

School Psychology Research Collaboration Conference

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Personal Research Agenda

My research agenda currently focuses primarily on Gickling's model of curriculum-based assessment (CBA) and its use for educational interventions. As school psychology continues the evolution to a more consultative field, the tools of the trade must be reformed as well. However, school psychology scholars need to link the innovations to research and accepted psychometric standards. Although my passion lies in the study of improving instruction, it is first necessary to establish the basic psychometric characteristics of the tools, which is why my publications include analyses of CBA's psychometric properties. Having essentially completed the basis for future study, I have now begun addressing the potential studies listed below.

It may seem at first glance that my publication list includes various topics. However, Burns (in press a; b; 2001), Burns, Tucker, Frame, Foley, and Hauser (2000), and Burns, MacQuarrie, and Campbell (1999) all directly address CBA. Burns, Tucker, Hauser, Thelen, Holmes, and White (2000) examines a potential criterion to which CBA and curriculum-based measurement data can be compared, MacQuarrie-Klender, Tucker, Burns, and Hartman (2002) compares different drill ratios in attempt to refine the instructional level for drill tasks, and I recently completed a meta-analytic comparison of different drill ratios. Furthermore, the Burns (1999) and Burns and Symington (in press) articles attempt to support the need for consultative approach, of which CBA is a basic tool.

I have an active research agenda that I intend to forward extensively over the next 3 to 5 years. Some of the specific topics I will investigate include 1) the validity of measuring acquisition rates with CBA as demonstrated by improved instructional practice, 2) comparison of acquisition rates between students with learning disabilities in reading, garden variety poor readers, and general education students, 3) teaching at the instructional level as an intervention

and resistance to treatment diagnostic model for students with a high-incidence disability (learning disability, emotional/behavioral disorder, and mild mental impairment) 4) domain specificity of acquisition rates, 5) relationship between acquisition rates and intelligence, and 6) reliability of CBA for various subject areas.

Recent and proposed changes in federal special education legislation de-emphasize diagnosis in favor of involvement in the general curriculum. CBA is an assessment model designed to use the curriculum as a measure in order to foster involvement in the general curriculum. Furthermore, several have argued that CBA is a crucial tool to the consultative process. Therefore, CBA has the potential to greatly impact school psychology as the field continues its evolution to a more consultative and intervention-oriented model. However, research regarding CBA and its uses is limited.

Using Acquisition Rates as Measured by Curriculum-based
Assessment to Improve Instruction for Reading: Evidence for Validity

Abstract

With the changing views of student disabilities, special education, and validity of test data, additional research is needed that more closely links assessment and effective academic intervention. Gickling's model of curriculum-based assessment includes a two-dimensional model of the instructional level, or the appropriate level of challenge. In order to provide an optimal learning experience for reading, children have to be provided with material that contains 93% to 96% known words, and the amount of new words introduced and learned cannot exceed each individual child's capacity. The proposed study would examine the validity of this model by teaching children identified with a learning disability in reading using both aspects of the instructional level. Fifteen third- and fourth-grade students identified with a reading disability will be assessed with Gickling's CBA model, using the general education grade-appropriate curriculum, and will be observed three times for task relevant behavior during reading instruction to establish a baseline. A second group of 15 students will also be observed and assessed to serve as a control group. Both groups would receive reading remediation in a special education setting, but would participate in general education reading instruction as well. It is hoped that all 30 students will be from two elementary buildings with an approximate equal representation from both buildings in the control and treatment groups. Next, students from the treatment group will be taught the unknown words from his or her reading curriculum each morning for 3 weeks. However, the number of words taught in these session, will be determined by the child's individual acquisition rate, as measured with CBA. The control group will be taught 10 new

words each day from the grade appropriate reading curriculum. Both groups will be observed during reading instruction three times each week (total of nine). At the end of 3 weeks, student reading rates and percentage of known words will again be assessed using CBA. Within-group analyses will be conducted for the treatment group using reading rates, accuracy percentages, and time engaged in task relevant behavior as the dependent variables. Between-group analyses will also be conducted for the treatment and control groups using those same three variables.

Collaborative Multi-site Research Program

My personal research agenda would benefit greatly from a multi-site collaborate effort, as would most research programs. I believe the best way to improve research skills is to conduct research and to collaborate with a more experienced scientist. Therefore, collaboration with a senior researcher is an exciting opportunity. Listed below are the aforementioned research questions and how a multi-site collaboration would impact each one.

1. *Validity of measuring acquisition rates with CBA as demonstrated by improved instructional practice*

Simply stated, this would have to be conducted within an elementary school setting to improve external validity. Much of my research to this date has been basic research with a high-level of control. Although this is important to establish the foundation of the construct, we must now move to a more applied approach. I foresee this being at least three studies, one that addresses sight-word retention and generalization, one that uses basic mathematics multiplication facts, and one that addresses spelling. I would like a participant pool of 20 to 30 children from one grade for each study. Costs would be relatively minimal, probably between \$500 and \$1,000 for each study, and would include incentives, supplies, and copying costs. A collaborative approach would be beneficial because multi-sites will be needed to generate an adequate participant pool. Secondly, a participant pool that was taken from more than one geographic area also increases external validity. Furthermore, a collaborative approach may allow more graduate student assistance in the study, which would benefit future practitioners and researchers

by practicing a potentially useful instructional and consultative tool. A multi-site approach may create interrater questions, but those can be easily addressed.

2. *Comparison of acquisition rates between students with learning disabilities in reading, garden-variety poor readers, and general education students.*

A large number of participants would be needed for this study, which may or may not take place in a school setting. However, we would need school records to identify each participant as LD, GV reader, or general education student. This again would be a relatively inexpensive study to conduct, probably less than \$500. A multi-site approach is, once again, crucial because of the required sample size, external validity, and varying definitions of LD. Use of graduate students may also be a benefit to future practitioners and scientists.

3. *Teaching at the instructional level as an intervention and resistance to treatment diagnostic model for students diagnosed with a learning disability*

I foresee this study to have a small sample and would probably take place in one school. Therefore, although a multi-site approach might improve external validity, I am not sure enough sites could feasibly be included to significantly affect the generalizability of the results and would be quite costly to implement.

4. *Relationship between acquisition rates and intelligence*

This study would again require a large participant pool, and would require school data from an elementary school that conducts group testing of ability (such as the *Otis-Lennon School Ability Test*). The research design would be fairly simple, and costs would be limited to approximately \$500. A multi-site approach is required to obtain a sufficient sample size and to assure valid results. Furthermore, this study could easily be expanded

to include children with high-incidence disabilities, which could be conducted by a research partner.

5. *Reliability of CBA for various subject areas*

These would be simple studies that require several K-12 school buildings. At least 30 to 50 participants for each grade would be necessary, and representation from more than one geographic region would be important. Costs for these studies would be less than \$500, if graduate students were available to help collect data. Furthermore, graduate students may benefit from assisting in these studies by gaining experience in CBA, conducting applied research, and expanding their knowledge of psychometric issues.

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