University of California, Irvine

School of Education

Ph.D. in Education

2014 Poster Presentations

featuring

First Year Student Research

in

Learning, Cognition, and Development (LCD)
Educational Policy and Social Context (EPSC)
Language, Literacy, and Technology (LLT)

October 3, 2014
11:00 am – 1:00 pm
Education Building 3200

2014 Ph.D. in Education Poster Presentations

UC Irvine School of Education 3200

October 3, 2014
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2014 Poster Abstracts

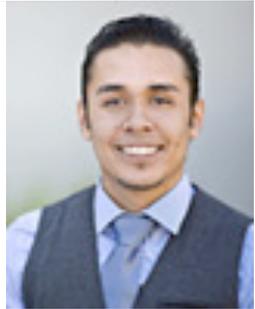|	
Priyanka Agarwal LCD	*Title*: Assessing Algebraic Learning as Growth *Abstract*: New mathematics standards call for the early development of algebraic thinking. Additionally, national education policy is increasingly requiring characterizations of learning as outcomes and relative growth. This analysis investigates how algebraic learning may be assessed systematically in terms of growth. Drawing on pre- and post-tests administered during a teaching intervention with 5th graders, open-coding of students' written work resulted in four stages of algebraic learning. These stages were then used to characterize shifts in learning as growth. The distribution of students defined by the growth-based assessment was found to be different than those defined by the outcome-based assessment. *Poster Presentation Advisor*: Tesha Sengupta-Irving
Jacky Au LCD	*Title*: Improving Fluid Intelligence with Training on Working Memory: A Meta-Analysis *Abstract*: Working Memory (WM), the ability to store and manipulate information for short periods of time, is an important predictor of scholastic aptitude and a critical bottleneck underlying higher-order cognitive processes. Recent training interventions targeting WM have suggested plasticity by demonstrating improvements in both trained and untrained WM tasks. However, evidence of transfer into more general cognitive domains such as fluid intelligence (Gf) has been more equivocal. Therefore, we conducted a meta-analysis focusing on one specific training program, n-back, and found a small but significant effect of training on improving Gf. Several moderators are identified and discussed. We conclude that short-term cognitive training on the order of weeks can produce beneficial effects in important cognitive functions, as measured by laboratory tests. *Poster Presentation Advisor*: Susanne Jaeggi

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Bianca Cung LLT	*Title*: Flipping the Tradition: Blended Instruction Better Prepares Students *Abstract*: Blended and online instruction are becoming increasingly popular, though comparisons against traditional face-to-face instruction have largely yielded mixed results. This study makes a three-way comparison of different modes of undergraduate remedial math instruction by examining final exam performance in a subsequent math course, calculus. Because traditional face-to-face, blended, and online pre-calculus instruction were all offered at different times, this study uses a difference-in-differences approach where pre-calculus students who moved on to calculus are compared to their classmates in calculus. Through linear regression techniques controlling for students' background factors, this study found that students in the blended pre-calculus instruction condition were better able to catch up to their calculus classmates than students in the online or traditional face-to-face condition. *Poster Presentation Advisor*: Mark Warschauer
Gabriel Estrella LCD	*Title*: Evaluating the Peabody Picture Vocabulary Test-4 for Differential Item Functioning *Abstract*: The Peabody Picture Vocabulary Test-IV (PPVT-IV) is a widely implemented vocabulary-scale that, despite being standardized on an English proficient population, is frequently used on English Language Learners' (ELL). Because language factors can moderate performance on achievement test (Abedi, 2002), and underestimate ability levels for students lacking English proficiency (Navarrete & Gustke, 1996), it is unclear whether the PPVT-4 provides a valid and equitable measure of vocabulary knowledge for ELL's. In response to this issue, the following study evaluated the PPVT-IV for Differential Item Functioning (DIF). Although 14 of the 228 items were identified as DIF, corresponding effect sizes were negligible, and thus inconsequential to the test's validity. Overall, the result suggests that the PPVT-IV contains items that function equivalently for both ELL and non-ELL examinees. *Poster Presentation Advisor*: Penelope Collins
Suhang Jiang LLT	*Title*: Social Positioning and Performance in Massive Open Online Courses *Abstract*: Massive Open Online Courses (MOOCs) have attracted millions of users in the past two years. However, the student completion rate in MOOCs is only about 7%. To explore ways to increase the completion rate, we employed social network analysis and investigated the relationship between forum participation and performance in MOOCs. The result shows that social interaction in MOOCs is limited. We found one positive (MOOC Algebra) and one null (MOOC Financial Planning) correlation between centrality and grade scores at the end of the MOOCs. We hypothesize that encouraging and increasing social interaction may be conductive for boosting the completion rate of academic oriented MOOCs, but not interest oriented MOOCs. Further studies are needed to confirm this. *Poster Presentation Advisor*: Mark Warschauer
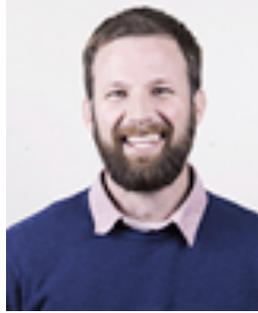
Ryan Lewis EPSC	*Title*: Investigating the Relationship Between Amount of Homework Assigned and Achievement in Eighth Grade Science Classes *Abstract*: The researcher uses the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K) to analyze the impact of homework assigned within eighth grade science classrooms on achievement. Controlling for differences in student background, prior achievement, teacher characteristics, and classroom elements, the amount of homework assigned by a teachers in eighth grade science classes is significantly and positively associated with students' eighth grade science standardized test scores (n=9304). Positive effects grow as amount of homework assigned is increased. The study advances previous work by utilizing teacher-reported homework amounts and focusing on standardized test scores rather than achievement measures that can include non-academic elements. The results suggest increased homework as an easily implemented instrument for improving science achievement in eighth grade classrooms. *Poster Presentation Advisor*: George Farkas
Tutrang Nguyen EPSC	*Title:* Preschool Numeracy Skills Most Predict Later Math Achievement *Abstract*: Research has shown that kindergarten mathematics achievement at school entry is the strongest predictor of later school success. This study expands our understanding of children's mathematics achievement in their earliest years of schooling using longitudinal data from a low-income and minority sample of preschoolers. We use OLS regression to relate specific preschool mathematical competencies to achievement in kindergarten, 1st, 4th, and 5th grade. Counting skills and understanding numbers most predict mathematics achievement even through 5th grade when controlling for other domains of mathematical knowledge, preschool classroom fixed effects, and a host of child and family characteristics. Results suggest strong support of mathematics in preschool. *Poster Presentation Advisor*: Greg Duncan
Melissa Powell LCD	*Title*: "I'm freaking out!" Student Disclosures in College Readiness Programs *Abstract*: Transitioning from high school to college can be stressful. College readiness programs may ease this transition by providing safe spaces for students to talk about college concerns and other life stressors. Using class observations, interviews, and focus groups, this study explores 11th and 12th grade Latina girls' disclosures in two college readiness programs: one all-girl and one co-ed. Disclosures occurred in 42% of observed classes and focused on personal and/or academic experiences. Most disclosures (80%), including all academic disclosures, happened in the all-girl setting. Students reported that disclosures helped them feel supported and encouraged college application completion. Findings suggest that students benefit from having supportive environments for disclosing stressful experiences and concerns as they prepare for college. *Poster Presentation Advisor*: Stephanie Reich

Lynn Reimer LCD	*Title*: Problem-Solving Pedagogies: Enhancing Undergraduate STEM Outcomes *Abstract:* Science, technology, engineering, and math (STEM) fields require the capacity to solve real-world problems. How do STEM undergraduates develop this expertise? Undergraduate STEM instruction stressing problem solving is associated with positive student outcomes in small courses (i.e., under 50 students). For the present study, researchers used institutional data and observation protocols to consider problem solving strategies in 43 undergraduate courses with average enrollment over 270. When exposed to problem solving, the odds of student progression to the next course increased by 74%. Odds of progression were higher for females and lower for Hispanics. Future analyses will examine discipline-specific effects and interactions with demographic groups. This research was supported by the National Science Foundation under Grant Number 1256500. *Poster Presentation Advisor*: Mark Warschauer
Rachel Stumpf LLT	*Title*: The Art of Teaching Language Arts: Practices that Impact Student Writing Achievement *Abstract*: Prior research on teacher effectiveness has been inconclusive regarding the mechanisms that will improve student writing at the secondary level. Observational data about teacher practices were collected from the Pathway Project, a teacher intervention program which focuses on the use of cognitive strategies in literacy instruction. Each treatment and control teacher participating in the 2012-2013 implementation of the Pathway Project was observed twice; residualized growth models were then used to estimate the impact of specific teaching strategies on students' assessment of literary analysis (ALA) scores. The results of this study suggest that increased time spent on evaluation, writing discussion, and vocabulary instruction may have a positive impact on student writing achievement. *Poster Presentation Advisor*: Carol Booth Olson
Tamara Tate LLT	*Title*: From Keystrokes to Achievement Scores: The Effects of Prior Computer Use on Computer-Based Writing *Abstract*: This secondary data analysis uses structural equation modeling to understand the correlation between prior use of technology by students and their writing scores on the 2011 NAEP computer-based writing assessment. The NAEP data contains information for over 24,100 eighth grade students, including student and teacher reported survey data on amount and type of computer use by the students. Prior Use had a direct effect on writing achievement scores on the computer-based assessment. One standard deviation increase in Prior Use led to a .36 standard deviation increase in writing achievement scores, controlling for the effect of demographics. All groups benefited from Prior Use, but the size of the benefit of Prior Use on writing achievement varied by group. *Poster Presentation Advisor*: Mark Warschauer

Nancy Tsai LCD	*Title*: ADHD and Working Memory Function: Effects of Age and Gender *Abstract*: Working memory (WM) is a cognitive function critical to our daily lives. Essential in cognitive, academic, and social activities, WM is a predictor of academic outcomes. It is involved in memory storage and attentional control. WM changes over the course of development with the general trend being positive during childhood and young adulthood. Attention deficit hyperactivity disorder (ADHD) a prominent disorder among children, is associated with significant impairments in several Executive Function domains, including WM. However, there seems to be variability within and across ADHD populations including age and gender differences. In the following study, we examine the WM of children with ADHD and the WM of normally developing children while evaluating the impacts of age and gender. *Poster Presentation Advisor*: Susanne Jaeggi
Wei Wang EPSC	*Title*: Center Care During Kindergarten has Negative Effects on Children's Behavior *Abstract*: Using the Early Childhood Longitudinal Study Kindergarten of 2010-2011 dataset, this study explored the relationship between center childcare during kindergarten and developmental outcomes. As a replication of Claessens' study on ECLS-K 1998-1999 dataset, this study used a regression control model. Developmental outcomes during fall kindergarten were included as baseline controls. This study found that center childcare was consistently related to lower positive skills and more problem behaviors. Specifically, center childcare during kindergarten was not significantly related to academic skills. Children in center care received lower ratings of self-control (B=-0.076, p<0.01) and interpersonal skills (B=-0.070, p<0.01) and higher rating of externalizing behaviors (B=-0.076, p<0.01). Hours of center care were not related to any developmental outcomes. Future study involving a measure of childcare quality is recommended. *Poster Presentation Advisor:* Greg Duncan
Joanna Yau LLT	*Title*: How Does a School District Analyze Student Data and is the Approach Effective? *Abstract*: Studies demonstrate that the Word Generation (WG) intervention improves vocabulary knowledge but has no direct effect on distal outcomes. A partner district however, found that WG participation did increase scores on the California Standards Tests (CSTs). I compared the findings of the district approach with those of a more rigorous statistical method (i.e. hierarchical linear modeling) and found that WG did not predict CST gains according to the HLM approach. The different conclusions may be explained by data reduction, lack of attention to sampling error, and omitted variables in the district approach. This study illustrates how conclusions can vary based on the analytic approaches and suggests that the current state recommendations may not adequately support data interpretation in schools. *Poster Presentation Advisor*: Joshua Lawrence