to serving children and adolescents with Autism Spectrum Disorders (ASD). NAC has developed guidelines and standards for identification of evidence-based practices to help researchers and practitioners make informed choices regarding interventions for students with autism. NAC has completed the National Standards Project that provides a set of standards for effective, research-validated educational and behavioral interventions for children/ adolescents with autism.

National Registry of Evidence-Based Programs and Practices (NREPP)

http://www.nrepp.samhsa.gov/index.asp

The National Registry of Evidence-Based Programs and Practices is a service of the U.S. Department of Health and Human Services Substance Abuse and Mental Health Services Administration. The NREPP website provides a database of evidence-based interventions for prevention and treatment of mental health and substance use disorders. NREPP have developed specific criteria for determining whether a program or practice has an evidence-based. NREPP has currently reviewed 150 interventions and has published intervention summaries on the website for each report that includes descriptive information

Other Evidence-Based Practice Efforts (cont).

about the intervention, targeted outcomes, quality of research and readiness for dissemination ratings, a list of studies and materials submitted for review, and contact information for the intervention developer.

National Secondary Transition Technical Assistance Center (NSTTAC)

http://www.nsttac.org/

The National Secondary Transition Technical Assistance Center helps states build capacity to support and improve transition programs, services, and outcomes for youth with disabilities. NSTTAC has currently identified 33 evidence-based practices in secondary transition for youth with disabilities. NSTTAC offers a variety of products for practitioners to help bridge the research to practice gap, including evidence-based practice descriptions and evidence-based research to practice lesson plan starters. Recently, they have identified evidence-based predictors of post-school success (i.e., employment, education, independent living) based on rigorous correlational research in secondary transition. **WHAT'S NEW?** In-school and Post-school Predictors "Super" Table is the newest addition to NSTTAC's website. As NSTTAC has been disseminating findings from a systematic literature review of in-school predictors of post-school success for secondary students with disabilities, students without disabilities, students at-risk, and students with mental health issues.

Promising Practices Network (PPN)

http://www.promisingpractices.net/

Promising Practices Network provides credible, research-based information on what works to improve the lives of children, youth, and families. Their primary goal is to promote successful implementation of best practices for students with and without disabilities. PPN provides information about effective programs and links to additional research information in all areas related to child well-being. **WHAT'S NEW?** Promising Practices Related to Child Care Quality is new to the Promising Practices Network and includes an informational video about the latest research related to child care quality and implications for policymakers. Additionally, a section of the website has been dedicated to the current status of research on child care quality.

The Campbell Collaboration

http://www.campbellcollaboration.org/

The Campbell Collaboration is an international research network that produces systematic reviews of social interventions in the areas of education, criminal justice, and social welfare. The website includes a library of systematic reviews that have been conducted in the areas of education, criminal justice, and social welfare. Additionally, they developed an Equity Checklist for conducting systematic reviews for authors. **WHAT'S NEW?** Reduction of Bullying in Schools, Self-Control Improvement, Children & Crime, and Does Formal Processing Reduce Juvenile Delinquency? are three new systematic reviews of social interventions.

The National Center for the Dissemination of Disability Research (NCDDR)

http://www.ncddr.org/

The National Center for the Dissemination of Disability Research is funded through National Institute on Disability and Rehabilitation Research (NIDRR). The goal of the NCDDR is to expand production, access, dissemination, and use of disability and rehabilitation research evidence among NIDRR management and grantees, people with disabilities and their families, and disability-oriented professionals, practitioners, and service providers. NCDDR's purpose is to identify standards of evidence addressing rigor and sensitivity of NIDRR-sponsored research, increase the number of systematic reviews to address disability and rehabilitation research topics, increase opportunities for NIDRR-sponsored research to be included in systematic reviews, facilitate access to and use of evidence-based disability and rehabilitation practices, and facilitate access and use of evidence-based disability and rehabilitation practices. **WHAT'S NEW?** The new issue of FOCUS, NIDRR's technical brief, "presents a framework for integrating two distinct processes: knowledge translation (KT) and technology transfer (TT). The integration permits stakeholders involved in technology-based research and development activities to identify and coordinate their respective roles, and to optimize the eventual use of research by industry for production purposes".

The National Professional Development Center on Autism Spectrum Disorders

http://autismpdc.fpg.unc.edu/

The National Professional Development Center on Autism Spectrum Disorders (ASD) promotes the use of evidence-based practice for children and adolescents with autism spectrum disorders. The primary goals of the center are to provide content development (i.e., translating information about evidence-based practices for students with ASD into resources for teachers), professional development (i.e, training to states about evidence-based practices for students with ASD), technical assistance, and (d) evaluation (i.e., collecting data on the use of evidence-based practices, practitioner skill development, outcomes for children and families). The center has currently identified 24 evidence-based practices for individuals with ASD and developed Autism Internet Modules with pre/posttests, contextual information, step-by-step instructions, case examples, video examples, implementation checklist, summary of evidence base, and additional resources.

What Works Clearinghouse (WWC)

http://ies.ed.gov/ncee/wwc/

The What Works Clearinghouse is funded by the Department of Education Institute for Education Sciences. WWC has developed rigorous guidelines for identifying evidence-based practices in order for practitioners to make informed choices. Additionally, they have developed practice guides to provide practitioners with practical recommendations for providing instruction, strategies for overcoming potential roadblocks, and an indication of the strength of evidence supporting the recommendations made. **WHAT'S NEW?** WWC has rated two new studies: (a) READ 180 for students with learning disabilities; and (b) Reading Apprenticeship. Additionally, WWC has two new quick reviews- Efficacy of a Theory-Based Abstinence-Only Intervention Over 24 Months, Head Start Impact Study: Final Report.

We are currently searching website resources for evidence-based practices. If there are other websites that should be included, please contact Valerie Mazzotti at vlmazzot@uncc.edu.

Highlights from ABAI Conference

EBP-SIG Meeting

At the meeting (lead by President Mark Harvey) of the Evidence-Based Practices Special Interest Group, decisions were made about dissemination of the Savage Controversies newsletter that has been sent out electronically three times a year. In December, the EBP-SIG will launch a new website that will take the place of the electronic newsletter. The website will include all of the components of Savage Controversies and more.

Highlights from ABAI Presentations

The conference included more than 10 presentations and 3 workshops related to evidence-based practices. Here are a few highlights from the presentations.

Evidence-Based Practice in Practice Chair: David W. Test (University of North Carolina, Charlotte) Discussant: Timothy A. Slocum (Utah State University) A Framework for Identifying Evidence-Based Practices DAVID W. TEST (University of North Carolina at Charlotte)

This presentation provided information about differentiating between (a) evidence-based practice and evidence-based practices and (b) the need for high quality research to establish evidence-based practices. Additionally, presenters discussed a framework to help guide instructional decision making in the secondary transition planning process to allow practitioners to select, individualize, and adapt evidence-based interventions for secondary students with disabilities. Finally, a list of evidence-based practices identified by the National Secondary Transition Technical Assistance Center (NSTTAC) was provided.

Applying Secondary Transition Evidence-Based Practices and Predictors APRIL L. MUSTIAN (NSTTAC)

This presentation discussed the ways various centers label EBPs and how NSTTAC is moving from labeling practices by DV to labeling by DV AND IV. Presenters also provided (a) information about evidence-based resources developed by NSTTAC and (b) examples of how to use the EBPs and resources to develop IEP goals/objectives and support skill development of secondary students with disabilities. Finally, a list of 16 evidence-based predictors of post-school success to assist school districts and schools in developing, expanding, and evaluating secondary transition programs was discussed.

Using Professional Judgment to Guide Practice VALERIE L. MAZZOTTI (NSTTAC)

This presentation discussed (a) broad definitions of evidence-based, research-based, promising, and emerging practices; and (b) two rating scales to help guide practitioners' decision-making process regarding evidence-based instruction and curriculum for secondary students with disabilities. Additionally, presenters discussed the disconnect between research and practice and offered suggestions about how to bridge the research to practice gap. Based on recommendations by EBP leaders, NSTTAC decided to change the term “emerging practices” to “non-established practices”.

Evidence-Based Practice Within Educational Settings: Establishing Sustainable Teacher Practices Chair: Mark T. Harvey (Florida Institute of Technology) Discussant: Amanda M. VanDerHeyden (Education Research and Consulting, Inc.)

Comparison of Component Versus Whole Module Evidence-Based Training Packages: Effects on Teacher and Student Behavior TERRY D. RYAN (Pinnelas County Schools), Mark T. Harvey (Florida Institute of Technology)

This presentation presented a study that investigated the relative efficacy of two teacher training methods, both of which involved research-based teaching and behavior management techniques. Three teachers were trained on each of eight individual elements using a changing criterion research design; additional elements were added only when a training criterion was met. A second group was trained using a whole module training package, consisting of one 6-hour session, with booster sessions implemented when scores dropped below 50%. A third group received no training and served as an untreated comparison group. Teacher skill acquisition and implementation of identified best practices were monitored as was an acquisition and targeted behavior for a randomly chosen student within each classroom. The repeated measures taken within the self-contained classrooms demonstrated the efficacy of component training over the often used whole module training. Additionally, a functional relation was observed between teacher and student behavior. Based on the study, presenters discussed a model for school districts to use to effectively train teachers on the use of research-based methods which produce greater student achievement.

Performance Feedback in Preservice Training SCOTT WARREN ROSS (University of Oregon)

This presentation described an approach to delivering feedback data critical to the development of efficacious teachers out of the University of Oregon and Utah State University, including a time-based track of opportunities to respond, praise, and response accuracy. An analysis of the approach was provided along with a discussion of potential future directions.

Thoughtful Sustainability: What We Know and What We Still Have to Learn TERI PALMER (Private Practice), Ronnie Detrich (Wing Institute)

This presentation presented literature focusing on defining sustainability, recommendations for selection, and implementation. Finally, presenters discussed successes and challenges.

One Last Thought - The EBP-SIG encourages your membership and participation in the EBP-SIG and any feedback regarding the new website that will be launched in December.