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## Abstract

The aim of the multisite study I am proposing is to investigate the treatment utility of individualized assessment. Specifically, treatment outcomes obtained following matching of interventions to information from individualized assessments will be compared to treatment outcomes obtained following a standard-protocol approach to intervention. Within the individualized intervention condition, targets for assessment will be predispositions specified to match the situational demands of second grade reading standards. Individualized intervention will be assigned if a student scores at least one standard deviation below the mean on a measure of these predispositions. In order to bolster the integrity of intervention, the same research-based interventions will be selected for each child who scores at least one standard deviation below the mean on a given predisposition. The context of this study will be at least two cooperating school districts, with at least 60 students randomly assigned to standard-protocol or individualized intervention conditions.

## **Personal Research Agenda**

**Nicholas Benson, Ph.D.**

My three to five year goal is to synthesize three distinct yet interrelated components of my scholarly interest and expertise into an assessment framework useful for promoting the academic, social, and physical development of children. The objective of the first component is to identify environmental factors, traits, and attributes that can be targeted for assessment because they facilitate or hinder children's education, health, and participation in society. The objective of the second component is to study the internal and external validity of tests that may be useful for the purposes of understanding current functioning as well as promoting education, health, and participation in society. Finally, the third component focuses on examining the extent to which assessment data contributes to the effectiveness of interventions. I view these three components as interrelated because the first two components are prerequisites for determining the extent to which assessment procedures improve treatment outcomes (i.e., treatment utility; Hayes, Nelson, & Jarrett, 1987).

### *First Component*

Children and adolescents possess characteristics that affect the extent to which they meet situational demands. Thus, their capacities to carry out activities as well as the extent to which they actually perform activities are affected not only by environmental conditions but also by a wide range of attributes and traits. If situational demands exceed an individual's skill capacity or do not support performance of the activity functional impairments may occur. However, functional impairments may be circumvented if sufficient environmental modifications or accommodations are in place.

My past and current work in this first component has focused on understanding how specific cognitive abilities affect performance with reading (Benson, 2008a) and math tasks (Benson & Moseley, in progress). The intent of this research has been to provide a link between cognitive test scores and performance of reading and math skills. My future plans include investigating the role of traits such as temperament, mood, and self-regulation in academic and social outcomes and identifying environmental supports that may improve goal setting as well as the ability to overcome obstacles and reach intended goals.

### *Second Component*

Assessment of psychological and educational phenomena requires tests and procedures that have been demonstrated to be appropriate for intended purposes. Thus, as long as such assessment is practiced it will be important to study the internal and external validity of tests and other assessment procedures. Moreover, due to increased international interest in these tests and assessment procedures it is becoming increasingly important to examine the appropriateness of using tests in countries other than those in which they were developed. My research (Benson, Oakland, & Shermis, in press) has focused on examining the cross-national construct equivalence of a children's temperament scale. I intend to engage in future research aimed at investigating the internal and external validity of tests and assessment procedures.

### *Third Component*

The benefits of traditional assessment practices within school settings have been questioned (e.g., Reschly, 2008) because a clear link between data obtained from traditional, individualized assessments and treatment outcomes has not been established. Responsiveness to evidence-based instruction and interventions may be an effective means of allocating intervention services. However, evidence-based instruction and intervention only helps improve

the probability of success. Additional research is needed to determine if gathering of assessment data to identify within-person or environmental factors that may cause or maintain problems, facilitate treatment, or hinder treatment improves outcomes relative to matching specific problems or symptoms to specific interventions without consideration of unique within-person or environmental factors (Braden & Kratochwill, 1997).

My work in this component focuses on expanding the extent to which assessments consider within-person characteristics in the context of environmental factors and situational demands. I recently completed a book chapter (Benson, 2008b) describing types of tests and assessments used in rehabilitation and health settings. This chapter focuses on matching selection of tests and assessment to the *International Classification of Functioning, Disability and Health (ICF)* model that considers both the integrity of body structures and functional systems that sustain life and enable human behaviour and environmental factors that may facilitate or hinder performance of activities and participation in society.

Recently, I have begun collaborating with others to develop a paper describing potential implications of the ICF on the future development and use of standardized, individualized clinical and diagnostic tests. My future plans involve studying the extent to which tests and assessment procedures have treatment utility. It is my belief that aligning tests and assessment procedures to the ICF model will ultimately improve their treatment utility.

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## **Research Proposal-Nicholas Benson**

The aim of the multisite study I am proposing is to investigate the treatment utility of individualized assessment. Specifically, treatment outcomes obtained following matching of interventions to information from individualized assessments will be compared to treatment outcomes obtained following a standard-protocol approach to intervention. Standard-protocol interventions involve using the same evidence-based treatment for all children with similar symptoms (Fuchs, Mock, Morgan, & Young, 2003). Although the benefits of individualized assessment for a myriad of problems could be studied, I propose that reading problems in second graders would be a good focus due to the commonplace of screening and intervention efforts aimed at reading problems within this population. The lowest 15th percentile of students identified using oral reading fluency screenings would be randomly assigned to standard-protocol or individualized intervention groups for a duration of nine weeks.

The standard-protocol and individualized intervention groups would receive the same evidence-based intervention aimed at the specific academic deficit (this specific academic deficit will be identified during the screening process); however, the individualized intervention group would receive additional interventions matched to specific assessment findings. The rationale for providing the same evidence-based intervention under experimental and control conditions is to control between group differences in treatment outcomes that likely would occur as a function of between group variation of the interventions used to address specific academic deficits identified via curriculum-based screenings.

I am proposing that Fluency Formula (Scholastic) be the standard-protocol intervention utilized in the proposed study because a) reading fluency is addressed directly and b) the effectiveness of this intervention for increasing reading fluency is supported by evidence

reviewed and summarized on the What Works Clearinghouse website. Within the individualized intervention condition, targets for assessment will be predispositions specified to match the situational demands of second grade reading standards. Individualized intervention will be assigned if a student scores at least one standard deviation below the mean on a measure of these predispositions. In order to bolster the integrity of intervention, the same research-based interventions will be selected for each child who scores at least one standard deviation below the mean on a given predisposition. By restricting the number of interventions used in this study it will be feasible to develop measures of treatment integrity for each intervention. If a child scores at least one standard deviation below the mean on several predispositions they will be assigned an intervention that addresses each respective predisposition in which a deficit was observed. The predispositions that will be assessed in the present study fall into the conative triad delineated by Richard Snow: cognitive abilities, affect, and self-regulation.

Cognitive abilities affect the ability to perform reading tasks accurately and efficiently. Auditory processing (Ga) affects reading decoding (Floyd, Keith, Taub, & McGrew, 2007) and crystallized intelligence (Gc) affects reading comprehension (Benson, 2007). Consequently, in the individualized intervention condition these specific cognitive abilities (i.e., Ga and Gc) will be measured using select subtests from the WJ-II Tests of Cognitive Abilities (Woodcock, McGrew, & Mather, 2001) and matched with evidence-based interventions as needed. Students with Ga deficits will receive Stepping Stones to Literacy (SSL; Sopris West) intervention aimed at developing phonemic awareness, print awareness, and orthographic skills. Students with Gc deficits will be receive Start Making a Reader Today (SMART; Oregon Children's Foundation) intervention aimed at increasing reading comprehension skills.

As affect impacts attention and consequently affects learning (Schwarz & Bohner, 1996), positive affect, negative affect, and anxiety will be measured using the Positive and Negative Affect Schedule-Expanded Form (PANAS-X; Watson & Clark, 1994) and matched with evidence-based intervention as needed. In the proposed study, the intervention will be weekly cognitive-behavior therapy sessions. Self-regulation of behavior facilitates investment of effort, persistence in response to hurdles or past failures, and selection of strategies for maintaining progress toward academic goals (Snow, Corno, & Jackson, 1996). As learning to read requires attention and effort self-regulation, a brief scale will be developed to measure the aforementioned dimensions of self-regulation most likely to influence reading achievement. Applied behavior analysis will be used to address problems with self-regulation, including use of functional analysis to identify the functions of undesirable behaviors that will be replaced by functionally equivalent behaviors compatible with progress toward academic goals. Additionally, students with self-regulation problems will be provided with frequent external prompts and will receive frequent feedback and contingent consequences for progress toward short-term objectives.

The context of this study will be at least two cooperating school districts, with at least 60 students randomly assigned to standard-protocol or individualized intervention conditions. The estimated expenses include the time and effort of two to three primary investigators, with funding for at least six graduate assistants to provide individualized assessments and interventions. The advantages of using a multisite model including minimizing costs at each site and obtaining broader samples of children than would be possible with a single site study. The primary challenge would be obtaining funding for graduate assistants plus materials for assessment and intervention.

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