

Title: The Center for Educational Measurement and Evaluation

Participating Department: Educational Leadership

Participating Disciplines: Educational Leadership
Educational Research, Measurement, and Evaluation

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Target Category: Existing and Emerging Excellence

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Executive Summary

UNC Charlotte is committed to becoming a nationally recognized urban research university with a rich variety of engaging and lasting community partnerships. The Center for Educational Measurement and Evaluation (CEME) seeks to form such partnerships by providing the program evaluation and educational measurement expertise of our faculty and doctoral students to a wide range of community partners. This brief overview will demonstrate that CEME has been successful in fulfilling this mission and is uniquely poised to leverage our research methodology expertise in support of UNC Charlotte's plan to become a high quality research institution.

As UNC Charlotte moves toward R1 status, and seeks to build the research support infrastructure to sustain high levels of research productivity, CEME is committed to support this process in three critical ways. First, CEME will continue to engage in meaningful externally funded community engagement research with local, statewide, and national impact. Second, CEME will collaborate with faculty and researchers who are experts in the leadership of early childhood education programs (Shore, Vestal) to expand our funding base of community engagement projects that serve young children. Third, CEME hopes to expand its mission to provide evaluation and measurement expertise to social scientists and STEM education researchers across campus.

R1 institutions offer social science methodology support to their faculty through funded research support centers such as CEME. Since creating the Educational Research, Measurement, and Evaluation (ERME) Ph.D. program, the Cato College of Education has hired highly qualified expert research methodology faculty members for the ERME program (Westine, Kim, and Cox). In their short residencies, each of these scholars has already demonstrated success in advancing the research productivity of their colleagues through methodological research support, technical assistance workshops, and collaborative efforts to achieve funding. ERME faculty specialize in admitting doctoral students with unique professional experiences in education and then developing their social science methodological skills. By concentrating these efforts through CEME, it is possible to leverage this faculty expertise to support the broader college and university missions through the consulting work of CEME doctoral students and faculty. CEME currently supports two ERME doctoral graduate assistants and two unpaid ERME research interns. With minimal university investment in the form of funded ERME doctoral research interns, and structured mechanisms to offer ERME research methodology faculty reduced teaching loads, CEME can provide dedicated research methodology support to university faculty, and support faculty grant writing by contributing state-of-the-art research and evaluation sections for grant proposals.

CEME already has direct experience in this role. CEME has been funded by the Institute of Education Sciences (IES) and has served as research methodology consultants for several additional IES grants. In addition, CEME has collaborated in this capacity with the Center for Science, Technology, Engineering, and Mathematics (STEM) Education, the Bioinformatics Research Center (BRC), and STEM education researchers across campus to submit grants to the National Science Foundation and the National Institutes of Health. To reach R1 status, UNC Charlotte faculty need the resources to be consistently competitive for federal funding, and competitive proposals require rigorous research and evaluation plans. Specifically, the Institute of Education Sciences (IES) requires applicants to *"apply rigorous, systematic, and objective methodology to obtain reliable and valid knowledge relevant to education activities and programs."* Similarly, the National Science Foundation (NSF) states, *"meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics."* These standards apply to **all** proposals, **independent of content area or funding priority**. We will demonstrate how our group of researchers and research methodology experts is uniquely qualified to contribute the evaluation designs, sampling plans, measurement development and validation, statistical power calculations, and analytical plans UNC Charlotte faculty need to produce both high quality scholarly products and competitive proposals for external funding.

Evidence of Strength and Excellence

CEME received 12 grants over the past five years totaling \$14,119,903. These grants help CEME fulfill its mission of community engagement by sharing university expertise in educational evaluation and educational measurement with school systems and community agencies. In this brief summary, we highlight a few examples of the local, state, and national impact CEME has on teachers, children, and educational policy.

With funding from the North Carolina Department of Public Instruction (NCDPI), CEME conducted validation and implementation fidelity research on the North Carolina Kindergarten Entry Assessment, a measure used by over 5,000 teachers each year to assess all NC incoming kindergarten children (Lambert, 2020a; Holcomb, Li, Ferrara, & Lambert, 2020; Ferrara, Lambert, & Holcomb, 2020; Lambert, 2018). CEME has also conducted extensive development and validation research on the most widely used authentic formative assessment measure for young children in the nation, *Teaching Strategies GOLD* (Lambert, 2020b; Kim, Lambert, Durham, & Burts, 2018; Kim, Lambert, & Burts, 2018; Lambert, Kim, Durham, & Burts, 2017; Kim, Lambert, & Burts, 2016; Lambert, Kim, & Burts, 2015). CEME developed the technical manual for the *GOLD* measure and distributes it through our online technical report series. *GOLD* is used to assess over 2,000,000 children nationally each year and has been adopted for some form of statewide use by the majority of all states in the U.S. For example, each academic year children in the North Carolina Pre-Kindergarten program (NCPK) (over 28,000 children) and kindergarten children in North Carolina public schools (over 105,000 children) are assessed using *GOLD*.

Our staff of 35 faculty, evaluators, and doctoral students provide performance evaluation, mentoring, and professional development services to over 400 NC early childhood educators each year through grants from the North Carolina Department of Health and Human Services (NCDHHS). In addition, with county funding we provide similar services to over 90 teachers in the Mecklenburg County pre-kindergarten program. In collaboration with colleagues from East Carolina University, CEME operates the NC Early Educator Support program and has been delegated the authority of a local education agency (LEA). It is extremely rare, if not unprecedented, for a university research center to be recognized in this way by its state education agency. Through a grant from the North Carolina Department of Public Instruction (NCDPI), CEME created the Prekindergarten / Kindergarten Teacher Performance Appraisal Instrument (PKKTPAI). The North Carolina State Board of Education (NSCBE) approved the measure and accompanying manual for statewide use. The PKKTPAI was used to conduct teacher performance evaluations across NC. CEME provided training for school administrators, program directors, and evaluators throughout the state on use of the instrument and accompanying manual.

When NCDPI adopted a new performance appraisal strategy called the North Carolina Teacher Evaluation Process (NCTEP), they funded CEME to develop a manual for school administrators, program directors, and evaluators on the proper use of the NCTEP with birth-through-kindergarten (BK) licensed teachers. Effective practices in their classrooms can often appear to the untrained observer as quite different from practices found in classrooms for older children. BK teachers focus on development and learning across multiple domains, and are not preparing their students for traditional summative measures of student achievement. The manual provides administrators with specific examples of teacher behaviors, child behaviors, classroom conditions, and artifacts encountered by evaluators in classrooms, along with a clear alignment between evidence and placements on the rubric. The NCSBE approved this manual for use in every school system in the state. CEME provides school administrators, program directors, and evaluators throughout the state with training regarding appropriate performance evaluation strategies for use with BK licensed teachers. NCDHHS funded CEME in 2017 to create an updated manual. The updated version includes new and expanded examples from real classroom situations, an updated

alignment between evidences and placements on the NCTEP rubric, and expanded guidance for evaluators (de Kort-Young, A., Lambert, R., Rowland, B., Vestal, A., & Ward, 2017). While not a traditional scholarly product, the manual demonstrates the unique reach CEME has into every county in NC. This direct influence is particularly important as traditional academic literature (e.g., educational research journal articles) often has a delayed or muted influence on educational practice.

Currently, CEME is funded by NCDHHS to conduct critically important and very innovative studies of inter-rater reliability within the NCTEP. This research is the first such study in NC and one of the first studies of its kind nationally. NCTEP is used to make high stakes decisions concerning over 100,000 teachers every year (U.S. Department of Education, 2021). However, research on the process of teacher evaluation in general, and the early childhood workforce in particular, is very rare. No existing studies have examined the reliability, validity, cultural sensitivity, or fairness of ratings given to NC teachers by their principals and evaluators.

If evaluator ratings are used to hire, promote, or even dismiss teachers, more research is needed to support the validity of such measures for high stakes decision making (Harris, Ingle, & Rutledge, 2014). Furthermore, teachers are rightfully concerned about rater strictness, leniency, and idiosyncratic interpretations or biases (Graham, Milanowski, Miller, 2012). The NCTEP, like most teacher performance evaluation systems, relies on evaluator ratings to document levels of teacher quality. Such systems measure quality through a “rater-mediated assessment” process (Engelhard, 2013; Engelhard & Wind, 2018). Raters analyze observational information and filter it through a complex internal judgement process to arrive at placements on a rubric that outlines a progression of quality performance. Engelhard and Wind (2018) have argued that a detailed understanding of the processes by which rubrics elicit responses from raters, and the ongoing monitoring of rater leniency, severity, and bias are necessary to demonstrate that a rater-mediated assessment system can produce data that is invariant across raters. CEME has created a system through which evaluators rate a series of online teacher profiles to achieve inter-rater reliability certification. Using data from this system, CEME calibrated the strictness and leniency of evaluators, examined the validity of ratings including an examination of potential racial bias in the rating process, and developed new statistical methodology to document rater effectiveness.

These selected examples demonstrate that CEME has been very successful in fulfilling its mission to provide evaluation and measurement expertise to agencies in the community and throughout the state. CEME has a strong reputation in NC for high quality evaluation and measurement services, and has a national reach in the area of authentic formative assessment for young children. CEME is committed to continuing its mission of community engagement by sharing its expertise in evaluation and measurement methodology in service to professional educators locally, statewide, and nationally. With additional resources, we hope to expand our mission to include providing methodology advice to social science researchers at UNC Charlotte and collaborating with them to write the research and evaluation plans for their grant proposals. Our faculty are already very engaged in this type of support activity. For example, Dr. Westine regularly supports STEM education faculty with evaluation plans for their grant proposals. He is a research affiliate for the UNC system Student Success Innovation Laboratory, where he is studying the effectiveness of the Learning Assistant program at East Carolina University. He is also Co-PI for the *Studying Successful Doctoral Students in Mathematics from Underrepresented Groups* project funded by the National Science Foundation (#1920753), and the evaluator for the NCDPI State Systemic Improvement Plan. Dr. Kim has served as research methodology consultant for current grant proposals submitted to IES and NSF. Dr. Lambert serves as project statistician for a funded project from IES. These examples demonstrate how providing resources to CEME faculty and doctoral students to offer methodology support formally to the UNC Charlotte community will help construct the research infrastructure our university needs to reach R1 status.

Research Team

Name	Title	Contribution	Expertise
Richard Lambert	Professor, Director	Lead Applicant	Formative Assessment Teacher Performance Evaluation Teacher Stress and Coping Survey Research Methods
Carl Westine	Assistant Professor	Researcher	Program Evaluation Statistical Power STEM Education
Stella Kim	Assistant Professor	Researcher	Educational Testing Measurement Theory
Kyle Cox	Assistant Professor	Researcher	Multilevel Modeling Structural Equation Modeling
Rebecca Shore	Associate Professor	Researcher	Educational Leadership Early Childhood Education
Amanda Vestal	Project Coordinator	Research Staff	Early Childhood Special Education Teacher Performance Evaluation