WELCOME, EVERYONE!

Welcome to the inaugural College of Education Research Forum! In July 2016, we became a standalone College of Education, and today we celebrate our first year with our first College of Education Research Forum.

The goal of the Research Forum is to highlight the important and nationally recognized research that we are conducting in the College – research that promotes the vision of the College of Education and supports the research priorities of ClemsonForward. We hope that the posters that we present here will suggest new areas of research study for faculty and graduate students. Further, we hope that the projects that we highlight will lead to new collaborations both within the College of Education and across the Clemson campus.

Thank you for being here. Please be sure to stay for our presentation of graduate awards at 12:30; we are privileged to be able to recognize the outstanding research, teaching and service of our doctoral and masters-level students.

David E. Barrett
Associate Dean of Academic Affairs and Research

MESSAGE FROM THE DEAN

Thank you for your participation in the College of Education Research Forum. Faculty and graduate students, we appreciate your continued commitment to inquiry and discovery, and we are proud of your scholarly contributions. Clemson colleagues and visitors, we are delighted that you are having the opportunity to learn more about the exciting research being conducted in our College and to talk with our presenters about their work.

The College of Education is dedicated to enhancing the education and development of all people, particularly those in underserved communities. While our focus is on the organization of schools and the delivery of instruction, you will see at today’s forum that we address many other issues related to the overall health and development of children and communities including teacher and counselor education, institutional practices, and educational policy. Our mission as a College is to strive for excellence and to become “Best in Class.” Through our research, teaching and service, we are making a difference and moving the needle in the social and economic development of our local communities, our state, and our union.

Sincerely,

George J. Petersen
Founding Dean
Wednesday, April 12, 2017

AGENDA

8:30 a.m. – 10:00 a.m. SET-UP FOR POSTER PRESENTATIONS

11:00 a.m. – 1:00 p.m. ATTENDEE CHECK-IN, POSTER PRESENTATIONS AND REFRESHMENTS (Begin Viewing Posters)
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11:30 a.m. – 12:00 p.m. WELCOMING REMARKS
Hendrix Student Center Ballroom A

David E. Barrett
Associate Dean for Academic Affairs and Research, College of Education

George J. Petersen
Founding Dean, College of Education

Robert H. Jones
Provost, Clemson University

Tanju Karanfil
Vice President for Research, Clemson University

12:30 p.m. – 1:00 p.m. GRADUATE STUDENT AWARDS OF EXCELLENCE
Hendrix Student Center Ballroom A

George J. Petersen
Founding Dean, College of Education

Thank you for your participation in the 2017 College of Education Research Forum.
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*A Comparison of STEM vs. Non-STEM Majors as Career Changer Teachers in the Middle School Math and Science Classroom*

Michelle Popham, Jennifer Counts, Joseph Ryan, Antonis Katsiyannis

*A Systematic Review of Self-Regulated Strategies to Improve Academic Outcomes of Students with EBD*

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*An Exploration of Adolescent Girls’ Perspectives of Childhood Obesity through Photovoice: A Call for Counselor Advocacy*

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*A Multi-Tiered Evaluation of Adolescent Therapeutic Group Homes*

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*Staff and Faculty Perceptions of Title IX Related to LGB Students Enrolled at Clemson University*

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   Producing Our History Clips© Through the Use of Disciplinary Literacy Skills
Little research has examined the role student services staff members play in creating a culture of inclusivity through the use of universal design; research focuses primarily on faculty use of universal design and the academic and campus experiences of students with disabilities. Researchers developed, distributed, and analyzed a likert-scale survey examining how principles of universal design are used by university personnel at a large, public university. University personnel in this study were defined as Student Affairs and Non-Faculty Academic Affairs staff, who self-identified in a student support role. The survey was administered to a random sample of 850 university personnel, with 114 personnel responding and identifying in a student support role. The importance of this research is the creation of an assessment tool applicable to colleges and universities to evaluate their support of all students through universal design practices.
Juvenile Delinquency and Recidivism: A Multi-Cohort Analysis

We examined the role of early adverse experiences, mental health problems and school-related disabilities in the prediction of juvenile delinquency and recidivism. The delinquent group comprised 99,602 youth, born between 1981 and 1988, whose cases had been processed by the South Carolina Department of Juvenile Justice. Records of 99,602 controls matched by age, race and gender were drawn from the records of the South Carolina Department of Education. Data on Child Protective Services (CPS), foster care, mental health diagnoses, and eligibility for free/reduced lunch were obtained from the South Carolina Budget and Control Board. Logistic regression analyses showed that CPS, foster care, a learning disability or emotional/behavioral disorder, free/reduced lunch, and a mental health diagnosis relating to aggressive behavior made unique contributions to the prediction of membership in the delinquent group. Analyses conducted on the delinquent sample to predict recidivism showed a similar pattern. Effects of prosecution on recidivism depended on offense severity and pre-delinquent history. Race differences in probabilities of prosecution and incarceration were identified, with results dependent on several moderating variables. Findings have been published in *Journal of Emotional and Behavioral Disorders, Remedial and Special Education*, and *Journal of Child and Family Studies*, among other journals.
Reading Recovery: Exploring the Effects on First Graders’ Reading Motivation and Achievement

This study examined the effects of Reading Recovery, an early literacy intervention, on children’s motivational levels, and how motivation may contribute to the effect of the intervention on literacy achievement. Prior studies concluded that Reading Recovery was positively associated with increased student motivation levels, but most of the studies were limited methodologically. To address the limitations, achievement and motivation levels before and after the intervention of Reading Recovery students (n = 1,334) and similarly low-performing first-grade students (n = 472) were compared using structural equation modeling. It was found that Reading Recovery had a .31 treatment effect on achievement after controlling for baseline achievement and motivational differences among the treatment and comparison students. Reading Recovery was also associated with greater average levels of posttest motivation, and motivation was found to mediate the treatment-achievement relationship. This study highlights how important it is for early reading interventions to consider the role motivation plays in literacy acquisition. The study was recently published in the Journal of Education for Students Placed at Risk.
Litigation and Students With Disabilities: An Overview of Cases From 2015

Special education is the most highly litigated area within the field of education. Therefore, the purpose of the current poster is to highlight cases (court decisions, Office of Civil Rights rulings, and State Educational Agency hearings) involving students with disabilities in 2015. Cases for review were located by conducting a hand search of the Decisions and Guidance sections of *The Special Educator* journal published during 2015. *The Special Educator* provides the latest special education case law and trends affecting the way students with disabilities are served. Highlights from the case law point to the need for school districts to ensure that students with disabilities are provided free appropriate public education, ensure timely and comprehensive evaluations once a suspected disability is of concern, ensure that students with autism have access to a range of services, provide evidence in factors considered when determining placement, remove students only when they present imminent threat to self or others, and appropriately address bullying/harassment instances. The study findings were published in *National Association of Secondary School Principals* (NASSP) *Bulletin* 2016.
The State of Belonging: The Impact of Out of State Status on First Year Students’ Sense of Belonging

Sense of belonging is widely studied among college students, but there is a gap in the literature on how sense of belonging is impacted by out of state status in the first year experience of college. The purpose of this study is to investigate and describe the relationship between out of state status and students’ sense of belonging to their current institution. To conduct this research, we used quantitative data collected from out of state, first year students in their second semester at a large, public, land-grant university in the Southeast. This research will benefit student affairs practitioners who work with programming to support out of state students and other individuals who interact with out of state students in their work.

*Keywords*: first year, sense of belonging, out of state, quantitative
A Grounded Theory Investigation of Tenured, Women of Color Faculty at Predominantly White, Public, Research Institutions in the Southeastern United States

Faculty evaluation processes that lead to tenure and promotion are biased against Women of Color (WOC) and impact their persistence in their positions, limiting their retention and reducing diversity in departments across discipline. The purpose of this study is to explore the experiences of successfully tenured, WOC faculty in order to isolate the institutional structures and climates that supported or hampered their success.

Using constructivist grounded theory methods, findings inform a new theory describing the roles of individual characteristics, institutional structures and climates, and societal systems of oppression and privilege in the success of WOC faculty at predominantly White, public, research institutions. Data from 23 participants was collected through semi-structured interviews and written reflections. Findings indicate that WOC faculty members utilize various forms of community cultural wealth and coping strategies to persist in the tenure process within environments influenced by privilege and oppression. The findings of this study inform a series of recommendations describing how institutional leaders can alter the predominantly White institutional environment to support WOC faculty in the tenure process.

Research from this study will be presented at the 2017 American Educational Research Association (AERA) Annual Conference in San Antonio, Texas, and published as a dissertation through Clemson University in May.
Doctoral Students Developing a Scholar-Activist Identity: A Historical Case Study

Student activism on college and university campuses continues to rise given the changing political landscape in the United States. Utilizing a historical case study method, researchers investigated the way in which doctoral students developed or acknowledged their scholar-activist identity after constructing a white paper addressing campus climate issues as a course assignment in the fall of 2015. The white paper was distributed to university administrators as an act of activism to compliment other student-led demonstrations conducted on campus.

The findings reflect the experiences of 15 part-time or full-time doctoral students and one faculty member in a single program, affiliated with a single graduate course. Initial findings indicate connections between personal social identities and the motivation to engage in scholar-activism and the faculty role in facilitating scholar-activist scholarship. This research project uniquely contributes to the research discourse about how doctoral students make meaning of activities that allow them to practice activist-scholarship. It provides insight into how doctoral programs can provide relevant training and development for students to use scholarship to make sustainable change in higher education.

Preliminary work was presented at the 2016 Association for the Study of Higher Education (ASHE) Annual Conference in Columbus, Ohio. Several related, initial manuscripts regarding this research are under development for journal submission in summer/fall 2017.
A Longitudinal Study of STEAM Instruction in K-8 Classrooms

Despite growing global interest in STEAM education, where the “A” represents the arts and humanities, little empirical data exists towards conceptualizing and implementing STEAM education in classrooms, particularly in K-12 settings. Our research team has spent the last three years conducting a longitudinal study exploring how STEAM teaching practices are enacted in a variety of elementary and middle school classrooms in South Carolina. Based on qualitative data including classroom observations, teachers’ reflective journals, focus group interviews, and instructional artifacts, with 110 teachers in three school districts, we present a summary of findings from professional development (PD) and classroom enactment of teaching practices. In general, after intensive STEAM PD, findings demonstrate teachers approached STEAM instruction by creating problem-based STEAM scenarios in which students solved authentic, relevant problems in a variety of ways. Teachers struggled to understand the transdisciplinary nature of STEAM and integrate the arts; however, the PD greatly assisted in integrating technology for instructional practices and assessment, but less for student co-creation. Furthermore, the research demonstrated a need to clearly define STEAM instructional practices and assist teachers with ways to implement and assess students’ collaborative problem solving; thus, we also highlight a research-based conceptual model and collaboration rubric created to support teachers’ instruction in STEAM activities.

This research has been published in:
- Journal of Computers in Mathematics and Science Teaching
- School Science & Mathematics
- Science Scope (in press)
- On the Horizon
- Professional Development in Education
- Journal of Science Education and Technology

This research was funded by Bosch Community Fund Grant and a Gordon/MacArthur/ETS Fellows Grant for 21st Century Learning and Assessment.
The Impact of Transformative Professional Development: Reaching Rural Schools through the College-Ready Writers Program

College-Ready Writers Program’s independent evaluation used a multi-site cluster randomized trial to answer two questions: 1) What is CRWP’s effect on students’ ability to produce college and career-ready writing? and 2) What is CRWP’s effect on teachers’ practices in writing instruction? Forty-four high-poverty rural districts in 10 states were randomly assigned to treatment or control conditions. The CRWP employed three strategies: 1) engage 80% of 7th-10th grade English Language Arts (ELA) teachers in 45 hours of professional development annually; 2) provide rigorous, teacher-designed curricular materials that engage students in composing arguments based on reading multiple full-length, informational texts; and 3) facilitate teachers’ collaborative analysis of student writing using common formative assessment tools. Through the College-Ready Writers Program grant, Clemson’s Upstate Writing Project served six rural school districts throughout South Carolina: Florence 2, Greenwood 51, Union County, Anderson 3, Bamberg 2, and Orangeburg 4.

The SRI evaluators collected teacher surveys and instructional logs, and students’ arguments written in response to on-demand reading of non-fiction text sets and writing tasks. The evaluation found that the program was consistently implemented with fidelity to the core program components. Participating teachers enacted CRWP practices and materials, and as a result, instruction in argument writing was significantly different in treatment districts than in control districts. As a result, CRWP had a positive, statistically significant effect on the four attributes of student argument writing measured — content, structure, stance, and conventions. Findings have been published in *Journal of Research in Rural Education, Professional Development in Education*, and *Teaching Writing: the Journal of Writing Teacher Education*, among other journals. The three-year College-Ready Writers Program grant was funded by U.S. Department of Education’s Investing in Innovation Fund with matching funds from the Rural School and Community Trust and the Bill and Melinda Gates Foundation.
VEnvI (Virtual Environment Interactions)

For the past four years, our team has been examining how an embodiment-centered curriculum and virtual environment supports the development of computational thinking for 4th-8th grade students. We utilize movement in both physical and virtual worlds as a purposefully embodied practice to teach computational concepts, practices, and perspectives, providing an engaging context that will appeal to students and help broaden participation in computing. Through in school, afterschool, and summer camp contexts, we have conducted studies to aid in the iterative development of our program, VEnvI (Virtual Environment Interactions). We have found that students have improved scores on pre- and post-measures, engaged in computational thinking practices such as iteration and debugging, and enhanced their computational thinking perspectives of scholastic and professional computing and arts possibilities. Our findings have been published in peer-reviewed journals: *Technology, Knowledge, and Learning*, *Voke*, and *the Journal of Language and Literacy Education*. Our work has also been presented widely at conferences in education, human-centered computing, and virtual reality with published proceedings of IEEE Virtual Reality, the ACM Technical Symposium on Computer Science, and the ACM SIGGRAPH. This research is sponsored by the National Science Foundation, Grant No. 1344228.
Nationally, education policy analysts have reported a negative shift in the political climate for public education systems from elementary and secondary schools to higher education. Multi-state analyses note conventional political strategies causing shifts to non-public, if not anti-public school policies; however, the networking mechanisms for this rhetoric varied across states. The Politics of Education Association undertook an unfunded, multi-state set of simultaneous studies to apply multiple methods in clarifying the state-level activity that surrounds current education policy trends, especially activities among the anti-public school movement with particular attention to grassroots communication, including social media. This study focused on South Carolina’s political networks affecting preschool, elementary and secondary school initiatives from the school house to the statehouse. The two-phased study incorporated traditional reputational interviews of influential education policy individuals and agencies with social media analysis. The first phase of interviews proceeded to saturation, with a confirmatory application of social media analysis software used for the second phase. The study is significant due to its contributions to the field of politics in education as it added a new method of research and extended a theory of state-based cultural politics.

The purpose of this research was to determine differences and trends in motivations for reading fiction and non-fiction texts among 3rd-6th grade students. This multi-state study was an extension of previous work on motivation to read but included a focus on students’ self-efficacy and valuing of two text types – fiction and non-fiction. Current trends in literacy research and policy, particularly the adoption of the Common Core State Standards, emphasize an increased focus on reading non-fiction text in the early grades and moving into the middle grades. Recognizing the important and well-established relationship between motivation and reading achievement, this research sought to determine whether students’ motivations for reading fiction and non-fiction differed across grade and gender.

The Motivation to Read Profile-Fiction and Motivation to Read Profile-Nonfiction, developed for use in this research, were administered to 1,340 elementary students in five U.S. states. The results indicate that gender differences exist for reading fiction and non-fiction across the grade levels. Trends across the grades indicate that boys and girls increase in motivation for both text types from 3rd through 4th grade, level as they approach 5th grade, then decrease precipitously at 6th grade. These trends have implications for practice.
Limited research exists that highlights instructional coaching practices associated with teacher learning, practice, and student learning (McGatha, Davis, & Stokes, 2015; Gibbons & Cobb, 2011). This study investigates coaching as a high-leverage strategy for mathematics teacher learning as a way to contribute to this research base. My study examines one coach’s practices with two different teachers in order to respond to questions in the field about the decision-making processes of coaches. More specifically, this study examines how one coach determined which practices to use and the ways in which one coach adapted her practices with teachers. This dissertation seeks to answer the following research questions: 1) How do instructional coaches interpret and respond to the learning needs of teachers? and 2) In what ways do instructional coaches adapt their practices to the differing learning needs of teachers? A conceptual framework that parallels the Professional Noticing frame set forth by Jacobs, Lamb, and Philipps (2010) served as the lens for this case study. Interview and observational data were collected, explored, and analyzed. Overall, this study revealed the coach’s practices (ways of responding) were directly related to her noticing; the coach noticed what she perceived to be a teacher need (advice relating to content knowledge, classroom management; an understanding of students’ point of view), assumed a particular stance, and selected practices believed to encourage teacher growth in those areas. Furthermore, empirical evidence revealed the coach’s responses, coaching practices selected, were differentiated between two teachers. In this particular study, the coach offered direct advice more often to the less experienced teacher while asking the more experienced teacher open-ended questions.
A Comparison of STEM vs. Non-STEM Majors as Career Changer Teachers in the Middle School Math and Science Classroom

This study and Mrs. Fowler’s assistantship were funded by the National Science Foundation. The results will be presented at the National Noyce Foundation Conference in July, 2017.

Approximately 100 of 172 math or science certifying graduates of the Master of Arts in Teaching (MAT) in middle level education program from 2003-2015 were contacted via e-mail to take a survey to measure their teacher efficacy and other characteristics. Fifty-one graduates who were still teaching in a middle level STEM classroom completed the survey. Of the 51, 24 were Noyce Scholars. The demographics of the respondents are as follows: STEM majors, 28; non-STEM majors 23; male, 19; female, 32; public Title 1, 21; public non-Title 1, 30. Of these 51 respondents, six STEM and six non-STEM participants were selected for interviews by stratified sampling.

For the purposes of this research, participants who were currently teaching in a STEM-related field were directed to one of two statistically validated and reliable instruments. Based on the participants’ response to the survey question asking for a willingness to participate in a follow-up interview, 12 participants were chosen by stratified sampling for interviews, which were conducted in fall 2016. Four STEM science, two non-STEM science, two STEM math and four non-STEM math participants were interviewed. Student standardized test scores for 2015-2016 were provided by seven interviewees. Interview responses were coded by question and theme, and descriptive statistics were configured for the standardized test data.

Survey results showed the Z-Score is 0.3518 and the p-value is 0.72634. The difference is not significant. There is no statistical difference between STEM and non-STEM undergraduate majors and reported self-efficacy in teaching STEM subjects. The student standardized test score averages of both STEM and non-STEM participants were significantly above the state average, but there was not significant difference between the student test scores of the STEM and non-STEM participants.
A Systematic Review of Self-Regulated Strategies to Improve Academic Outcomes of Students with EBD

The purpose of this review is to report on the effectiveness and focus of academic self-regulated interventions for students with emotional and behavioral disorders (EBD). Historically students identified with EBD experience a host of poor academic and post school outcomes including lower academic achievement and graduation rates, exclusionary discipline, placement in more restrictive educational settings, higher levels of criminal justice involvement, and greater levels of unemployment/underemployment.

Thirty-six studies published in 35 articles and involving 189 participants met inclusionary criteria. Overall self-regulated interventions showed moderate/medium ES gains (PND 74%; SMD 2.25; Tau-U 0.80) across academic subject areas, indicating effects were generally educationally meaningful. When assessing the effectiveness of self-regulated interventions for addressing specific academic content areas, the largest ES gains were observed in reading (PND 93%; SMD 2.13; Tau-U 0.94), while math (PND 71%; SMD 2.08; Tau-U 0.70) and writing (PND 81%; SMD 2.55; Tau-U 0.89) resulted medium/moderate ES gains. There was evidence to support a claim of the generalization and maintenance of findings. Implications, limitations, and areas for future research are discussed. This meta-analysis was presented at the 2017 Teacher Educators for Children with Behavioral Disorders (TECBD) conference and is currently in submission to Education and Treatment of Children.
An Exploration of Adolescent Girls' Perspectives of Childhood Obesity
Through Photovoice: A Call for Counselor Advocacy

Researchers explored adolescent girls’ perspectives of environmental influences on childhood obesity using photovoice and implications for counselor advocacy. Photovoice is a qualitative participatory action research method developed by Wang and Burris (1997) to capture an issue from the lens of those affected and to influence social policy in that area, which in this case is childhood obesity. Because counselors are called to advocate at multiple levels to address barriers that inhibit the growth and development of clients (American Counseling Association, 2014), the authors addressed how counselors can use these findings to advocate for the many clients whom this issue affects. We had seven participants, ranging in age from 14 to 17 years old. A total of eight themes emerged representing adolescent girls’ perspectives of childhood obesity through photovoice. The themes were 1) ease and convenience, 2) money and SES, 3) freedom and pride, 4) ignorance, 5) addiction, 6) will and motivation, 7) time, and 8) advertisement. We received a Research and Best Practices Grant to help fund this study from the Southern Association of Counselor Education and Supervision and the findings have been published in the Journal of Humanistic Counseling.
A Multi-Tiered Evaluation of Adolescent Therapeutic Group Homes

The effectiveness of therapeutic group homes has been questioned as an effective form of treatment for at-risk youth. This presentation will examine the recidivism rates of a sample of at-risk youth who participated in an established group home program. While least restrictive interventions are the primary mode of treatment for adolescents, therapeutic group homes still offer an alternative to training school and long stays in local detention centers for adolescents who may have failed in other therapeutic modalities.

The effectiveness of these residential services was measured in three ways: 1) services are evaluated by primary referral sources; 2) follow-up data is obtained at various intervals after program participation to measure recidivism; and 3) a more sensitive “Offense Seriousness Score” was computed and analyzed prior to, during and after treatment in the residential program. Also, separate data on 740 clients who have participated in the agency group homes over the past several years is examined to determine what percentage got back into trouble with the Department of Juvenile Justice during one-year follow up periods.

Published in Child and Youth Care Forum.
The Value in Values: Investigating Foundational Fraternal Values
Contribution to Men’s Decisions to Join Specific Chapters

Fraternity and Sorority Life offers collegiate students a unique and enhanced experience during and beyond their undergraduate time. The purpose of this study is to examine why college men choose specific fraternal affiliations within the Interfraternity Council. With efforts to fill the gap in literature concerning motivating factors for fraternity affiliation, our study examines why male students at Clemson University chose a specific fraternity during the spring 2017 recruitment process. In this quantitative study, a web-based survey was used to collect data from participants. Out of the 126 men to accept bids, 88 men agreed to participate in the survey. The survey contained five questions in total. Four questions used a Likert scale and the fifth question was open-ended. Findings indicated that the fraternal values of scholarship, leadership, brotherhood, and philanthropy contributed to men’s decisions to select specific fraternal affiliations. The goal of this research is to further understand the pertinence of the foundational values that fraternities and sororities were founded on.
Staff and Faculty Perceptions of Title IX Related to LGB Students Enrolled at Clemson University

The purpose of the study is to explore science, technology, engineering, and mathematics (STEM) faculty understandings of how Title IX legislation relates to lesbian, gay, and bisexual students. The results of the study will be presented to the EDSA8060 class, and the researchers may seek publication upon the completion of the study. The participants used in this study will consist of STEM faculty employed by Clemson University. The inclusion criteria for the study are that two of the participants will have completed ally training and two have not. The exclusion criteria for the study are that none of the participants will identify as a member of the LGBTQ+ community. Those matching these criteria will be the only participants included. Interviews were conducted with the first STEM faculty that responded to our communication and matched the criteria.
The Transformational Effect of Integrative STEM Education Professional Development on Students, Teachers, and Schools

The integration of science, technology, engineering, and mathematics (STEM) education, also referred to as integrative STEM education, is a relatively new interdisciplinary teaching technique that incorporates an engineering design-based learning approach with mathematics, science, technology, and engineering education (Sanders, 2010, 2012, 2013 & Wells, 2010, 2013). Over the past 11 years, 475 kindergarten-8th grade teachers and elementary school administrators in three counties in South Carolina have participated in an ongoing annual Integrative STEM Education Institute. In this institute they learned how to incorporate problem-based and project-based learning that helped students work in groups to develop cross-curriculum skills.

A research team of Educational Leadership faculty and doctoral students/alumni developed a mixed-methods research project to determine the instructional effectiveness of the institute and to gather evidence as to the micro and macro transformative influences of the pedagogy in elementary and middle school contexts. This presentation will include findings from quantitative survey data regarding improved teacher efficacy with integrative STEM education learning outcomes immediately after the institute as well as data on sustained alumni use of those teaching techniques in the years following one’s participation in the professional development program. Qualitative data from interviews and focus groups revealed the degree to which integrative STEM education changed individual students and teachers employing the practice and how doing so impacted the schools and districts where the pedagogy was implemented.
Technical Adequacy of Using Curriculum-Based Measures in a Preservice Teacher Education Course

Formative assessments are necessary for responsive teaching and learning, even in college (Yorke, 2003). Educators need reliable and valid assessment tools, such as vocabulary matching Curriculum-Based Measurement (CBM), which showed evidence of reliability and validity in secondary content classes (Beyers et al., 2013; Espin et al., 2005). A logical extension is to develop vocabulary matching CBM at the university level. To date, only one descriptive study has investigated college CBM (Larson & Ward, 2006). The utility and technical adequacy of CBM in university courses needs to be pursued.

This pilot study explored whether vocabulary matching CBM showed evidence of reliability and validity in a preservice teacher course. Participants \((n = 113)\) took four 10-item probes during an Introduction to Special Education semester course. Students had three minutes to match 10 terms with 12 definitions. Terms were drawn from the textbook and lecture notes and randomly assigned without replacement across probes. Participants also took a researcher-created criterion assessment. Reliability and validity were assessed with Pearson correlations. Results indicated low to moderate reliability and validity coefficients, possibly due to short probes or modest internal consistency of the criterion measure. Future research will include longer probes, growth modeling, and a social validity survey.

This study is under review by Assessment for Effective Intervention.
Trends in online education at two-year colleges are showing growth in enrollment and fully online programs which, through innovative delivery models, can provide increased accessibility to higher education and postsecondary degree attainment. However, many two-year college faculty do not have readily accessible opportunities to engage in formal professional development focused on pedagogical methods and incorporation of technology into curriculum. High-quality online course development which meets the education, training and employment needs of local learners is a complex task for faculty in technological education and workforce development fields. Professional development resources incorporating evidence-based instructional design theories, such as the framework and toolkit shared in this research, offer a unique response to these challenges. Integrating easy-to-use templates, toolkits and instructional design resources with two-year college faculty creates opportunities to improve technician education and increase workforce preparedness for larger and more diverse populations of students through expertly designed online education. This work is supported by the National Science Foundation Advanced Technological Education and is under review with TechTrends Journal.
The Effects of General Education Teachers Designing and Implementing Functional Assessment Based Intervention Plans

We evaluated the results of a professional development series designed to instruct general educations teachers to design and implement functional assessment based interventions for students with behavior concerns. Participants attended a six-hour training, split across three days. During the training the participants learned how to a) operationalize target behaviors, b) identify the functions of behavior, c) develop a behavior plan, and d) implement the plan in the classroom. Results revealed a functional relation between the intervention and academic engagement. Interventions were rated as socially valid. The data resulting from this study have implications for practice in school settings.
Closing the Research-to-Practice Gap: Faculty-in-Residence Geared Towards Enhancing STEAM Middle School Teacher’s Classroom and Behavior Management

The Schoolwide Positive Behavior Interventions and Support (SWPBIS) framework relies heavily on teacher behavior to impact student behavior. However, most teachers receive minimal or no coursework in behavior management during pre-service training (Landrum & Kauffman, 2006). Upon entering the classroom, this gap continues to widen as they receive little support on how to adopt and implement evidence-based classroom management practices (Begeny & Martens, 2006; Markow, Moessner, & Horowitz, 2006). This is a significant concern as a high percentage of teachers leave the classroom within their first five years, frequently citing difficulties with classroom management as the main reason (Martin, Shooh, Yin, Kaufman, & McLean, 2003; Wei, Darling-Hammond, Richardson, Andree, & Orphanos, 2009).

In the study, I am examining how teachers implement SWPBIS at the classroom level in a Science, Technology, Engineering, Arts, and Math (STEAM) middle school. The goal is to better understand how STEAM classroom teachers’ view and implementation classroom management practices. This information could be useful for administrators, researchers, and teacher educators. I am in the process of collecting classroom observation data to answer the question: What are the current classroom management practices implemented in a STEAM classroom? In the school, this data will be used to identify the school’s professional development needs as well as identifying a cohort of teachers for additional classroom management training on SWPBIS classroom practices. I also intend to publish and present the findings from the study.

This research is sponsored by the College of Education Faculty-in-Residence program. It is a partnership with Greenville County Schools.
How Many Hats do You Wear? Building Research Capacity for STEM Faculty Development: An NSF Sponsored Workshop

Expectations for faculty in STEM disciplines have increased dramatically in recent years calling for faculty to become equally effective across research, teaching, and service. These expectations are often juxtaposed with widely accepted norms in academia that clearly value research productivity over teaching and service (particularly in R1 universities) as demonstrated in documents such as tenure and promotion guidelines or guidelines for salary or merit pay increases. Many colleges and universities have established faculty development programs, but there remains a deficiency in holistic professional support that integrates these disparate professional activities and aligns them with desired individual and institutional goals, especially for faculty in STEM. This poster will summarize an NSF funded workshop (NSF grant #EEC-1638888) designed to bring together multiple stakeholders in academia, government, and industry to begin to establish a research agenda for holistic STEM faculty development. This workshop was held February 17-18, 2017, at Clemson University and was led by Dr. Karen High (PI) and Drs. Cindy Lee, Sandra Linder, and Faiza Jamil (Co-PIs). A total of 130 individuals from across the country submitted a complete application to attend. Following a rigorous review process, a total of 53 participants were invited to attend, with an additional 11 attendees from Clemson University. During the two-day workshop, participants engaged in substantive discussions regarding potential research questions, theoretical frameworks, and methodologies that might be used to address research on holistic STEM faculty development. Results from this intensive workshop include preliminary concept maps that will be used to develop a draft research agenda, which will ultimately guide the trajectory of national and international research on holistic STEM faculty development. As data analysis from this workshop is in preliminary stages, this work has not yet been disseminated. The methodology used to guide workshop planning will be presented at the annual meeting of the American Society of Engineering Education (ASEE) in June 2017.
The purpose of the navigation application is to support individuals with intellectual disabilities (ID) to become more independent in navigating within their community. Navigation is a crucial skill for employment and independent living for people with ID. The navigation application allows full customization of routes to specific locations, such as places of employment or shopping centers. The application also provides audio prompts to inform the user when s/he should begin the route, as well as real-time bus data regarding approximate arrival time. This application allows researchers to program destinations within the community using public transportation systems as access points, thus allowing individuals to travel safely and independently. This study evaluated the effectiveness of the navigation application compared to Google Maps and traditional written instruction in helping a student with ID navigate the Clemson community (e.g., grocery stores, library). The number of prompts provided as well as legs successfully completed were compared for all three methods, as well as consumer satisfaction. Data collection is currently being conducted, and results will be available by the Research Forum date. The data resulting from this study have implications for practice in higher education settings serving individuals with ID who wish to become more independent.
A Case Study Design to Assess the Effectiveness of a Shopping Application in College-Aged Students with Intellectual Disabilities

Assistive technology devices have become commonplace within our society, aiding the various needs of their cliental in completing and tracking their tasks, activities, and schedules. The purpose of this study was to assess the effectiveness of a shopping application in assisting young adults with intellectual disabilities with their meal planning and grocery shopping, in an attempt to promote independence. The application was built so participants click on a recipe and are given an ingredients list. They then are prompted through an inventory of their food to create a grocery-shopping list. A multiple baseline single case study design is being conducted on three participants from ClemsonLIFE. They’ve continuously demonstrated difficulties with creating grocery-shopping lists and shopping for their ingredients on their own. Baseline data was collected by providing the participant a meal and asking them to provide both an ingredients and grocery-shopping list of items they felt were needed to make the meal. Researchers then inventoried their food to compare to their grocery-shopping list. The application was provided to the student upon demonstrating consistent inability to create ingredient and shopping lists. The study is currently ongoing; results will be provided at the time of presentation.
Coaching, Leadership, and Learning Communities: Increasing Rural School Leadership Capacity Through a Research-Practice Partnership

In this presentation, we describe the activities of a research-practice partnership between Clemson University (CU); the Western Piedmont Educational Consortium (WPEC), comprised of 12 predominantly rural, high-poverty school districts in South Carolina; and Washington State University (WSU). The purpose of the partnership is to design, implement, and evaluate a collaborative initiative for enhancing school and district leadership capacities. The specific focus of the initiative is to accelerate the development of the leadership and leadership coaching capacities of experienced school and district leaders through a Leadership Learning Community (LLC).

Adopting a design-based research approach, two CU faculty members, a CU graduate student, a WSU faculty member, and a 10-member steering committee of school and district leaders have collaborated since the fall of 2014 to develop, implement, and evaluate the program. Through this work, eight experienced principals and district leaders developed their coaching skills by participating in a professional community of coaches and providing job-embedded coaching to 14 school leaders. Throughout the two-year initiative, qualitative and quantitative measures have been used to assess growth in the coaches’ and school leaders’ abilities to foster distributed instructional leadership, use data effectively, and create a culture that supports teaching and learning.

This mutually-beneficial initiative has strengthened the nearly 15-year-old partnership between CU and WPEC. Consortium members have enhanced their abilities to meet the challenges of developing and supporting school leaders, while Clemson faculty and students have enhanced their understandings of how to collaborate with school-based partners to enhance leadership capacity in high needs schools through design-based research. The findings and resultant model for enhancing student educational outcomes through cross-district leadership coaching will be used to benefit rural, high-needs schools and districts across the state of South Carolina.
Project Play Pack: A Family Engagement Intervention

We examined the efficacy of a family play engagement initiative for promoting parent involvement in Head Start four-year-old play interactions. In home parent involvement (play) is powerful for the learning and development of young children, especially when parents’ understanding of play is developmentally appropriate (Parker et al., 1999). A number of Head Start families were invited to participate from a small selection of Head Start centers in the upstate of South Carolina. The selected Head Start centers were chosen for inclusion in the study based on similar student demographics and logistical convenience for the six-week intervention. Each participating family received a different take-home play bag every Friday for four weeks. Each take-home play bag contained a book, a related selection of manipulatives or toys, a tip sheet including ideas for developmentally appropriate engaged play, and a feedback sheet. Preliminary analysis revealed an increase in in-home play frequency as a result of the take home play bag intervention. Parent involvement in play, examined through the consideration of pre and post parent-child play interaction observations, increased among participating families. Initial findings reveal positive implications for the efficacy of the intervention for promoting in-home play among at-risk families. Additional analyses are continuing to explore factors that inhibited or enhanced Head Start families’ perceptions of the intervention. Findings contribute to work on the feasibility and appeal of at-risk-family engagement initiatives and in-home play promotion. This work is currently under review in the Kappa Delta Pi Record.
Interactive writing is a research-based early literacy strategy that has been found effective at increasing young children’s oral language skills, alphabet knowledge, phonemic awareness, concepts of print, and early writing skills. This paper reports on a case study which explored the feasibility and fidelity of implementing interactive writing in two contrasting preschool contexts. The findings suggest that with minimal training and support, public preschool teachers can implement interactive writing effectively. The study also found that quality standards, specifically teacher education and training, may affect the successful implementation of preschool interactive writing instruction.


Using Self-Regulated Strategy Development to Teach Mathematics Problem-Solving to Middle-School Students with Learning Disabilities

Mathematics is a critical area in which many students with learning disabilities (LD) struggle. Results from the National Assessment of Educational Progress indicate that 68% of 8th grade students with disabilities perform below proficient in mathematics. Students with LD struggle particularly with mathematics problem solving. The purpose of this study is to examine the effects of Self-Regulated Strategy Development (SRSD) and a mnemonic strategy for problem solving on mathematics performance of middle school students with LD. A single-subject multiple-probe across participants design is in use to determine the effects of the intervention on students’ mathematics problem-solving skills. SRSD combines six basic stages of instruction to teach strategies that assist students in self-management of their planning and organization of academic tasks. The mnemonic provides support for remembering a systematic approach to solve problems. In the current project, a middle school special education teacher is implementing the intervention with 7th grade students, and problem-solving skills are assessed by student performance on mathematics probes. Phase changes included in the single-subject design are baseline, intervention, and post-instruction. Currently students are in the intervention phase. Results will be available by the College of Education Research Forum date.
Online Professional Development for Teachers Using Algebra Progress Monitoring

The 2008 National Mathematics Advisory Panel report as well as state standards, including Common Core State Standards-Mathematics, highlight the critical importance of algebra proficiency for student success in postsecondary settings and careers. As more students with disabilities take algebra courses, teachers are faced with identifying evidence-based, progress monitoring tools that aid in instructional decision making. Although many technically adequate progress monitoring tools are available for the elementary grades, fewer measures exist at the secondary level. Similarly, many secondary teachers lack knowledge of progress monitoring. This poster addresses an important area of need for special and general education teachers at the middle and secondary levels by detailing information about an Institute of Education Sciences project that makes professional development in algebra progress monitoring more readily accessible through an online environment.

This Goal 2 Development project spanned five years and culminated in a system of professional development modules and data management for teachers of algebra. An extensive research base supports the use of curriculum-based measurement as a technically sound set of procedures for use in student progress monitoring. Based on these principles of curriculum-based measurement, this online system provides instruction in three types of validated tools that may be used for progress monitoring in algebra. One of two online hubs provides self-paced, interactive instructional modules to support teachers in learning about progress monitoring and how to administer and score the three types of algebra tools. The second hub provides a system for data management that enables teachers to record and manage student data, to view graphs of student and class progress, and to access more diagnostic student data.

This poster describes features of the online instructional modules and data management system within the Professional Development for Algebra Progress Monitoring project. Specifically, sample algebra measures, content illustrating interactive features of the instructional modules, and figures showing data management tools are presented.

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Published article:
Producing *Our History Clips*® Through the Use of Disciplinary Literacy Skills

The purpose of our pragmatic, mixed-methods, single case study (Creswell & Plano-Clark, 2006) was to describe the effectiveness of an intervention within a professional development (PD) community of 22 6th grade social studies teachers within a high-needs school district. The intervention required teachers throughout a summer to practice producing *Our History Clips*®, which are 3-4 minute multimedia narratives of historical understanding produced through the use of various disciplinary literacy skills. The statistically significant results from a t-test revealed that teachers were able to show marked improvement in producing these *Our History Clips*® from their first to last production effort (N=4). Quantitative and qualitative data from later classroom observations revealed that 20 of the teachers were able to then model and encourage the *Our History Clips*® methods and disciplinary literacy skills within their classrooms. Knowing more about the effects of this *Our History Clips*® intervention may enable researchers and educational leaders to design PD offerings that will support social studies teachers as they seek to model disciplinary literacy skills within their classrooms in order to help students develop richer historical understandings. This research study was a part of a larger project funded by an *Improving Teaching Quality* (ITQ) grant.
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The complete College of Education Research Forum booklet with detailed abstracts can be found at www.clemson.edu/education/research/research-forum/index.html.
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The College of Education is a transformative leader in systemically improving education, beginning at birth. Our mission is to engage our students in high-quality applied research, professional learning, and immersive experiences. We prepare culturally competent scholar practitioners who promote the growth, education, and development of all individuals, with emphasis on underperforming schools and underserved communities across the state and nation.

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