

Focus on Illinois Education Research Symposium

Compendium of Abstracts



ILLINOIS EDUCATION RESEARCH COUNCIL

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Reframing the Quality Agenda: Building from the Field

Natasha Jankowski, Assistant Director and Research Assistant Professor,
Education Policy, Organization and Leadership
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This presentation will examine how research from the National Institute for Learning Outcomes Assessment (NILOA) can inform the Illinois Public Agenda for College and Career Success in furthering the goal of improving the quality of higher education for Illinois citizens.

In 2008, the Illinois Board of Higher Education approved the *Illinois Public Agenda for College and Career Success*, a ten-year strategic plan intended to create a more economically and educationally equitable Illinois. Goal 3 of the *Public Agenda* is to “increase the number of high-quality postsecondary credentials to meet the demands of the economy and an increasingly global society.” The latest Accountability Report for Goal 3, released in 2012, indicates that the number of Illinois citizens receiving certificates and associates degrees has increased since 2008, and the pass rates for Illinois citizens on national licensure exams have also increased. According to the report, these results are an indication that Illinois is on its way toward meeting not only Goal 3 of the *Public Agenda*, but also the Complete College America Goal set by President Obama in 2010, that 60% of American adults (and, as endorsed by Governor Pat Quinn, 60% of Illinois citizens) will have earned a college degree or certificate by 2025. Although the Accountability Report of Goal 3 appears to indicate a promising rise in the credentialing of Illinois citizens, the report offers little discussion of the *quality* of the credentials being earned.

The National Institute for Learning Outcomes Assessment (NILOA), co-located at the University of Illinois at Urbana-Champaign and the Indiana University Bloomington, aims to disseminate ways that academic programs and institutions can use assessment data to strengthen undergraduate education. In 2009 and 2013, NILOA surveyed chief academic officers and asked about practices and activities related to assessment of student learning at their institutions – in essence exploring the processes and approaches employed by institutions of higher education to assure quality of degrees and credentials. Survey results indicate that institutions are, increasingly, clearly stating learning outcomes for students and using a number of tools and approaches to assess student learning. Nationally and in Illinois, institutions are actively working to assess student learning outcomes in an effort to provide evidence of high-quality student learning, not just degree attainment. Further, institutions are using this evidence to improve educational experiences in order to enhance student learning for all students served.

While the *Public Agenda* indicates an increase in the number credentials being earned by Illinois citizens, discussion regarding student learning or the quality of the credentials is absent from the report. We know from NILOA’s national surveys that the majority of institutions of higher education already have processes and structures in place to examine the quality of student learning, not just degree attainment. Further, most institutions approach the question of student learning beyond licensure pass rates, as the results are only useful to a select group of students and degree programs. The work of NILOA suggests that a state- or policy-level mandate is not needed to drive institutions to assure quality credentials, but that instead, an exploration of the processes and practices in Illinois that can serve to inform Goal 3 would be of use. Thus, this presentation will explore examples of institutional work already occurring in Illinois which may provide actionable evidence to inform the *Public Agenda’s* interest in Goal 3.

Using Institutional Data to Guide Retention Efforts

Henry Hinkle, ADVANCE Data Analyst
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Waubonsee Community College

Study Goals/Objectives: The goal of this study was to examine retention at a community college in Illinois using institutional student data and National Student Clearinghouse data.

Theoretical perspective: There is strong interest in examining retention and student graduation. The National Commission on Higher Education (2013) called upon colleges to refocus efforts towards college completions. Overall student enrollment has been up while relative completion rates are down. According to Noel-Levitz (2013), college officials believe tracking attempted and completed credits along with tracking persistence patterns are very effective in improving student retention. However, these two practices are implemented by less than 25% of two year institutions surveyed. Retention is a key part of college completion; and as a result, we examined risk factors associated with attrition within our student population.

Research Design: Given the perceived importance of attempted and completed credits along with persistence patterns, we sought to examine the importance of these factors in comparison to other potential retention influencing variables. Data was used from our student data warehouse and the National Student Clearinghouse. The variables included represented student grades, course instructional method (online, face-to-face, independent study, Internship/field experience), developmental education, full- or part-time, dual credit, major, credit hours (completed, attempted), semester enrollment status (fall, spring, summer), start of term retention status, and biographic information. Fall to fall retention was examined for each year in isolation beginning in 2008 and ending in 2013. Students were excluded from analysis if they transferred or graduated during the year period of investigation. Excluding those students ensured the remaining students had no clear reason for not returning the following fall. The total sample included N=33,344 Waubonsee Community College students.

Data Analysis Methods: Data analysis was performed with SPSS using logistic regression.

Summary of findings: The characteristics of returning students were as follows: Completed more credits during the year of investigation, attended during the spring term, attended during the summer term, a higher cumulative GPA, having more cumulative semesters, graduating from a feeder high school, and having a start of term retention status of “continuing student” at the college. The characteristics of non-returning students were as follows: Having more cumulative attempted credits, graduating from a non-feeder high school, being a full-time student (12+ hours in a term), and having a start of term retention status of “stop in.”

Implications for Illinois Education Policy: Early intervention is critical because the majority of student loss occurs following the fall term. Additionally, overburdening students tends to have a negative effect on retention. Students who balance their class load with their time and ability are more likely to return. Institutions should guide students towards a manageable course schedule.

Advising Matters: Whose Advice Do Student Really Value?

Celina Sima, PhD, Visiting Associate Professor, Educational Policy Studies
Patricia Inman, PhD, Associate Director, Office of Degree Progress
and affiliate staff member of the Office of Diversity
University of Illinois at Chicago

Study Purpose and Context

Advising Matters is a multi-year single institution study of how students use and value advising services and resources on campus. Previous research on undergraduate student experiences at the study institution suggested that advising resources are important, yet disparate and uneven in utility and value. Through this study we identify both formal and informal networks of information for student advising; capture student perceptions of the quality of information provided from various advising resources; learn what sources of advising information are most influential when students make various advising decisions; and gather thoughts about how to improve advising.

The study is being conducted at the University of Illinois at Chicago (UIC); an urban, public research university. UIC has a total student enrollment of about 28,000, and a new freshmen enrollment of about 3,200. The campus is known for its diverse student population, and through its history, has developed numerous student support service offices that serve the diverse needs of students. These services were designed to supplement traditional forms of academic advising.

Design and Methods

The longitudinal component of the study is following the freshman class of 2012 over several years. An initial survey was administered during fall 2012 to a sample of new first year students. Focus group interviews were conducted in the spring term (2013). This paper reports on year one of this multi-year longitudinal study.

Summary of Findings

The results of this first phase of the longitudinal study of a 2012 freshman cohort are reported in three sections. The first section outlines the student survey responses regarding their advising concerns and the primary advising resources that influenced their advising decisions. The second section reports on the focus group interview responses in four broad theme categories: kinds of advising sought, types of advice sought, whose advice mattered most, and suggestions for improving advising. In the last section we briefly discuss the significance of the findings.

Red, Yellow, Green, What Does All This Data Mean?: Considering the Role of Student Performance Data in Teachers Quest to Meet Students' Needs

Margaret Evans, Doctoral Candidate and Instructor
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Educators and policy makers face a challenging question: How can public education meet the needs of *all* students? One recent reform aimed at enhancing educators' ability to meet students' needs is the practice of 'data-driven decision making' (DDDM). Proponents of DDDM posit that this practice will yield 'evidenced-based' decisions that better address students' academic needs (Bernhardt, 2009; Duncan, 2009; Mandinach, 2012; Simmons, 2012). Yet, what is missing from this discourse is *data* that supports the assertion that DDDM yields decisions that address the academic needs of students. The aim of this research was to consider *how* and *if* teachers' data-use enables educators to (a) better identify students' needs, and (b) address students' needs.

This study took place within a broader research project on teacher data-use, funded by the Spencer Foundation. Using a case study approach, a team of faculty and graduate students examined how teacher-teams in grades 3-5 analyzed and interpreted student performance data. Schools were selected based upon diverse student populations and the previous establishment of data-use routines. With a sample of 4 teacher-teams across two schools in Illinois, researchers observed over 40 hours of teacher data-use in the 2013-14 year. Additionally, each teacher participated in both an individual and a grade-level team interview.

Drawing upon data collected within the broader research project, I analyzed data from two teacher-teams at one school site. Two dominant frameworks for how educators use assessment data guided data analysis. In the first framework, the purpose of data-use is to select appropriate, rather static learning avenues for students like a remedial track vs. a college-preparatory track (Barrett, 2009; Darling-Hammond, 1994; Oakes & Guiton, 1995). Alternatively, in the second framework, the purpose of data-use is to assess the effectiveness of current educational offerings and to create new learning opportunities for students (Moody & Dede, 2008; Park, Daly, & Guerra, 2013). In the first framework, educators engage with data in order to make informed decisions on how students fit into the existing educational environment, and in the second framework, educators engage with data to create an environment that benefits the students. Each framework lends itself to distinct data-use routines and particular instructional decisions educators' make with data.

The results of this study suggest that particular data-use norms and routines may maintain current educational offerings rather than facilitate new ones. At the same time, educators within this study provide a cadre of recommendations for how data-use routines and tools can better serve the aim of improving teaching and learning.

Illinois Career and Technical Education Enrollment by Gender and Ethnicity

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The struggle for greater equity in the workplace, both in terms of gender and ethnicity, is ongoing and especially pronounced in certain sectors. PK-12 educational preparation precedes most citizens' entry into the workforce or postsecondary preparation. Student participation in Career and Technical Education (CTE) coursework, particularly, likely influences many students' future occupational opportunities and career trajectories. Therefore, CTE programming is centrally positioned to erode or maintain gender and ethnic inequities. Accordingly, we examined the distribution of Illinois high school students' enrollments in CTE programming for the 2012-13 school year, by career pathway and career cluster. We paid special attention to Science, Technology, Engineering, and Mathematics (STEM) CTE programming due to its current policy emphasis in Illinois and across the nation. We found significant gender and ethnicity-based inequities in certain pathways and clusters and found more equitable patterns in others. Of concern, student enrollment in courses fitting within STEM pathways include substantially greater male than female participation (64.1% male vs. 35.9% female), whereas other pathways show the reverse enrollment pattern (45.0% male and 55.0% female). With respect to ethnicity, we found that all subgroups except White students are underrepresented in CTE programming in general. Moreover, when we limited our focus to STEM CTE programming we found the underrepresentation to be exacerbated for all but Asian students. We contextualize these results within the literature surrounding workplace equity and U.S. CTE enrollments. Considering implications for policy and practice, we recommend heightened focus and goal setting, placing enrollment equity front and center, both at local and state levels.

WHO KNEW? Long-term Scoring Patterns on the ISAT, MAP and NAEP Show They All Assess Pretty Much the Same Thing

Paul Zavitkovsky, Center Urban Education Leadership Program
University of Illinois at Chicago

For over a decade, the University of Illinois at Chicago has been studying how differences in grading and reporting procedures on the ISAT, PSAE, ACT and MAP exams obscure deep communalities in scoring patterns across all four exams. Once conventional, norm-referenced grading and reporting strategies are applied to all tests, most differences disappear.

Throughout most of its history, the ISAT has been heavily criticized as a low-level test of basic skills that reflected lax standards. *This study illustrates that the ISAT actually assessed underlying academic abilities at a level of rigor that was roughly comparable with that of the NAEP and the MAP.* The core problem with the ISAT wasn't that it was insufficiently rigorous. The problem with the ISAT was that it was graded and reported in ways that fundamentally misrepresented what the test itself was actually measuring.

RESEARCH DESIGN AND DATA ANALYSIS METHODS

Research for this study occurred in two parts:

- **Part 1** utilized equipercentile matching to compare ISAT and MAP scoring patterns across four years of same-student, reading and math assessments for students in grades 3 through 8 from Evanston-Skokie District 65.
- **Part 2** used another form of equipercentile matching to compare NAEP and ISAT scoring patterns for All USA, the State of Illinois and the City of Chicago from 2007 through 2013. Scoring patterns for each test were then matched at the 25th, 50th and 75th percentile of each scoring distribution from 2007 through 2013. Equipercentile matching of NAEP and ISAT scoring distributions was possible because state and national scoring patterns on the NAEP have been statistically identical for each grade and subject tested since at least 2003.

SUMMARY OF FINDINGS

Long-term scoring patterns on the ISAT, NAEP and MAP reveal that scale score ranges on each test appear to assess the same range of underlying academic abilities and to value those underlying abilities in more or less the same way.

IMPLICATIONS FOR ILLINOIS EDUCATION

Results of this study indicate that public understanding of what is actually being tested and valued by different “standards-based” exams has been grossly distorted by big variations in grading and reporting procedures across tests. The likelihood is high that anticipated declines in achievement on new PARCC assessments will mostly be an artifact of more straightforward reportage that will closely match normalized ISAT, MAP and NAEP results from recent years.

The study suggests that the biggest challenge for new PARCC assessments will have less to do with increasing the rigor and complexity of what we assess than with *identifying and making more transparent* the rigor and complexity that has long been a staple feature of higher achievement on most standardized tests of achievement, aptitude and college/career readiness.

Exploration of the Five Essential Organizational Supports in Illinois

Molly F. Gordon, PhD, Senior Research Analyst
Penny Bender Sebring, PhD, Senior Research Associate and Founding Co-Director
Joshua Klugman, PhD, Senior Research Analyst
University of Chicago Consortium on Chicago School Research

During the first decade of the 2000s, CCSR created the framework of the Five Essential Supports, a comprehensive set of conditions and practices that are linked to improvements in elementary school attendance, reading, and mathematics performance in Chicago Public Schools (Bryk, et. al, 2010). The Five Essentials encompass effective leaders, involved families, collaborative teachers, supportive environments, and ambitious instruction.¹ These supports largely explained why some Chicago elementary schools improved while others stagnated. Over time, CCSR refined the survey items and scales used in the original study to create the 5Essentials surveys for teachers and students.

In 2013, the Illinois State Board of Education (ISBE) administered the 5Essentials surveys to all Illinois public schools. Because the surveys were administered in rural and suburban schools, small and large districts, and high schools, all of which were not part of the original study, we are able to learn how the 5Essentials manifest themselves in a variety of school contexts. The goal of this study is to further knowledge around the Five Essentials Framework by examining the results of the 5Essentials surveys across Illinois. The purpose of this analysis is to deepen our understanding of how schools across the state fare on the 5Essentials and to determine whether strength on these organizational supports is related to growth in student outcomes.

Our study addresses these research questions:

1. Are there regions or types of schools where the 5Essentials are stronger or weaker? More specifically do the 5Essentials vary by school contextual, community, and organizational characteristics?
2. Are the 5Essentials positively related to student outcomes?

Using the 5Essentials survey results from 2013, and data obtained from ISBE, we use descriptive statistics to examine the prevalence of the 5Essentials in Chicago and other contexts across the state. We use school level growth models on achievement tests for elementary schools and graduation rates for high schools to see the relationship between the 5Essentials and improvements in student outcomes.

In examining schools across Illinois (outside of Chicago) all five of the 5Essentials are positively related to ISAT math and reading growth and levels, even after controlling for school and student characteristics (racial composition, school size, school level, urbanicity, charter status, and SES). Of all of the 5Essentials, supportive environment has the strongest positive relationship with the majority of our student outcome variables. Early results indicate that strengths in the 5Essentials do vary by contextual and organizational characteristics such as urbanicity (urban, suburban, town, rural), building level (elementary/middle, high school), and district size (K-12 enrollment).

¹ The labels for the Five Essential Supports have changed over time. The original labels were: school leadership, parent-community ties, professional capacity, a student-centered learning climate, and instructional guidance.

Use of Illinois 5Essentials Survey Data

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The primary purpose of this study was to examine how Illinois school districts are utilizing the Illinois 5Essentials Survey results, particularly for school improvement, to determine challenges to successful implementation, and to make recommendations for improvements to the 5E Survey and implementation process for statewide use. Developed by the University of Chicago Consortium on Chicago School Research, the 5Essentials Survey of Learning Conditions (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010) measures PK-12 schools' instructional environment, based on teachers' and students' input in five areas identified as critical for school success: Effective Leaders, Collaborative Teachers, Involved Families, Supportive Environments, and Ambitious Instruction. We also summarize district/school stakeholders' familiarity with the 5E Survey, perceived value of the survey, preferences for training, levels of supports, and reasons for not using the 5E Survey data.

Using the conceptual framework developed by Means, Padilla, DeBarger, and Bakia (2009) for data-informed decision making, we used a mixed-methods approach to determine the supports and challenges for using the 5E data for decision-making. Fifteen Illinois school districts were selected as study sites for further in-depth investigation. Interviews with 79 district/school administrators and school personnel involved in school improvement planning (SIP) teams during May–June, 2014, as well as document review of Rising Star school improvement plans were key sources of data. This information was supplemented with data from a statewide survey of district/school leaders conducted in early 2014 by the Illinois State Board of Education (ISBE) that solicited their experiences and opinions of the 5Essentials Survey and reports.

Use of the 5E data varied greatly among the participating districts, ranging from fairly extensive use to no use at all. The majority of the districts, however, fell somewhere in the middle, using the 5E data for a limited number of activities. Districts used the 5E data most often to share with principals, SIP teams, or their entire teaching staff. A few districts used the 5E data to develop new programs (e.g., freshmen monitoring program). Most of the participants expressed some concerns about the 5E data. The main concerns were credibility of data, utilization of alternate climate surveys, and being overwhelmed by other mandated activities. Many of these districts still utilized the data, working within their perceived constraints, while other districts simply did not utilize the data due to their strong concerns. Suggestions for improving the 5E Survey included increase marketing of the survey to increase buy-in, increase breadth of participation and response rates, roster surveys to decrease invalid respondents, improve survey items, change the survey timing to reduce burden, and provide more actionable feedback. Steps to address some of these issues are currently underway, which will likely increase buy-in in the future. Additional strategies such as training or external resources to increase districts' capacity to analyze and apply the 5E results to school improvement planning may be needed in districts with fewer data supports and emerging data-based cultures. A positive environment in which districts are interested in collecting school culture and climate data from their stakeholders to improve their schools currently exists in Illinois. The ability to capitalize on and cultivate these positive attitudes to increase utilization of the 5Essentials data, or other climate survey data, will be greatly influenced by addressing the concerns identified by its stakeholders.

Taking the 5 Essentials to Early Education: Merging Early Childhood and K-12 Research in Support of School Improvement

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The Ounce of Prevention Fund (Ounce) and the University of Chicago Consortium on Chicago School Research (CCSR) are in partnership to apply and adapt CCSR's five essentials (5E) framework and surveys to early childhood education. This session will address two lines of ongoing work based on CCSR's 5E framework for school improvement.

The 5E framework recognizes that education organization, as defined by five essential supports—school leadership, professional capacity, student-centered learning climate, parent-community ties, and instructional guidance—drives better instructional practices in the classroom and results in higher student engagement and achievement. A most important contribution of this framework for early childhood education is the paradigm shift that leadership and organizational conditions actually reach in and make it more or less likely that teachers will be effective in their daily work to engage families and teach young children.

The Research: i3 Professional Development (PD) and Survey Adaptation. Our presentation will focus on two new areas of research and development that are bringing the 5E framework to the early education field. The first—an Investing in Innovation (i3) project being conducted by the Ounce—explores the constructs of the 5E framework with program leaders and supervisors to build instructional leadership practices and program-embedded routines for continuous professional learning and improvement. The second—a joint project between the Ounce and CCSR—scientifically adapts the existing 5E surveys for fit, feasibility, and use in early education settings.

Research design. An external, quasi-experimental study is evaluating the implementation and impact of the i3 development project, with tests of impacts at both classroom and child levels. The purpose of the implementation study is to specify key inputs and activities of the 5E-based PD and to link implementation fidelity to effectiveness (teacher and leader growth and change).

In addition, the Ounce and CCSR are adapting the existing 5E teacher survey, currently used in K-12 settings, and developing new items for a parent survey that together measure the 5E constructs in early education settings. This work includes drafting survey items; conducting cognitive interviews, focus groups, and interviews with early education parents and staff to evaluate item interpretation; pilot testing of survey items; and Rasch analyses to assess the internal validity of the items.

Findings. We will present initial findings from the i3 development project. Formative assessment of knowledge acquisition, content analyses of survey and interview data, and field observations of practice evidences robust uptake of knowledge and dispositions congruent with the 5Es. We have evidence that our job-embedded professional development is leading to sustained practice changes supporting teachers. We will also present initial adaptations of the 5E surveys for use in early education settings. The educator survey was first piloted in 2014 and performed very well psychometrically.

Implications for Policy. This research and development partnership between CCSR and the Ounce will have significant and field-building implications for research and practice and provide a much needed framework and measurement system for early education quality improvement. This unique partnership will ensure that research and best practice from both K-12 and early education landscapes inform the development of the new framework. The goal of this research partnership is to establish a comprehensive, empirically grounded framework and survey tool that early childhood leaders, educators, and parents can draw on as they work to improve children's learning.

The Geography of the New Teacher Pipeline

Bradford R. White, Senior Researcher
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Research has shown that teachers significantly contribute to the success of students, but a number of studies have shown that teachers are sorted inequitably across schools and districts in a way that significantly disadvantages non-White, low-income, and low-performing students and schools (see, e.g., Rivkin, Hanushek, & Kain, 2005; Lankford, Loeb, & Wyckoff, 2002; Loeb, Kalogrides, & Horng, 2010; White, DeAngelis, & Presley, 2008). As a result, a great deal of attention is being paid to the equitable distribution of teachers, as evidenced by the U.S. Department of Education's (2014) new "Excellent Educators for All" initiative which will require every state to produce a comprehensive teacher equity plan by April 2015.

Few previous studies have investigated how the geographic sorting of teachers occurs. Both Boyd, Lankford, Loeb, and Wyckoff (2005) and Reiningger (2011), using New York State and national datasets, respectively, found the spatial geography of new teacher labor markets to be very small, which has important implications for their recruitment and distribution. For example, Boyd et al. (2005) found that 61% of first-year public school teachers in New York State worked in schools within 15 miles of their hometown, and 85% worked within 40 miles. Reiningger (2011) reported that new teacher labor markets tend to be more limited in scope than those of similarly-aged college graduates in non-teaching occupations (Reiningger, 2011).

Both Boyd et al. (2005) and Reiningger (2011) also reported some differences among teachers by locale type with somewhat smaller markets in urban areas, which is not surprising given that the number of job opportunities differs across locale types. These studies also found somewhat larger labor markets for teachers with stronger academic qualifications (as measured by standardized test scores), but no differences by gender. Reiningger (2011) also showed that beginning non-White teachers were more likely to locate within 20 miles of where they attended high school than beginning White teachers. Cannata (2008) has also found evidence suggesting that new teachers tend to choose schools which contain students sharing their race. Others (Stinebrickner, Scafidi, & Sjoquist 2005; Reichardt, 2000) have found that teachers with higher academic qualifications tend to choose higher performing schools with lower proportions of non-White students, which may result in a cycle whereby better academically qualified teachers are recruited to schools that are already performing at a relatively high level and underperforming schools tend to attract teachers who are less academically qualified.

Our study builds on this existing literature and explores the geographic components of new teacher labor markets through three primary research questions:

1. What does the spatial geography of new teacher labor markets look like in Illinois?
2. Does the spatial geography of new teacher labor markets in Illinois differ based on teachers' personal and other characteristics?
3. What is the relationship between the demographics of the high school a teacher attended as a student and the demographics of the school in which they initially teach?

We investigated these questions using descriptive statistics from a longitudinal study of two cohorts of Illinois public high schools graduates, representing 7,209 new Illinois public school teachers who began teaching between 2006 and 2011. In this session, we will present initial findings from this ongoing study.

Harnessing the Power of Research to Inform Hiring and Increase Student Achievement

Sean Gyll, PhD, Chief Psychometrician
Derrek Lyons, Director of Partnerships
TeacherMatch

Teachers are the most important factor in a student's growth. Yet very little effort has been placed into making sure they are hired with scientific precision. How can school districts accurately identify teacher candidate performance? Advances in modern test theory and machine learning have made it possible to create a tool that predicts the impact that a teacher candidate will have on student achievement. Learn more about one of the most robust teacher effectiveness research studies ever conducted, and what the findings reveal about identifying teacher candidates who are most likely to improve students' educational growth. The presentation will feature a teacher effectiveness research study involving a research consortium from University of Chicago, TeacherMatch, Northwest Evaluation Association, Education Analytics and University of Utah.

Teacher Attrition in Early Childhood, Elementary, Middle Level, and Bilingual Education Employment in Illinois: Preliminary Evidence and Potential Implications

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Steven B. Mertens, PhD, Associate Professor, School of Teaching and Learning
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This large-scale, longitudinal study seeks to examine factors effecting teacher employment and persistence between 1996 and 2013. The study began in 2002 and due to recent changes in the availability of data sources, has undergone a major design change. The study involved the mining and analysis of ex post facto data to determine the impact of the type of preparation method on teacher attrition rates while controlling for various individual characteristics. The population for this study consists of over 8,000 early childhood, elementary, middle level, and bilingual education graduates from Illinois State University between 1996 and 2013. The data sources for this study were derived from multiple databases including, the ISU Teacher Education Center, the ISU student database maintained centrally by the University, and the Teacher Data Warehouse.

The major re-design of this study due to data availability and constraints will be presented. This presentation will provide participants with preliminary analysis and findings along with implications for Illinois education and specifically teacher preparation institutions. As mandates increase for institutional accountability of candidate performance and subsequent candidate tracking, this presentation will most importantly provide a discussion of the design, analysis, findings, and difficulties related to substantive candidate tracking and employment trends.

Outmigration and Human Capital: Homeward Bound or Gone for Good

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Illinois Education Research Council

Cecile Dietrich, PhD, Consultant

Rationale: Illinois has a long and well documented history of exporting significantly more of its high school graduates to out-of-state colleges than Illinois higher education institutions are able to attract from outside the state (Barbett, 1996; Gossman, Nobbe, & Patricelli, 1968; Johns & Viehland, 1989; NCES, 2010; U.S. Department of Education, 1998; U.S. Department of Education, 2010). It has long been assumed that states with high rates of outmigration suffer in the long term as students who outmigrate are more likely to stay out of state upon graduation than their counterparts who enrolled at in-state institutions. This represents a significant loss of tax revenue for the state (Smith & Wall, 2006). Research has also shown that the students most likely to outmigrate are those deemed most ready for college. Given the level of students' academic and workforce potential, outmigration represents a significant loss of human capital (Smalley, Lichtenberger, & Brown, 2010). Through this study we determine the extent to which outmigrants return to the state of Illinois for employment.

Methods

Data Sources: Data from ACT and the National Student Clearinghouse specific to bachelor's degree earners from 2006-2010 emanating from the Illinois high school graduating class of 2003. Illinois-specific earnings outcomes were tracked from bachelor's degree completion until the end of 2012.

Research Design: Quantitative and quasi-experimental; nearest neighbor propensity score matching with a post-treatment adjustment. Matching with replacement was used.

Analysis: Estimates of treatment effect made by matching outmigrants with a group of observationally equivalent stayers. Each outmigrant was matched to one stayer who originally emanated from the same geographic area in Illinois, graduated from an equally selective four-year college, and earned the same degree (based on major).

Findings

Who Outmigrates? Outmigrants tended to demonstrate stronger academic qualifications than their peers who attended Illinois-based colleges. Outmigrants were much more likely to emanate from high schools with better aggregate test scores and relatively fewer low income students.

Who Returns to Illinois for Work? Although two-thirds of the outmigrants eventually returned to Illinois for work, as a group they were significantly less likely to gain employment in Illinois relative to stayers who experienced an Illinois employment rate of 92%. Among the outmigrants with bachelor's degrees, those with stronger academic profiles were less likely to obtain Illinois employment upon graduation. Further, the outmigrants with the degrees deemed most important for the Illinois economy (namely STEM degrees), were even less likely to return to Illinois for employment.

Consequences of Outmigration to Illinois. Although the cumulative rate of employment in Illinois among outmigrants was somewhat higher than what was established with previous research using a nationally representative sample (Adelman, 2004), outmigrants experienced significantly lower rates of Illinois-specific employment relative to the stayers. This resulted in substantially lower aggregate Illinois wages among the outmigrant group. Relatedly, substantially fewer outmigrants reached the various Illinois-specific earnings thresholds. This in turn, represents some of the negative economic impact that outmigration has on the state of Illinois.

Policy Recommendations-Illinois should consider the following:

- Entering into data sharing agreements with neighboring states to provide a more complete picture of the workforce outcomes of all of its high school graduates.
- Increasing affordable postsecondary options for Illinois students. Dean, Hunt, and Smith (2006) found that both parents and students believe that there are few Illinois institutions that provide affordable, quality education.
- Actively recruiting outmigrants to return to Illinois for work, especially those with degrees in critical areas, such as STEM or Health Science.

College Enrollment Patterns for Rural Indiana High School Graduates: Preliminary Results

Matt Burke, Researcher
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REL Midwest at American Institutes for Research

Purpose. This study examined rural–nonrural differences in academic preparation, presumptive college eligibility, college enrollment patterns, and distance traveled to attend college among Indiana’s 2010 high school graduates using descriptive and geographic data representations.

Methodology. The researchers obtained student-level, school-level, and university-related data from Indiana’s state longitudinal data system on the 64,534 students who graduated from high school in 2010. This sample was used to assess disparities in academic preparation, free and reduced-price lunch (FRPL) eligibility, and two- and four-year public college enrollment for rural versus nonrural students. Of the original sample, 30,624 graduates entered a public two-year or four-year college in the fall immediately after high school graduation. This subsample was used to assess (1) average distances traveled to attend college, (2) presumptive college eligibility, (3) differences between two-year and four-year college enrollment, (4) differences in enrollment related to differences in colleges’ selectivity, and (5) degree of “undermatching” (i.e., enrolling in a college less selective than one’s presumptive eligibility suggested) for rural and nonrural graduates. Chi-square tests were used to determine rural–nonrural differences in academic preparation, FRPL eligibility, and college enrollment. GIS analysis was used to assess differences in distance traveled to attend college, as well as the proximity of colleges to Indiana public high schools. Two hierarchical generalized linear models were used to predict (1) enrollment in a two-year versus a four-year public Indiana college and (2) enrollment in a public Indiana college less selective than the level for which a student is presumptively eligible (as opposed to enrolling in a college either matched to or higher than a student’s presumptive eligibility level) for rural versus nonrural high school graduates.

Results. Preliminary results indicate that rural high schools tend to have lower percentages of students eligible for free or reduced price lunch, and are farther away from two- and four-year public colleges than nonrural high schools.¹

Recommendations. More information is needed about how students learn about their college options, what support structures are in place in order to assist students in enrolling in college, and how these processes and supports differ between rural and nonrural schools. Rural and nonrural student aspirations also should be examined in order to determine differences in the reasons for which students choose to attend different college types. Finally, there may be Indiana-specific factors influencing the two-year college enrollment rate of rural high school graduates that are unrelated to poverty and socioeconomic status. It may be most appropriate for state policymakers to examine the unique characteristics of their own rural populations whenever possible and to use caution when making decisions that are based on information gathered from studies using nationally representative samples.

¹ The full results of this study are forthcoming. Those interested in reading the full report can sign up for IES Newsflash at www.ies.ed.gov.

The Predictive Analytics Reporting Framework: Mitigating Academic Risk Through Predictive Modeling, Benchmarking, and Intervention Tracking

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Predictive Analytics Reporting (PAR) Framework

The Predictive Analytics Reporting Framework is a non-profit multi-institutional data mining collaborative. It is comprised of two-year and four-year, public and proprietary, traditional and progressive institutions who are contributing their anonymized student data and expertise to identify common factors contributing to student loss and find effective practices that measurably improve student momentum and progression in U.S. higher education. The PAR program has aggregated student data from over 20 post-secondary institutions for the years beginning with the 2009/10 academic year, over 1,700,000 anonymized student records and 8,100,000 institutionally de-identified course level records. Perhaps most importantly, contributing institutions have collaborated to produce common definitions of progression and retention and the factors influencing them, allowing PAR researchers to develop predictive models at both the local (institution) level and across institutions. In addition, the PAR project has developed two tools that help institutional leaders explore risk factors and catalog practices to address them. The first of these is a benchmarking tool which provides users with a dashboard through which they can explore specific outcomes for particular populations across time, compare local outcomes semester to semester or compare one's own institution to similar institutions or the entire group of PAR institutions. The second tool, the Student Success Matrix (SSMx), provides an automated structure that helps institutions inventory, organize and conceptualize interventions aimed at improving student outcomes along two major dimensions: 1) predictors of retention and progression and 2) the timing of the intervention in the context of students' academic life cycles.

Predictors of Science Anxiety: Gender and Mindset Orientation of 9th Grade Students

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This study sought to determine if demographic factors and mindset predicted science anxiety in 9th graders. Science anxiety, a domain specific form of academic anxiety, is related to a variety of negative consequences for students including reduced engagement and achievement in science class. This study is framed within control-value theory, which emphasizes the importance of appraisals of control and values to the arousal of achievement emotions (Pekrun, 2006). Accordingly, anxiety is described as an achievement emotion which signals students whether they can attain success or avoid failure. Students may experience academic anxiety in situations where they feel that they have little control over their ability to succeed or avoid failure in an academic situation. Previous research indicates that science anxiety may impact certain groups of students more than others

The concept of mindset has often been discussed in relation to student beliefs about ability and effort. Students with a fixed mindset believe that their qualities, such as intelligence or ability in a particular school subject, are unchangeable while students with a growth mindset believe that these qualities can be changed through effort (Dweck, 2000). Previous research indicates that a growth mindset is related to resilience factors that can help students when they experience anxiety related to social or academic adversity (Yeager & Dweck, 2012). Little research has been done to investigate the relationship between mindset and science anxiety in students.

Data used in this study were collected as part of the Incremental Mindset and Utility for Science Learning and Engagement (IMSUCLE) Project. The sample consisted of 259 9th graders enrolled in a general science course at a single comprehensive high school located near a large metropolitan area in Illinois.

Results indicated that growth mindset, gender and the interaction between gender and low income/non-low income predicted differences in science anxiety. Specifically, boys in the low income group reported more science anxiety, but surprisingly girls in the low income group reported less science anxiety. Having a growth Mindset predicted less science anxiety, but the interaction between mindset and demographic variables did not. Findings suggest that interventions to reduce science anxiety and increase growth mindset should be considered. Implications for Illinois Educational Policy will be discussed.

Beyond the Screen: An Investigation of the Offline Factors that Influence Students' Online Literacy Learning in Two Language Arts Classes

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Despite considerable evidence that literacy is social, ideological, and highly complex, much of schooling continues to rest on the assumption that literacy is individual, neutral, and easily measured (New London Group, 1996; Street, 1984). This assumption, reinforced by accountability policies, is problematic for all students but especially damaging to students from non-dominant communities, those identified within schools as different in terms of categories such as race, culture, language, disability, and low income (Gutiérrez, Morales, & Martinez, 2009). There are hopes that the use of online learning technologies will promote broader definitions of literacy that will benefit all students; there are also fears that online learning technologies will reinforce narrow definitions of literacy and further increase inequity. These hopes and fears are legitimate (Warschauer & Ware, 2008). While online learning environments may offer transformative potential, even the most innovative are neither created nor used within a vacuum. Instead, a broad range of offline factors inevitably influences their design and implementation (Kaptelinin & Nardi, 2006). In schools these may include, but are not limited to, classroom discourse, curricular materials, learner identities, and educational policies.

This research project broadens the study of students' literacy learning in educational settings by considering offline factors as constitutive of students' online literacy learning. This comparative case study is situated in two English language arts classes taught by the same teacher (one with a mandated curriculum and one without a mandated curriculum) in a Midwestern junior high school with a diverse, low-income population, impacted by accountability policies. The study addresses the following research questions: What was the nature of students' online literacy learning in each of the two English language arts classes? In particular, what offline factors were evident and how did these factors influence students' online literacy learning and the literate identities available to students?

Framed by cultural historical activity theory (CHAT) (Leontev, 1981; Vygotsky, 1978), this study employed ethnographic methods to investigate students' online literacy learning over the course of the 2012-2013 school year. Activity systems analysis (Engeström, 1987) and a tracing methodology (Prior, 2004) guided data collection and analysis. Findings indicated that students' online literacy learning in the two classes was unequal and inequitable. In the class with the mandated curriculum, student activity was premised on a didactic pedagogy focused on reading strategies, and students were positioned as struggling learners in need of remediation. In the class without the mandated curriculum, student activity involved composing, and students were positioned as collaborative creators; their activity, however, was also restricted. In both classes, offline factors significantly influenced online activity, including ideologies of literacy and schooling, teacher initiating texts, and the accountability policy context.

In the coming years students will increasingly use online learning environments as part of their everyday activity in schools. While this prospect is almost inevitable, it is far from clear that online environments will promote broader and more equitable definitions of literacy and learning for all students. This study reinforces the importance of attending to the influence of offline factors when considering the use of online technologies in K-12 settings. Drawing on Cole and Griffin (1983), the researcher argues that if online learning environments are to promote educational reform premised on re-mediation (i.e. fundamentally changing students' learning ecologies) rather than remediation (i.e. attempting to fix students' "deficits"), then the design, implementation, and use of online learning environments need to be considered alongside more expansive educational reforms.

A Quantitative Analysis of Resiliency and Academic Achievement Among Multiracial Students in Urban High Schools

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The purpose of this study is to explore the six attributes of the Resiliency for Academic Success framework and the possible relationship to academic achievement among urban high school students with a focus on multiracial students. The study may provide school leaders with important information for creating professional development workshops on ways to incorporate resiliency factors for academic success into the curriculum as well as provide information on effective practices to teach multiracial students in diverse urban public high schools.

The 2000 U.S. Census permitted individuals to check two or more boxes on the racial identification question if they identified as belonging to two or more racial groups (Rockquemore & Brunsma, 2008), revealing a multiracial population of 1.8 million. By the U.S. Census in 2010, the number of individuals of claiming multiracial identities increased to 4.2 million (Saulny, 2011). Additionally, during that decade multiracial children increased by 50 %, which makes this group the fastest growing student group in the U.S. (Saulny). Specifically, Fryer, Kahn, Levitt, & Spenkuch (2008) found 41 % of all students were categorized as minority compared to only 28 % in 1994. Traditionally in the United States, minority students have been defined as solely African-American, Hispanic/Latino, and Asians, but as the number of multiracial students has increased in the population, questions have risen about how to categorize children born to parents with different racial backgrounds (Rockquemore & Brunsma, 2008). Furthermore, the rise in racial diversity in public schools has indicated the need for school personnel to support students from different racial backgrounds, including multiracial students, in meeting state benchmarks in reading and mathematics. Multiracial students (n=85) in this research had the following specific racial category combinations: Caucasian/Hispanic (N=32), Caucasian/African-American (N=25), Caucasian/Native American (N=12), Caucasian/Asian (N=8), African-American/Asian (N=3), 3 Groups or more (N=8).

Trueba identified six resiliency traits for academic success in his framework: intelligent planning in the pursuit of major goals, delaying gratification for the sake of future rewards, willingness to learn a new language and culture, ability to appreciate and use family support during crises, ability to use multiple personal identities in the process of communicating with others, loyalty to school and family and the wisdom to pursue academic excellence with the love and support of teachers and parents, and spiritual strength based on religious, cultural, and linguistic values. Academic achievement was measured by reading and math scores, which are mandatory assessments required for graduation in the state of Illinois.

This study potentially provides information regarding knowledge pertaining to the multiracial student experience in a large, suburban, racially diverse high school in relation to other students. The study may provide school leaders with important information for creating professional development workshops on ways to incorporate resiliency factors for academic success into the curriculum as well as provide information on effective practices to teach multiracial students in diverse urban public high schools.

Does Intellectual Challenge Matter?

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Description and Rationale

To what degree do Chicago teachers provide their students with opportunities to engage in work that develops their abilities to analyze and communicate information in ways that connect to their lives beyond school? In a seminal work by Newmann, Bryk, and Nagaoka (2001) this type of intellectual challenge is called “authentic intellectual work.” The authors’ goal was to provide general standards for the intellectual performance necessary for student success in contemporary society. They posit that adults that are successful in a range of occupations must solve complex problems that are often novel or unique. Finding solutions requires individuals to “construct” new knowledge and communicate solutions. Newman et al., therefore, describe three criteria for authentic intellectual work: construction of knowledge, elaborated communication, and value beyond school. Based on three years of data, the authors found that even after controlling for student demographics and prior achievement, in classrooms with high-quality assignments, students’ learning gains were 20% greater than the national average; however, in classrooms where assignment quality reflected less demand, students gained more than 20% less than the national average (Newmann, 2001). This project, part of a larger study of teacher assignments, seeks to discover if these findings hold today.

Data Sources and Methods

In order to understand the intellectual quality demanded in assignments and produced in student work, we collected 99 math and writing assignments and 873 pieces of student work during the 2013-14 school year. We also interviewed the 50 teachers who generated these assignments to understand their decision making around them. Our data come from 20 CPS schools that are generally representative of the district. Assignments and student work were scored using the same rubric used by the original study (Newmann, Bryk, and Nagaoka, 2001). We used Multi-Facet Rasch analysis to define differences among raters and adjust scores based on those analyses. For students in tested grades, we will inspect whether students who have been exposed to assignments with higher scores have higher test score gains. For all students we will examine whether those who were exposed to tasks with higher intellectual demand produce work of higher authentic intellectual quality.

Implications for Illinois Education Policy

Although this work was not explicitly about Common Core, it could help inform the degree to which students will produce high quality work when teachers give assignments that encompass demands from our rubric—demands that are similar to those of the Common Core (e.g., analysis and synthesis of text, elaborated communication). Additionally, if we replicate findings from 2001—that spending time on work that calls for critical thinking and creativity does not detract from test score gains—then we can help alleviate schools’ concerns that attempting this work will negatively affect test scores.

Measuring Student Growth in Illinois

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The Performance Evaluation Reform Act (PERA) requires the measurement of student growth for the purpose of educators' performance evaluation (Illinois Administrative Code Part 50, Sub. B, Sec. 50.110). The measurement of student growth has become a primary concern for educators across Illinois as the implementation date for many districts is fast approaching. To support the implementation of PERA, the Illinois State Board of Education (ISBE) has adopted the Student Learning Objective (SLO) process. The SLO process helps teachers and evaluators organize evidence of student growth over a specified period of time. This process is appropriate for all grades and subjects, and is attainable for all districts independent of their financial status or assessment expertise. In addition, the SLO process actively engages educators and administrators in the measurement of student growth, subsequently increasing the use of timely student assessment data to improve teaching and learning.

In addition, ISBE has adopted a measurement model that compliments the SLO process. The measurement model does not require the use of statistics or psychometrics, but supports a valid, reliable, and transparent evaluation plan for all districts, teachers, and school administrators. The objective of this presentation is to engage the Illinois Education Research Council (IERC) community in a meaningful dialogue concerning the implications of PERA on the measurement of student growth, assessment and data literacy, and the SLO process on teacher evaluation in Illinois.

Use of Value-Added and Observational Ratings to Measure Educator Effectiveness: Evidence from the Hillsborough County School District

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Nandita Gawade, Researcher
Yang Caroline Wang, Research Associate
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The final report from the Bill and Melinda Gates Foundation’s Measures of Effective Teaching (MET) project, a groundbreaking study on identifying effective teaching, argued that “Identifying great teachers requires multiple measures. While states and districts embrace multiple measures...many are also combining measures into a single index.... The challenge is to combine measures in ways that support effective teaching while avoiding...unintended consequences....” In this paper we draw on data from Hillsborough County Public Schools to evaluate the efficacy of the district-wide multiple measures system. This system is unique in that it includes principal and peer observation ratings (based on the Charlotte Danielson Framework) and value-added ratings for virtually all teachers in the district. This system includes information on teachers from over 700 courses, covering all grades and subjects; we limit our focus to the middle grades.

We compare two methods of aggregating observational data: the district’s method, combining the peer and principal observers’ ratings according to a weighted average constructed by the district, and a multi-faceted Rasch model, in which each component has its own effect on the rating, and therefore its own measure of difficulty or leniency.

We find that the correlation with value-added results is higher for the Rasch measure than for written evaluations, while the correlation with student pretest is also typically higher for the Rasch measure. We show that evaluation systems that do not account for differences in the leniency of observers, the timing of observations, and other factors, yield different results from systems that do account for these factors. In addition, the Rasch model provides a measure of the precision of the observational measures, which could be included in an overall evaluation as a margin of error.

Teacher Evaluation in Practice: Findings from the First Year of Chicago's REACH Students

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Past methods for evaluating teacher effectiveness in Chicago and across the nation have had well documented shortcomings. Previous teacher evaluation systems produced the same general ratings for all teachers, providing little information on which teachers excelled or which needed improvement. They failed to provide a way for teachers to receive feedback and rarely provided actionable information to teachers about how they could improve their practice. National policy has emphasized overhauling these systems to include multiple measures of teacher performance, such as student outcomes, and structuring the evaluations so they are useful from both talent management and teacher professional development perspectives. In the fall of 2012, Chicago Public Schools (CPS) instituted a sweeping reform of its teacher evaluation system with the introduction of REACH (Recognizing Educators Advancing Chicago) Students. This study uses evaluation and personnel data from 2012-13 to identify implementation challenges and successes from the first year of implementation of REACH. Our findings identify and explore the following concerns (1) policies and procedures for incomplete data (2) the use of school-wide value-added in teacher evaluation score (3) the monitoring and calibration of evaluators.

Validating the Danielson Framework for Teaching for Evaluating and Growing Teachers' Practice in PreK-3 Classrooms

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Researchers at the Center for the Study of Educational Policy (CSEP) at Illinois State University are conducting a study to validate the Danielson Framework for Teaching in PreK-3rd grade classrooms in Illinois. In recent studies, the Danielson Framework has been validated for 4th grade through 12th grade teachers (Goe, Bell & Little, 2008; MET Project, 2013; Sartain, Stoelting, & Brown, 2009). Conducting a validation study of the Framework has multiple purposes: a) to ensure that the framework provides accurate and reliable data that PreK-3rd grade teachers and their supervisors can use to identify strengths and weaknesses in order to promote teachers' growth, and b) to ensure that the data from the Framework's observations of professional practice are consistent with early childhood developmentally appropriate practice.

This paper will present the findings of a comparative content analysis as the first study of the validity study and relationship of the Danielson Framework with accepted standards of teaching and learning practices in early learning classrooms. The Framework was compared with several other teacher standards such as the National Association for the Education of Young Children, Gateways to Opportunity benchmarks, and Division of Early Childhood, and other standards and observation rubrics. The analysis was conducted at two levels: a conceptual analysis, and a language analysis. We found that at the conceptual level, the Danielson Framework was very similar in terms of the principles and philosophy of effective teaching (e.g., constructivist, inquiry-based learning, meeting the needs of diverse student populations, promoting life-long professional learning). However, the analysis showed differences in the language when describing similar practices (e.g., play-based learning versus inquiry-based learning).

The paper will also introduce the second phase of the research which is a mixed methods research design with seven school districts and a community-based early childhood center throughout Illinois. The Framework will be validated using quantitative correlation measures using inter-rater reliabilities of observational data between external observers and evaluators, as well as a correlational analysis of student growth data and observation data on the Framework. Finally, a qualitative study of the experiences of PreK-3 evaluators and teachers will be conducted consisting of surveys and interviews with research participants to elicit responses on their experiences with the Framework in the PreK-3 grade span and teacher evaluation processes for early childhood classrooms.

Implications

The results of this study have implications at state and local levels. At the state level, the findings will give guidance to state policymakers, in particular the Performance Evaluation Advisory Committee, about effective practices in evaluating PreK-3 teachers and challenges associated with evaluating this population of teachers. At the district and school levels, the findings will offer similar guidance in how leaders and teachers design and implement their teacher evaluation process in early learning classrooms that move beyond compliance and accountability and toward improving teachers' professional practice.

How Can We Improve the Quality of Early Mathematics Pre-Service Teacher Education? Qualitative Data from a Professional Learning Community of Teacher Educators at 2- and 4-Year Colleges

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In Illinois, undergraduate ECE programs in 2- and 4-year colleges are a major site of teacher preparation for both childcare and Head Start programs, and yet early math is sorely lacking from the coursework in these programs. To ensure mathematically competent teachers in our early childhood classrooms - and so to help our young children be prepared for elementary-level mathematics - we must increase and enrich the time dedicated to preparing these teachers to teach math. Through this on-going work, the Early Math Collaborative (EMC) at the Erikson Institute aims to help teachers of young children be better prepared to do just this.

We are using a whole teacher approach in our professional development for college ECE faculty, which aims to foster all aspects of a teacher's development, including attitudes, knowledge and skill, and practice (Chen & Chang, 2006). Our approach is multidimensional, domain specific, integrated and developmental.

We have collected data from faculty in ECE programs in Chicago 2- and 4-year colleges, using focus groups, field tests, and an on-line discussion forum. Thus we are using this qualitative data to understand how early math is taught in community colleges and the impact of our intervention, as well as to inform our continuing dissemination.

- **Focus Groups.** Twenty faculty who have taught ECE courses to undergraduate participated in one to four discussions focused on their experiences in integrating and implementing the EMC materials in teaching their courses, as well as their experience of the summer institute. The focus groups were held at Erikson Institute and were video and audio recorded, and partially transcribed. An emerging theory approach was used to code the focus group transcripts.
- **Field Tests.** Six faculty were recruited to be field testers who took detailed notes after using Erikson materials in their classrooms. These classrooms were also observed by an EMC researcher twice per semester. Some observations were video-recorded for further analysis.
- **On-line Discussion Forum.** Twenty faculty have participated in an on-going on-line discussion about the struggles and successes of using EMC materials to enhance their teaching of foundational mathematics to ECE students.

Initial analysis of the data suggests the following:

- Our collaborative model supports ECE faculty as they reflect on and refine their teaching practice to incorporate new strategies to deepen pre- and in-service teachers' understanding of early mathematics and how to teach it.
- Faculty members were eager to learn, implement, and share the Big Ideas and other Early Math Collaborative materials; their teaching changed for the better.

Over the past three years, we have learned much about how college ECE programs function and about their strengths and needs in early math. We have incorporated what we have learned into the development of materials and training to strengthen early mathematics education in teacher education programs. We continue to disseminate the learning from this project to a wider audience of pre-service and in-service teacher educators throughout Illinois. The quality of an undergraduate teacher education program relies on the quality of its instructors, their content knowledge, and their approach to students.

Impact of a Professional Development Model to Enhance Head Start Teachers' Math Awareness & Teaching Efficacy

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The aim of the present study was to examine the effectiveness of a professional development (PD) model that incorporated training, mentoring, and modeling strategies to enhance Head Start teachers' personal beliefs and abilities to teach mathematics to young children. Data was collected using a mixed method sequential QUAN+QUAL design. Quantitative results suggest a significant growth in teachers' teaching-efficacy beliefs as a result of participating in the PD program. Teachers became more confident in their teaching competency, subject content knowledge, accountability for students' mathematical achievement, as well as the ability to engage students into math learning. The following qualitative data analysis revealed potential reasons for teachers' teaching-efficacy variations. This report offers further implications for PD trainings for early childhood teachers.

Innovations Early Math Professional Development Program: Two-year Impact Evaluation

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The purpose of this presentation is to report on the 2-year evaluation of an early math Professional Development (PD) program for preschool through third-grade students. What differentiates this PD program from other programs is that it is grounded in the Whole Teacher Approach to Development, which calls for simultaneously targeting teachers' attitudes, knowledge, and practice in order to affect teacher change. Sixteen elementary schools in the Chicago Public Schools district participated in this study. Eight schools were assigned to receive the intervention. Propensity score matching techniques were employed to find eight comparable schools to serve as a comparison. All preschool through third grade teachers in the intervention schools participated in the early math professional development program; whereas teachers in the comparison condition participated in business-as-usual professional development. At the beginning of Year 1 and the ends of Year 1 and 2, teachers completed math attitude and pedagogical content surveys at the beginning and end of the study and were observed conducting a math lesson while approximately 7-10 students from each classroom completed measures of mathematics achievement. To evaluate the impact of the PD program on student outcomes, a series of multilevel analyses (HLM) were conducted to take into account students nested in schools. No intervention effects were found after the first year of the project. However, the analyses indicated that the intervention had a differential effect for students belonging to different age groups after two years of implementation; that is, the youngest students enrolled in intervention schools at the start of the study made significant and substantive gains in mathematics achievement after two years compared to their peers in the comparison schools. No improvement was observed for older students enrolled in intervention schools. Analysis of covariance, controlling for baseline performance, revealed that intervention teachers had significantly higher confidence in math teaching and marginally significantly higher quality math lessons than their comparison peers after two years of the intervention. No significant differences were observed between groups on the measure of pedagogical content knowledge. This study indicates that providing high-quality PD that targets and supports changes in teachers' attitudes and practice has an impact on student gains, particularly for younger students. In addition, this study demonstrates that teacher change takes time and the typical one-shot professional development workshop is not sufficient for long lasting change that can impact student achievement.

The Impact of Faculty Development on Teacher Self-Efficacy, Teaching Skills, and Retention

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In higher education it is recognized there is a lack of teaching knowledge and skills in most academic departments. Although, there is limited research concerning the influence of self-efficacy on teacher effectiveness, current evidence suggests that a strong sense of self-efficacy in college teachers is an essential component for teacher competence. Therefore, a teacher's self-efficacy is believed to influence the teacher's level of performance, choice of tasks, and the amount of effort put into performing those tasks. Addressing the influence self-efficacy has on teaching effectiveness is essential to the development of faculty development programs.

This study involved a two-group pretest-posttest quasi-experimental design. The purpose of this study was to identify if a faculty development program can influence teacher self-efficacy, teaching style/perspective, and teacher competencies. First, data was collected from the intervention group during the initial meeting using the Teacher Self-Efficacy (TSE) scale (Schmitz & Schwarzer, 2000), the Self-Assessment of Teaching Competencies (SATC) which was developed by the PI, and the Instructional Perspective Inventory (IPI) (Henchske, 1989 & 1994). The second data collection point occurred at the end of the spring 2014 semester, with the repeated administration of all three surveys. The control group completed the TSE, SATC, and IPI at two points: August, 2013 and May, 2014. This group did not complete the qualitative open-ended questionnaire.

Teacher self-efficacy, teaching skills, and teaching perspectives were analyzed using Repeated Measures ANOVA and MANOVA to assess for differences within and between groups (experimental and control) in teacher self-efficacy, self-assessment of teaching competencies, and the subscales of the IPI. There was statistically significant difference in the within-subject effect of teacher self-efficacy and the experimental and control group and no significant difference across time. Indicating the faculty development program influenced teacher self-efficacy. Other results will also be discussed.

Faculty development program seems to have an influence on teacher self-efficacy but not necessarily on self-assessment of teaching skill and teaching perspectives. If universities would increase their focus on faculty development, faculty would feel they could be more successful as teachers. Austin (2002) suggests that changes to the atmosphere of higher education require changes in faculty preparation. The changes recommended include: understanding students, learning new technologies, dealing with societal demands for accountability, balancing the tri-fold workload of faculty, and understanding the changing job market. Often for faculty teaching and faculty development is on the bottom of the to-do list. Further research is need to identify if there is a relationship between assessment of teaching skills and teacher self-efficacy. This sample did not include enough participants from minority groups to identify differences. Further research needs to be conducted targeting minority faculty members specifically.

Constructing a Community-Centered Learning Environment: University Instructors' Reflections about the First Day of Class

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A strong relationship exists between university students' perception of the first day of class and their end-of-term satisfaction with the course and the professor (Wilson & Wilson, 2007). Because the first day of class presents an opportunity for faculty members to begin constructing the classroom culture for the remainder of the semester, it is critical to explore the many ways that professors begin to create rapport and build trust with their students during their first class meeting. This study examined how faculty members in a traditional face-to-face undergraduate classroom construct the first day of class to promote the behaviors of rapport, trust, and empathy. Faculty members were first observed in the classroom during their first class meeting, followed by an interview designed to help professors reflect upon their perceptions about how they plan and review the effectiveness of their first day of class. Professors discussed and demonstrated several strategies that help them create an environment that encourages promotive interaction (Johnson & Johnson, 2005) and community-centered learning (Calkins & Seidler, 2011). To create a community-centered learning environment from the first day forward, it is important that educators establish norms that facilitate positive interactions on the first day of class that will likely carry throughout the semester.

Effects of Expanding Summer Credit Recovery in Algebra

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In Chicago, over a quarter of students fail at least one semester of algebra in their ninth grade year, and students who fail both semesters of Algebra I in ninth grade have a 13% chance of graduating in 4 years. Offering credit recovery options is one strategy to respond to high failure rates. If students recover their credits early, they may be more successful in future classes and progress towards timely graduation. There is some evidence from prior literature that intensive remedial programs over the summer improve student test scores when there are strong incentives for students to demonstrate growth. However, there is little evidence about the extent to which standard credit recovery produces similar gains in learning outcomes or improvement in student progression and eventual graduation. This study examines the benefits of offering expanded credit recovery options for ninth grade algebra, relative to business as usual.

In this study, in summers 2011 and 2012, some high schools in CPS were given the resources (funding for teacher salaries, logistical support finding teachers and recruiting students) for sections of second-semester Algebra I credit recovery courses. Researchers ranked CPS non-charter high schools by the number of students who failed second semester algebra in 2010 and considered those with the most failures (above a cut-off) eligible to be invited to participate.

Using difference-in-difference approach, we perform two school-level analyses and one student-level analysis. The first analysis uses a school fixed effect model to examine the intent-to-treat (ITT) effect of receiving an invitation to participate in expanded summer credit recovery. The second analysis examines the local treatment-on-the-treated (TOT) effect of accepting to participate in expanded summer credit recovery. We assume that, conditional on cohort size and failure rates in the current year, the number of failures in a past year (i.e., 2010) is only related to our outcome of interest through participating in expanded credit recovery. Thus, we use eligibility status in a year to instrument for participation. The third analysis examines the local effect of successfully recovering an algebra credit over the summer using a similar instrumental variables approach.

We find that that offering resources to schools to expand credit recovery for ninth graders substantially increases their ninth grade recovery rates. The effect of being offered a chance to participate (ITT) increases recovery rates from 12% to 20% on average and effect of participating increase rates to 27%. Despite these notable changes in recovery rates, preliminary models suggest that schools do not see a detectable benefit from participating in terms of test scores, course-taking, and course performance in students' second year of high school.

While expanding credit recovery options may seem like an attractive strategy to improve future student outcomes and move students further on the path to graduation, the estimated pay-offs relative to the costs imply that expanding summer credit recovery is not a prudent use of resources. While recovery rates increase with expanded recovery options, most students still do not recover, and schools do not see significant increases in student performance. Impacts on graduation (4-year graduation for students in the second cohort will take place June 2015) are pending.

Validating an Early Warning Indicator Analysis to be Used with the ISBE Web Application System

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The Stay In School project, funded by the U.S. Department of Education (ED) High School Graduation Initiative, desired to develop an early warning indicator (EWI) analysis for Cahokia High School with the goal of identifying those students who, after completing 9th grade, were at the greatest risk of dropping out of high school. The objective was to validate and apply the EWI analyses developed at the Everyone Graduates Center at Johns Hopkins University by Robert Balfanz, Vaughan Byrnes, and Martha Abele MacIver (Balfanz & Byrnes, 2010, MacIver, M, 2010). EWI development in high schools, combined with early intervention plans have been shown to proactively address student retention issues before students leave school (Johns Hopkins University, 2014). Further, the pre-existing multiple regression studies from the associates at the Everyone Graduates Center have been validly replicated in different at risk school districts across the United States (Johns Hopkins University, 2014). The researchers were fortunate to receive support from ED to work directly with Byrnes and MacIver to replicate the study and further develop a working EWI for the 2013 school year using 9th grade student data from the 2012 school year.

The Cahokia High School EWI replication/validation study sought to use the original Baltimore framework (MacIver, 2010) and apply it to the students who should have graduated from Cahokia High School in either 2009 or 2010. The key dependent variable was on-time graduation. The four independent 9th grade data variables were (1) number of English class term failures, (2) number of math class term failures, (3) number of serious disciplinary findings resulting in an out of school suspension, and (4) annual school attendance percentage. The data were gathered from the school district's local Skyward student information system. The research team adjusted the 9th grade indicator variables to the following: 2 or more English term failures, 2 or more math term failures, 2 or more out of school suspensions, and less than 90% attendance rate. The researchers found that 72% of the Cahokia 9th grade students who met 3 or 4 of these variables dropped out of school, which was 34% of the total cohort studied. Interestingly, only 36% of 9th grade students dropped out who met 2 of these indicator variables, which helped to establish the EWI threshold. In other words, there appeared to be a "tipping point" for when a student met 3 or 4 indicator variables, which helped the project isolate their efforts to those students at greatest risk of dropping out before they had left school.

The study was put to immediate use at Cahokia High School in the 2013 school year, using 9th grade student data from the 2012 school year. The SIS project developed an early intervention team in coordination with the Cahokia High School School Improvement team to use the EWI to focus on currently enrolled students at high risk for dropping out. The SIS team were trained to use the University of Minnesota Check and Connect Student Engagement Intervention Model in combination with the EWI.

In order to further distribute the analysis, the researchers devised a method to develop the EWI using three data tables from the ISBE Web Application System (IWAS)/Student Information System (SIS). The Cahokia EWI was replicated, with permission, using the IWAS/SIS data approach in 16 school districts for the 2014 school year (Feldmann, 2012). In addition to the EWI research study findings, the researchers will demonstrate how any Illinois school district can develop this validated high school graduation EWI using three data tables from IWAS/SIS.

The Impact of External Thought Partners on District Culture and Improvement

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In 2001 Marquardt School District 15 stood on a precipice. The school board hired a new superintendent, the budget was hemorrhaging, low-trust characterized the relationship between labor and management, and a rapid demographic change that by 2013 more than tripled the percentage of low-income students and also included a reversal in the proportion of white and Hispanic students.

This case study examines the role an independent external partner, the Consortium for Educational Change (CEC), played in helping to create and support the decisive response to the steep demographic and economic challenges to the district's success. In particular, the case study examines the source and results of efforts by the three "anchors"¹—district administration, union and school board—to forge new and more productive working relationships. It describes the efforts undertaken by Marquardt School District 15 since 2002 in partnering and implementing numerous CEC programs and services.

The mixed method case study is based on interviews with 15 administrative and teacher leaders from July 2013 to September 2014 and a comparative analysis of Marquardt's student achievement data with districts having comparable shifts and challenges in demographics. Quantitative data were analyzed via descriptive statistics and the customary phases of qualitative data analysis were conducted (extracting the essence, organizing for meaning, and explaining the findings) using manual coding.² The results demonstrate that, through an emphasis on building a trusting relationship between district administration, teachers, the school board and the community with the help of an external partner, the district was able to significantly improve student achievement while other districts in similar circumstances struggled with comparable changes.

Three key themes emerged from the research: Trust, Collaboration, and Visionary Leadership. First, district stakeholders intentionally entered into a process to build and maintain relational trust to create the environment for district success. Second, and related to the development of trust, district stakeholders began to try to conduct daily business in collaborative ways and with new structures – specifically using interest-based strategies. Finally, Marquardt had a leader who could build and convert the social capital generated by the increasing relational trust into opportunities to lead district improvement.

This case study provides an opportunity to demonstrate how collaborative cultures, structures and processes can be successfully used by school districts to create a sustainable process of continuous improvement. In the current era of major state mandated initiatives, such as the new Illinois Learning Standards and teacher evaluation processes (i.e. PERA), insights on how trust, collaboration, and leadership come into play will be helpful for policy makers and educators alike. The value of having a neutral thought partner to guide and assist, and in what manner, will be described and modeled. Finally, implications and challenges to the sustainability of such long-term continuous improvement are examined.

1 Dolan, W. Patrick (1994). *Restructuring our schools: A primer on systemic change*. Systems & Organization: Kansas City

2 Miles, Matthew B. and Huberman, A. Michael. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage: Thousand Oaks, CA.

A Study of Teacher Perceptions on Urban School Reform and Closing the Achievement Gap

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Urban education is under unprecedented attack today in America today. From well-orchestrated efforts across the country to privatize more and more education services, to the punitive sanctions of the Federal No Child Left Behind legislation, to the explosion and expansion of privately run charter and voucher schools in state after state, educators who have devoted their professional lives to children in our nation's urban schools report feeling besieged, beleaguered, and bewildered. Chicago State University professor Deborah Lynch surveyed over 2,300 Chicago Public School teachers to provide a forum for urban teachers working one public school system to respond to this attack. Lynch then interviewed over 100 teachers to find in compelling personal stories, and insights to illustrate what urban teachers desperately want the educational leaders and the public to know.

This study is a mixed methods study, combining the quantitative data from the surveys with the content analysis of the open-ended survey questions and the 100 interviews. The study describes the greatest challenges facing urban teachers today, as well as lessons learned about teaching children in poverty; detailed recommendations about how our urban school systems can close the achievement gap; teachers' assessments of various reform efforts in the system and in their schools; and their analysis of school leadership, climate and morale. It also includes the stories of experiences that have moved them the most, and, whether, if given the chance and the choice, they would go into urban education all over again. The role of No Child Left Behind (NCLB)-driven standardized testing in the schools today is also addressed, as well as its impact on learning. The scarcity of parent involvement in urban elementary and high schools and the extreme difference between high and low parental involvement are discussed, as are teacher perceptions of disruptive and violent behavior, and safety issues in urban schools.

The study is relevant to Illinois policy issues, specifically urban policy issues, as Illinois leaders grapple with closing the seemingly intractable achievement gap between advantaged and disadvantaged Illinois students. Knowing what educational professionals on the front lines of this battle to close the gap believe are positive and helpful reforms, versus negative and destructive, should inform the decisions of policymakers. Teachers are being asked to implement policies, mandates, and legislative initiatives with very little input into them. Teachers in this study have very strong positions about reforms being implemented with little or no research behind them, such as school closures and turnarounds, and private management of public schools. They want and need to be heard and they have specific recommendations about what could help them close the achievement gap. They want political and educational leaders in particular, and the public in general, to know what they think, how much they appreciate the tremendous responsibility that they have undertaken, and how much they care about the children they serve.

A Classroom Data Literacy Intervention for Pre-service Teachers

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Current professional standards and policies articulate high expectations for teachers' data literacy (National Council for Accreditation of Teacher Education, 2010). However, there is a dearth of research on how pre-service teacher education can best develop this construct in future teachers (Greenberg & Walsh, 2012). This pretest-posttest pilot study investigated 34 pre-service teachers' perceptions of the impact of a six-hour data literacy intervention conducted as part of an assessment course. The intervention involved scoring K-6 classroom traditional and performance assessments, and analyzing, interpreting, and making decisions based on the data. The study also examined changes in pre-service teachers' attitudes and beliefs throughout the course of the intervention. Diez's (2010) model of the process by which pre-service teacher education affects K-12 student achievement, and Marsh's (2009, p. 4) model of data use interventions informed this research. Participants completed two online surveys, the first one week to immediately before, and the second immediately to one week after, the intervention. Both surveys contained the Conceptions of Assessment III—Abridged's nine assessment belief scales (Brown, 2006), and the Survey of Educator Data Use's data attitude and belief scales (Wayman, Cho, & Shaw, 2009). In addition, twenty-three posttest survey items asked participants to indicate their level of agreement with statements about the intervention's impact on their knowledge/skills related to data analysis and interpretation, and data-based decision making (e.g., "The scoring experience prepared me to interpret assessment data"). Participants also responded to 17 dichotomous questions about their involvement in other assessment-related activities during the intervention period (e.g., attendance of data team meetings, examination of student work)—activities that might have been associated with changes during the intervention. We employed inferential methods to examine: whether participants' agreement reports of each intervention impact were significantly non-neutral (one-sample *t*-tests); how each attitude/belief changed over time (dependent samples *t*-tests); and how concurrent learning experiences were related to participant reports of impact, attitudes, and beliefs (bivariate *r* correlations). Participant reports suggest that the intervention increased the pre-service teachers' knowledge and skills related to data literacy. While the pre-service teachers' reports of one belief, in particular, changed significantly during the intervention, other evidence suggests this may be explained on account of maturational factors. Ultimately, studies of this nature potentiate improvements to pre-service assessment education in Illinois, and in turn K-12 classroom practice and student achievement. We intend to conduct future research that employs larger samples and stronger (randomized or non-equivalent comparison) designs, examines intervention impacts on other, objectively measured teacher and student outcomes, and identifies intervention design and implementation factors that are maximally effective.

A Longitudinal Study of the Development of Mathematical Knowledge for Teaching for Elementary Teacher Candidates

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The two research questions that guide this study are: (1) How do elementary teacher candidates develop mathematical knowledge for teaching during a coordinated math methods course and field experience? (2) What additional types of evidence exist to demonstrate the development of mathematical knowledge for teaching during the last two years of an elementary education teacher program?

Six, female, elementary (K-8) teacher candidates who were co-enrolled in Math Methods, K-9, and Field Experience II, during the 15-week, fall 2012 semester at Lewis University were the participants in this study. The six teacher candidates all completed their field experiences in the same K-8 school, St. Joseph, in Lockport, Illinois. Three of the teacher candidates had elementary placements (grades K, 1, and 4) and three of the teacher candidates had middle school placements (5, 6, and 7). Each of the teacher candidates completed pre-test and post-test DTAMS assessments. All candidates taught three mathematics lessons, which were videotaped and observed by the researcher. Teacher candidates submitted a Math Teaching Portfolio, which required them to design, implement, teach, and reflect upon their teaching of mathematics. These six teacher candidates were then tracked over the course of the next two years during their final field experience and student teaching in an effort to provide further evidence for their development of mathematical knowledge for teaching. Results illustrate the growth of mathematical knowledge for teaching that occurred for each participant. Implications for the field of mathematics education, future research, and teacher preparation programs will also be discussed.

Co-teaching and UDL: A Study of Special and General Education Co-Teachers in Underserved Urban High Schools

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Context for the Study

The Individuals with Disabilities Education Act (IDEA) requires that every student with disabilities, to the maximum extent possible, be educated in the least restrictive environment (LRE), often interpreted as the general education classroom. In response, many schools and practitioners favor co-teaching as the most promising method to address the needs of all learners (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010). Research suggests, however, that co-teaching is less effective when teachers rely on one teach/one observe or one teach/one assist, rather than co-planning and using a variety of approaches to co-teaching, including alternative, parallel, and team teaching (Dieker, 2001; Murawski & Spencer, 2011).

A similarly promising approach for improving learning for both general and special education students in inclusive classrooms is the Universal Design for Learning Framework (UDL). This framework emphasizes proactive planning for and implementation of instruction guided by three major principles: Teachers provides a) multiple means of representation, b) multiple means of action and expression, and (c) multiple means of student engagement (CAST, 2014; Meo, 2008).

Our study examined how recent general education graduates of our university implemented different approaches to co-planning and co-teaching and whether they integrated UDL strategies in their individual and co-taught classes. We also investigated what lessons we could draw on to redesign our university coursework to better prepare our teacher candidates to implement UDL, co-planning, and co-teaching, and to advocate for these strategies in their schools.

Research Subjects

We interviewed and observed co-teaching dyads from three different underserved urban high schools. One teacher in each dyad was a recent graduate of the university's Urban Scholars Teacher Education Partnership (USTEP), while the second member of each dyad was a special education faculty member co-teaching with the university graduate.

Findings

We found that teachers who shared similar beliefs about educational goals and how to teach diverse learners were more likely to form collegial partnerships and to incorporate UDL practices and a greater variety of co-teaching approaches, including team-teaching. We also found that when teachers had the opportunity to choose their partners, they were more likely to form collegial partnerships, advocate with administrators for the time necessary to co-plan and co-assess, team-teach, and incorporate more UDL strategies.

Implications for Policy

Unless teachers are supported in co-planning, co-teaching, and UDL, the large classroom sizes that are frequently typical in urban high school settings may make it increasingly difficult for students in inclusive classrooms to learn. More extensive pre-service and in-service professional development is necessary: to educate teachers and administrators in UDL, to provide them with strategies for collaborating with co-teaching partners, and to advocate for co-planning support. When co-teachers co-plan and use the UDL framework to guide their co-teaching, results suggest that they make their curriculum more accessible, create higher levels of engagement, and are better able to improve learning opportunities for all students in general education classrooms.

Culturally Responsive Teaching Self-efficacy of Educators in Rural Illinois: A Mixed Approach

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Goals/Objectives

Given an increasingly diverse student population, teachers, school administrators and other educators who may have worked in homogenous environments need to be prepared for working with students who are culturally or linguistically diverse. Some researchers contend that cultural disparities that may occur between students and educator may have negative consequences for students' learning. In this light this study sought to examine the culturally responsive teaching self-efficacy beliefs of educators in rural schools in Illinois; How efficacious are they about their ability to execute the strategies of culturally responsive teaching? Are there gender differences? In what strategies are they the most efficacious? Least efficacious? Given a case study, how would educators describe an intervention involving cultural conflict?

Theoretical/Conceptual Perspectives

This study was girded by two main concepts: Bandura's (1977) self-efficacy and Gay's (2000) culturally responsive teaching also known as culturally responsive pedagogy, culturally appropriate instruction or the "cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively" (p. 106). According to Bandura individuals who are efficacious in specific tasks are more likely to be successful at that task. Gay advocated for the utility of the knowledge of students of ethnically diverse backgrounds as a strategy for improving their academic success.

Methods

Participants were recruited via email and telephone call to the principals/teachers (when available) of 685 Illinois schools that were identified as rural (distant) or rural (remote) as per the locale codes adapted by the National Center for Educational Statistics (NCES). The final sample comprised 293, majority White/Caucasian (98%) and female (75%) teachers and school administrators who completed the 40-item culturally responsive teaching self-efficacy scale (CRTSE) (Siwatu, 2007). Participants ranged in age from 22 to 70 years ($M = 42.20$, $SD = 11.97$) with an average of 15.21 ($SD = 10.62$) years of active teaching. Most (70%) reported having taught a student that was culturally or linguistically diverse, and 46 % attributed challenges teaching a student to that difference.

Participants rated their level of confidence in their ability to engage in specific culturally responsive teaching practices on a scale of 1 (no confidence at all) to 100 (completely confident). Participants also read a 300-word case study documenting the challenges that a White, female seventh-grade math teacher faced working with an African American male student, and responded to the question "What would you have done if you were teacher in this case?" Their responses were analyzed for elements of culturally-responsive teaching.

Results

Participants reported medium-high culturally responsive teaching self-efficacy ($M = 79.80$, $SD = 12.10$). They were most efficacious about their ability to execute tasks that attend to students' socioemotional needs, "develop a personal relationship with my students ($M = 93.28$, $SD = 10.35$), and least efficacious about tasks that require higher levels of culturally competence: "praise English Language Learners for their accomplishments using a phrase in their native language" ($M = 52.01$, $SD = 34.48$). Results of an independent samples t-test suggested that females ($M = 80.80$, $SD = 11.67$) were more efficacious than males ($M = 76.74$, $SD = 12.99$). No correlation was found between time teaching and level of efficacy. Results of the qualitative data revealed some disparities with quantitative data.

Implications

Some educators still hold erroneous implicit beliefs about students who are culturally different from them that may impede learning, though they may report more positive statuses. One natural consequence of interacting with others who are culturally diverse is an increased understanding. However, our culturally or linguistically diverse students cannot rely solely on passive measures. Therefore, all training (teacher preparation programs or in-service professional development) need to address working with diverse student populations.

“You don’t speak correct English”: Teacher Knowledge About Linguistic Diversity/ Acquisition and Its Role in Pedagogy

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Language is a foundation for all learning, in which content, assessment, and instruction in schools are conveyed via oral, written, and/ or literary language. Many teachers, however, are unaware that language acquisition is a socialization process that occurs throughout diverse groups in America, resulting in linguistically legitimate dialects of English. Teacher misunderstandings about linguistic diversity, particularly African American Language (AAL), impact academic performance (Baratz & Baratz, 1970; Goodman & Buck, 1973; Godley, Sweetland, Wheeler, Minnici & Carpenter, 2006). Decades of research have documented the cultural and linguistic differences between communities and institutions, and the negative academic effect such a mismatch has on marginalized students. Sadly, research results about the impact of language differences on academic performance remain inaccessible to many teachers (Bowie & Bond, 1994; González & Darling-Hammond, 2000; Ladson-Billings, 2000). Some pedagogical progress has been made for English Language Learners because there is wider acceptance of foreign languages in schools. However, how are teachers able to make pedagogical modifications for a dialectally diverse population they have no knowledge and/or acceptance of? This project investigates AAL, particularly the ways teachers understand the dialect and its role in the classroom. My research questions are: What knowledge do pre-service and in-service teachers have about linguistic diversity/ language acquisition? What role does such knowledge play in their pedagogical decisions? My approach to investigating these questions was framed in socio-linguistic and sociocultural theories. I employed an interdisciplinary perspective of language, drawing from the fields of linguistics (Hymes, 1972; Wolfram & Fasold, 1974; Labov, 1969; Smitherman, 1977; Alim & Baugh, 2007), literacy research (Cazden, 2001; Michaels, 2006; Genishi & Dyson, 2009), and research about learning (Vygostky, 1978).

This project is qualitative in nature, studying multiple cases across different sites. These cases were teachers who were selected through a process of surveys and interviews. Surveys were distributed to pre-service and in-service teachers at a large, Midwest university. Surveys served a two-fold purpose: 1) to create a pool of potential participants who were currently or previously enrolled in a post-secondary course on linguistic diversity, including AAL, and 2) to garner information about teacher linguistic knowledge. Based on survey responses, nine pre-service and five in-service teachers were selected for interviews. Interviews focused on ascertaining knowledge teachers gained in coursework on linguistic diversity/ language acquisition, as well as how teachers perceived the role of such knowledge in their classrooms. Upon completion of interviews, the classrooms of: one in-service early childhood teacher, one pre-service elementary teacher, and one in-service high school teacher were selected as separate cases. The duration of observations spanned over four months, with an aim to document the role of teachers’ linguistic knowledge in curriculum, pedagogy, and student interaction. Other data being collected to contextualize pre-service and in-service teacher linguistic knowledge are observations of a required language course for elementary education majors, and interviews of education professors who have taught undergraduate or graduate language courses to in-service or pre-service teachers. Preliminary findings suggest that these teachers’ backgrounds shaped their perceptions of AAL, as they had personal experiences identifying with AAL. These perceptions influenced their interpretations of student behavior, as well as an understanding and acceptance of students’ home lives.

The First of the Firsts: Illinois' Bilingual Preschool Policy

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A recent 2010 study published by the National Task Force on Early Childhood Education for Latinos states that about 35 percent of four-year-old Latino American children attend some type of preschool in comparison to 66 percent of Caucasian children and 54 percent of African-American children. In this same national study, researchers tracked 380 Illinois children born in 2001 for nearly a decade, monitoring everything from the child's social and cognitive development to how often the child read with their parents at home. As early as age two, Latino American children were behind their peers in early literacy skills, such as recognizing words or turning to the cover page of a children's book. In the midst of the rising numbers of bilingual children, Illinois is the first state to pass legislation requiring preschool sites that serve 20 or more English Language Learners to offer bilingual education in their preschools. The law requires that all teachers working with an ELL population must obtain their Bilingual and/or ESL Endorsement by July 2014. The purpose of our study is to explore early childhood directors' experiences with the new Illinois initiative for early childhood bilingual education, as well as the implications of their experiences, with the aim of reporting and suggesting possible strategies for enhancing the application of the new early childhood bilingual initiative at the institutional and agency. The results from the survey showed that the majority of the early childhood directors do not have a background in Bilingual and ESL education, with the majority having administrative and special education backgrounds. They also have differing beliefs and values towards bilingual education as well as the need for such policy changes and its economic repercussions.

Improving Math Instruction for Preschool Children: A Research-Based Professional Development Intervention and Evaluation

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Study Goals/Objectives

Research shows that children's early mathematics understanding significantly predicts school achievement in later years (Duncan et al., 2007), and early intervention specifically focused on math has been shown to have broad positive effects on student learning (Fuson, Smith, & Lo Cicero, 1997). Yet early childhood educators often avoid teaching core mathematical concepts, and the quality of math teaching at the preschool level is extremely variable (Copley, 2010; Copple, 2004). Funded by the CME Group Foundation, in 2010 the Ounce of Prevention Fund (Ounce) undertook a multi-year Early Math Intervention (EMI) in partnership with Erikson Institute to improve the math skills of low-income young children in Chicago by improving preschool teachers' math teaching practice.

Research Design & Methodology

Program and Sample: The Ounce operates the Educare School on the south side of Chicago, which serves families in a full-day, full year high-quality early education program from birth to age five. From August 2011 through June 2014, 13 teaching staff, 2 family support staff, and 4 supervisors/coaches participated in the EMI.

Data Collection and Analysis Methods: All teacher measures were administered in the fall of 2011, prior to the first training session and again in the springs of 2012, 2013, and 2014. Student measures were administered in the fall and spring of each program year.

Teacher Measures: Teacher measures included a questionnaire about their math-related disposition and observation of a math lesson.

Student Measures: Two measures of kindergarten-bound preschoolers' mathematical knowledge and problem solving were administered.

Summary of Findings from Three Years of Evaluation

Following the third year of the EMI, preschool teachers' confidence in their math teaching practice and beliefs about the efficacy of their mathematics teaching increased over time. After three years, assessments of teachers' instructional practice demonstrated that they made statistically significant gains in eight out of the nine dimensions measured. In addition, students demonstrated improvements from fall to spring on average on the two student math assessments each year.

Discussion and Implications

Effective curricula and professional development to support early childhood educator knowledge, attitudes, and instruction, as well as enrichment for the home learning environment, are needed to close the achievement gap in early math. Early math is specialized knowledge best learned in relationship for both teachers and children and thus necessitates multi-faceted progress monitoring and evaluation.

The Relationship of Early Language and Code-Related Skills to Third Grade Reading Achievement

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Study Goals/Objectives: The purpose of this study is twofold: 1) to explore the relationship between early vocabulary acquisition and code-related skills in preschool and 2) to examine how these two constructs relate to later literacy achievement in a sample of students from low-income families who participated in the same high quality early care and education program and then transitioned into the Chicago Public School district. This study sheds light on continuing, yet inconclusive research about the key precursors to literacy achievement, and has implications for early learning programs on how to best support children and families in achieving current development progress and later academic success.

Background/Theoretical Perspective: Recent research has found early vocabulary and code-related skills to be both direct and indirect predictors of later literacy achievement. Studies have demonstrated that preschoolers with high scores on measures testing vocabulary, phonological sensitivity, and print knowledge exhibit greater literacy abilities through the 5th grade. It has been well established that children from lower socioeconomic groups demonstrate differences in vocabulary exposure and acquisition beginning in early childhood through high school. With this knowledge at hand, there is a great impetus to focus vocabulary and language interventions for children from low-SES backgrounds, early on in a child's learning landscape. This study will shed light on the relationship between early language and code-related abilities and later reading skills, utilizing a local sample of students.

Program and Sample: The Ounce operates the Educare School on the south side of Chicago, which currently serves families in a full-day, full year high-quality early education program beginning at birth and continuing to age five. Students are predominantly African-America, monolingual English-speaking children from low-income families. Our sample for this study includes 92 students who graduated from Educare at age five, and have taken the Illinois Standards Achievement Test, Reading (ISAT) at the end of 3rd grade.

Data Collection and Analysis Methods: This study examined data from students using the following measures 1) The Peabody Picture Vocabulary Test, Fourth Edition (PPVT-IV) and 2) The Phonological Awareness and Literacy Screening, Pre-K (PALS -PreK), both administered in their final year of preschool before transitioning to kindergarten, and the 3) Illinois Standards Achievement Test, Reading (ISAT) – for the same students administered at 3rd grade. Multiple regression analysis with the PPVT-4 and PALS-PreK scores as independent variables, and scores on ISAT reading achievement as our dependent, or outcome measure were conducted.

Summary of Findings

Preliminary correlation analyses indicated a positive linear relationship between early receptive vocabulary and code-related skills. Third grade reading achievement scores were regressed on Pre-K vocabulary scores and Pre-K literacy-related scores. Preliminary analyses showed that these two predictors accounted for more than one third of the variance in later reading achievement test scores on the ISAT.

Implications for Illinois Education Policy and Practice:

Much emphasis has been placed on students reading proficiently by the end of third grade. This study will illuminate the relationship of early language and decoding skills and later reading achievement, thereby having the potential to inform how early childhood educators approach supporting early literacy.

Remath: New Explorations of the Math-learning Experiences of Black Students in Non-credit-bearing University Courses

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Remediation is a long standing and growing phenomena in mathematics education and in the transition to higher education, but there has been limited attention to remedial classrooms and students' learning experiences in these settings. Remedial mathematics courses offered in four-year universities "provide beginning college students with another chance to learn or (relearn) the mathematics supposedly taught to them in high school." According to the National Center for Education Statistics (NCES), remedial mathematics courses are listed in 80% of four-year university course catalogs. Nearly 40% of all "traditional undergraduates" take at least one remedial course in reading, writing, mathematics or some other content area; this figure has risen considerably since the NCES report of 1989 (Lesik, 2006).

The goal of this research project is to explore the effects of remedial mathematics courses on first and second year students. More specifically, we expect to uncover how students in mathematics remediation courses experience persistence in STEM related fields.

The sampling procedures will ensure that the participant pool includes only African American students, which includes men and women pursuing a diverse array of potential major concentrations. The 10 selected participants will be first and second year African American students enrolled in remedial courses offered at a Midwestern university.

Using a phenomenological approach, this study employs classroom observations, student surveys and semi structured interviews of 10 selected first and second year students enrolled in remedial courses offered at a Midwestern university. This research centers on theoretical frameworks developed to study mathematics learning as a narrative construct (Martin, 2000; Sfard & Prusak, 2005). Data analysis of interview transcripts will consist of coding and categorizing emergent themes to be used to recommend interventions and suggestions for the improvement of course administration.

We expect to uncover students' attitudes and beliefs concerning the effects of these courses on their persistence in their academic programs and offer suggestions for program improvement policies.

Reliability and Validity of an Innovative Measurement Assessing Knowledge for Teaching Early Mathematics

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This study investigated the reliability and validity of an innovative measurement to assess early childhood professionals' knowledge of teaching foundational mathematics. There is a need to reliably and effectively assess teachers' knowledge of mathematics. Utilizing the theory of pedagogical content knowledge (PCK), which highlights the specialized content knowledge required in teaching, the current study proposed a three-component model of PCK in early mathematics: what—a deep understanding of mathematics topics necessary for teaching young children; who—knowledge of learners' conceptions about specific mathematics content; and how—math specific pedagogical knowledge. Accordingly, we designed a video elicited, open-ended online video to assess early childhood teachers PCK in early mathematics. The results indicated promising reliability and validity of the PCK-EM survey. Using PWO and ICC, the most commonly applied criteria of objective ratings, the tool demonstrated robust reliability between coders and for the same coders within one month apart. The significant relationship between teachers' knowledge and teaching quality also suggested external concurrent validity of the assessment.

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Parents and Providers as Partners: Beliefs and Practices of Early Literacy in One Urban Community

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National and local standards detail uniform expectations for early childhood classrooms and daycare centers, presupposing a homogeneity across all early learning places and spaces. And yet, the early experiences of urban children are diverse and increasingly varied. Exploring the relationships between early literacy policy and practice, we used a comparative descriptive design to garner parents' and childcare providers' perceptions of early literacy in one urban midwestern community. Acknowledging various early childhood contexts within the community, motivated by the increased academic standards, and seeking to support parents and childcare providers in creating highly literate environments, we apply an ecological systems perspective (Bronfenbrenner, 1977). Emphasizing the social nature of learning (Vygotsky, 1978), the ecological systems model posits learning as influenced by interactions within and between systems involving both others and the environment.

Qualitative measures were exercised to inform our understanding of parents' and childcare providers' beliefs and practices of early literacy and language acquisition. Focus group interviews with parents and childcare providers explore the nature of the parent-provider relationship. The qualitative data set is comprised of six focus groups. All six focus groups were conducted within the urban community, held at various childcare sites or community centers. Three focus groups involved childcare providers recruited for voluntary participation at a previously held professional development session unrelated to the topic of literacy. Using a snowball sampling (Goodman, 1961), participating providers recruited interested parents of the children whom they care for to then participate in a separate focus group. Provider focus group participants represent ten child care sites in the community, including representation from both center and home-based sites. Parent participants represent three of these locations.

Based in grounded theory, the data was analyzed using open, axial, and selective coding (Glaser & Strauss, 2009). Analysis included within group and between group comparisons. Both parents and providers show differences and similarities in their beliefs and actions regarding early literacy and language learning. This poster session explores how parents' or providers' beliefs overlay with their actions. The sites of intersection when comparing parents' or providers' beliefs with their actions are specific and offer information about the contexts affecting the early literacy development of young children in the community. Even more thought-provoking is the overlap in providers' beliefs and actions as well as parents' beliefs and actions. How each community groups' actions and beliefs intersect with each other is relevant and worthwhile data that has implications for early learning.

The current early literacy beliefs held and actions depicted within the community provide a promising starting point towards creating a more unified vision for parents and providers alike. These preliminary findings suggest areas of focus for future parent and childcare provider professional development sessions towards developing a more cohesive approach to early literacy development across contexts within the community.

TalentSparks3—Findings From a State-wide Problem Based Learning STEM Professional Development Initiative

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The TalentSparks3 project was developed to increase the academic achievement of Illinois students in science by enhancing the biotechnology content knowledge and teaching skills of middle school and high school teachers. The 2.5 year project was a partnership among the Illinois Biotechnology Industry Organization Educate Center (iBIO Institute), the Monroe/Randolph Regional Office of Education #45, Wheeling High Schooling and the Center for Mathematics, Science, and Technology (CeMaST) at Illinois State University (ISU). The project provided summer professional development (2011 & 2012) and school year follow-ups (2012 & 2013) with math and science teachers from the Chicago area and from Southern Illinois. The professional development included hands-on, high-tech skills development in biotechnology, real-world industry-inspired problem-based learning projects (PBLs), and facilitated exploration of a wide variety of science-based careers and assistance in unit design incorporating these activities. This U.S. Department of Education Math & Science Partnership project (MSP) focused the PBLs on the obesity epidemic in year one and climate change in year two. The program had the unique advantage of presenters and support from a wide variety of biotechnology industry organizations, public organizations, and universities that included Abbott, Astellas, Argonne National Laboratory, Baxter, the Danforth Plant Science Center, the Illinois Department of Public Health Monsanto, Northwestern, Pioneer, Roosevelt University, SIU Edwardsville, and the University of Wisconsin – Milwaukee (among others).

The summer workshop program and school year activities targeted teachers at high needs middle and high schools in Northern and Southern Illinois. The 25 teachers who were involved with the project developed project specific PBLs as a result of their experiences that they implemented in their classrooms. There were several evaluation questions considered, but the presentation will only consider results concerning teacher content knowledge and the incorporation of scientifically-based instructional practices. The teacher content knowledge question was studied using math and science content instruments developed from released items from the AAAS Science Assessment (2011) and the National Assessment of Educational Progress (NAEP) items (U.S. Department of Education, 2011). The instructional practices question was studied using scales taken the Surveys of Enacted Curriculum Science survey (Blank, Porter & Smithson, 2001).

Teacher content knowledge. Teachers had significant increases on both science and math tests over both years. In science, teachers had a 12 point gain in 2011 ($p < 0.001$) and a 4 point gain in 2012 ($p = 0.033$). On math tests, teachers had a 6 point gain in 2011 ($p = 0.024$) and a 9 point gain in 2012 ($p = 0.003$). These gains support the statement that teachers did increase their content and conceptual knowledge of science and math.

Teacher Curriculum. There were significant ($p < 0.01$) positive increases in the composite areas of Communicating Scientific Understanding, Student Reflection on Scientific Ideas, Scientific Thinking, and Teacher Preparedness. This means that teachers incorporated scientifically based instructional strategies into their classrooms that includes increasing instructional time for data visualization, discussion of alternative data hypotheses and orienting instruction to student's prior understandings on the topics they teach. These findings are significant and particularly notable.

How School Leaders Influence Instruction and Student Learning: A Preliminary Look at Strong School Leadership in 12 Schools

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Background / Context

School leadership is often conceived of as a key lever for school reform and improving student achievement. According to U.S Education Secretary Arne Duncan, “There’s no such thing as a high-performing school without a great principal... You simply can’t overstate their importance in driving student achievement (Connelly, 2010, p.34).” There is growing consensus that principal leadership has demonstrable indirect effects on student learning through mediating factors such as school culture and capacity (Hallinger & Heck, 1996; Hallinger & Heck, 1998; Witziers, Bosker, & Kruger, 2003). However, despite over four decades of research, large gaps remain in our understanding of the complex roles of school leaders and their influence on instruction and learning.

Purpose / Objective / Research Question / Focus of Study

This paper uses qualitative data collected as part of a mixed-methods research study funded by a grant from the Institute of Education Sciences (IES) to describe the mechanisms through which school leaders influence instruction and student learning. Specifically, the current paper seeks to address the following two questions: 1) What strategies do successful principals use to strengthen mediating processes and influence instruction and learning? 2) What does this look like in practice?

Population / Participants / Subjects

In the current paper, we examine 12 interviews with principals collected in 12 schools in Chicago, six elementary schools and six high schools. The schools fall into two types: 1) schools that have continuously strong or improving school leadership and have improving student achievement; and 2) schools that have strong leadership but have stagnant or declining student achievement.

Data Collection and Analysis

Each participating principal was interviewed one time during the 2013-2014 school year, and interviews were generally 60 minutes long in duration. During the interviews, principals were asked about the school’s goals, the principal’s priorities, how principals spend their time, what areas of school leadership they delegate, and organizational factors that support instruction and learning. The interviews were coded and analyzed inductively through a grounded theory approach (Strauss and Corbin, 1990).

Findings / Results

We found that successful school principals influenced student learning through creating a school environment that was open, caring, and student-focused; working with teachers to set common, ambitious goals for students; monitoring student behaviors and progress towards the goals; and structuring the school environment in ways that promote student and teacher success.

Implications

Although school principals could spend their time in numerous ways, the study’s findings indicate the key areas they should focus on to facilitate student learning.

Perceptions of Illinois Public School Board Members' Need for Training on School Board Governance

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The purpose of this mixed-methods study was to investigate the perceptions of Illinois school board members (N=775), including board presidents (n=87), regarding school board training needs, what essential skills were necessary for school board members to possess, and what school board functions were perceived to be the most important. Additionally, which methods for training these skills seemed to be most effective for school board members was explored.

Statistically significant differences between the perceptions of school board presidents and school board members were found for in-service topics including test scores, school law, and student rights. Differences were also found for preferred training methods involving internet instruction, mentor/peer help, reading materials, universities, visiting other school board meetings, state conference and lawyers as trainers. Essential skills including school law, long-range visionary planning, organizational skills and writing skills were perceived differently between the two groups. Analysis of the data also found significant differences between board presidents and board members as to how they perceived the following functions of the school board: budget/finance, employee negotiations, long-range visionary planning, playing "Devil's Advocate," and leveraging power. The qualitative data offered additional evidence and reinforced the conclusions derived from the quantitative research results.

This research study includes numerous recommendations for further study. The information provided by the study will be of value to local school boards and school board associations. As content, delivery, and assessment of mandated training continues to develop, this research will also be important to the providers of school board training.

Retention of Talented STEM Students in the Illinois Higher Education Pipeline: Initial Baccalaureate Outcomes of IMSA Graduates

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Study Context and Purpose:

The Illinois Mathematics and Science Academy (IMSA) in Aurora, IL is a selective residential high school for academically talented students (grades 10-12) in Illinois with a focus in STEM (science, technology, engineering, and mathematics). The Academy seeks to nurture scientific minds to advance the human condition. As a result, it brings recognition to Illinois while developing the best STEM talent in the state. Like other schools where students demonstrate a high degree of college readiness, IMSA graduates have many opportunities for college enrollment, and a large proportion (51.7%) of the students leave the state for their undergraduate education. The export of high school graduates has been identified as an important economic and policy issue for Illinois, and this example of high performing students leaving at a rate even greater than what has been reported for the general student population (30%) may have implications for economic development and STEM innovation (Smalley, Lichtenberger, & Brown, 2010).

This study examined initial undergraduate outcomes from graduates of the IMSA classes of 2006-11. Using degree data from the National Student Clearinghouse for 633 graduates, the researchers investigated relationships between college sector, field of study, and individual level variables such as gender and race/ethnicity.

Findings:

Initial findings indicate that these talented students are not only more likely to leave the state, but that 43% enroll in out-of-state private institutions while only 9% enroll in out-of-state public institutions. Our initial findings show that students who pursued degrees in the Social, Behavioral, and Economic Sciences were 3 times more likely to enroll in an Illinois College than those majoring in other fields. Students who chose to attend public institutions were 12.4 times more likely to choose one in-state versus leaving the state for a public institution. Of those students who attended in-state institutions, 85% report residence in Illinois, while only 69.1% of students who attend out-of-state institutions return to live in the state. 23.5% of graduates with a STEM degree report residence in other states.

Implications for Illinois Education Policy:

The 2010 IERC report showed Illinois as exporting a significant number of students, of which 16% went to public institutions and 14% went to private colleges and universities. The results suggest that it is necessary to determine specific factors that contribute to college decisions of STEM-talented students to shape Illinois education policy; Illinois should further develop institutions, policies, and incentives that appeal to students so that the top talent in desired fields remain in the state.

REL Midwest EdMaps: Assessing Education Data Geospatially

Jason Narlock, PhD, Researcher
American Institutes for Research

The use of geographic information system (GIS) technology is becoming increasingly important in the field of educational research and countless other research fields across this country. GIS systems enable us to represent student, teacher, parent, school, district, county, state, and regional information geospatially, thus allowing for a greater number of comparisons to take place in a manner that is easier to understand than standard tabular or graphical depictions.

In 2011, the Regional Educational Laboratory (REL) Midwest launched the Midwest Education Atlas. Using publicly available data from a variety of sources, the REL Midwest team created a set of maps that displayed data on high school dropout rates across several related district-level variables. These dropout rate maps grew out of REL Midwest's support of statewide and citywide summits on high school dropout prevention and have helped frame conversations on dropout prevention in communities in Illinois and across the Midwest. As time progressed, however, Midwest education stakeholders expressed an interest in a more interactive tool that could be used to explore a wide range of education data, as well as to analyze changes in these data over time.

During the past year, REL Midwest has been working with Blue Raster (a company specializing in GIS data and Web mapping) to develop the EdMaps Web-mapping application: an online tool containing state-specific publicly available data that easily allows users to examine state, local education agency, county, district, or school-level data. Utilizing data sets from the U.S. Census Bureau, NCES Common Core of Data, and data provided from each state department of education, REL Midwest's mapping application gives users the ability to generate custom maps, tables, and reports for only those geographic areas and variables that apply to their specific inquiries. This functionality, coupled with the ability to view changes over time in any number of variables (e.g., test performance, minority status, total enrollment) provides a dynamic resource to regional stakeholders.

This presentation will provide an opportunity for Illinois education practitioners, policymakers, and researchers to learn about the functionality of the REL Midwest EdMaps application and how it can be used to answer questions and explore relationships between school performance and a large number of demographic variables.

Reasons for Reverse Transfers: In Students' Own Words

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Attention to reverse transferring (i.e., student mobility from a four-year to a two-year institution) has increased in recent years due to its association with extremely low rates of bachelor's completion (Goldrick-Rab & Pfeffer, 2009; Lichtenberger, 2011). Using Perna & Thomas' (2008) framework for student success, this pilot study used a mixed methods approach to examine four-year-starter students' reasons for transferring to a community college. Responses to "Why did you transfer?" from seven interviews and 29 completed online surveys with students who transferred from their four-year to two-year institution related most often to school context (e.g., program of study, integration/fit) and internal context (e.g., motivation to be in school, personal economics). Policy implications include developing comprehensive, statewide transfer policies and establishing more formal systems to support all types of transfer students.

A Regional Analysis of the Impact of Educational Time Variables on Student Achievement

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An area of interest of educational stakeholders is the length of school hours, school days, and school year. These time factors are being reexamined and school officials are making adjustments to academic school calendars. Although state laws vary, they specify the minimum length of time that constitutes an instructional day and allow local school districts and regions to determine when the school year begins and ends. Some states are offering extended learning initiatives to educational institutions to increase the amount of time schools service students. The proposed study underscores the need for current and reliable data due to the new political shift of increasing the amount of time students spend in school. This political shift is being presented in a way that proposes more school time would increase the overall achievement of lower performing students. Conducting this study adds to the existing body of research by providing data for the review of extended learning time initiatives and the relationship between educational time and student achievement. A regression analysis of 24 average scale scores of the national assessment of educational progress in Illinois, Indiana, Iowa, Kentucky, Minnesota, Michigan, and Missouri totaling 168 scores were evaluated and assessed. State policies on allocated instructional time in each of the seven midwestern states were compared to the average scale scores of the national assessment of educational progress from 2003 to 2013 in grades 4 and 8 in the areas of reading and math. The findings suggest there is a non-significant correlation between allocated instructional time and the average student achievement for the seven states.

Supporting Success for Low-Income Community College Students: What Does Identity Have to Do with It?

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One Million Degrees

Community college students are more likely than students attending 4-year colleges to be financially disadvantaged, first generation college students, married, and/or parenting (Berkner & Choy, 2008). For many community college students, their role as “student” competes with other roles and responsibilities in their lives. On the other hand, these roles may also shape and support their educational and career goals. In this study, we use a three-layer identity development framework (McAdams, 2013) to explore the potential for incorporating an identity development perspective into support programs for community college students as a mechanism for supporting educational persistence and commitment to career pathways. From this perspective, the identity layers (social actor, motivated agent, and autobiographical author) represent three distinct yet interrelated ways of knowing and expressing oneself that have social and psychological consequences for the developmental trajectory of an adult occupational identity.

We take a case-study approach to exploring the role of identity development processes within the context of a comprehensive support and scholarship program for low-income, highly motivated community college students in Chicago, One Million Degrees (OMD). Our analyses focus on application essays for 30 emerging adult community college students who were accepted into OMD, focus groups with OMD students and staff, and observations of OMD workshops and events. In our analyses of student focus group data, staff interviews, and field notes we illustrate the relationship between OMD program components and the three-layer identity framework. Moreover, our findings of the narrative analysis of application essays suggest that each of the three identity layers offer distinct ways in which these students negotiate an understanding of where they came from, where they want to go, and why their chosen future pathway makes sense for them. We illustrate how this negotiation is distinctly patterned and related to social processes that might be explicitly incorporated into OMD programming.

Confidence, Collaboration, and Career-Building: Undergraduate Women in Leadership Roles at Northwestern University

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The study sought to explore the experiences of undergraduate women in formal leadership positions in on-campus student organizations at Northwestern University and pinpoint what factors most significantly encourage women to take on these roles and provide support. Through the use of existing institutional survey data and interviews and focus groups with female students holding leadership roles, this study sought to pinpoint the support needs of female student leaders and analyze possible barriers to their participation in leadership development opportunities. A portion of the theoretical perspective in the study was rooted in Bandura's (1977) theory of self-efficacy and used to better understand efficacy in terms of leadership behaviors and confidence. The study is also based on literature on the developmental benefits of campus engagement, gender-specific expectations in leadership (Dugan, 2006; Kezar & Moriaty, 2000; Mayo & Christenfeld, 1999), and how college women utilize their mentors (Liang, Tracy, Taylor, & Williams, 2002).

The data used in the study were the institution-specific set of 2012's Multi-Institutional Study of Leadership, student interviews, and focus groups. The data analyzed suggested there are no significant gender barriers to female participation in undergraduate leadership at the institution. The undergraduate women had various motivations for participating in formal leadership positions, including gaining skills for future careers, contributing to the campus community, and gaining confidence. Students were most concerned with balancing high expectations within multiple areas of student life, including their leadership commitments and rigorous academics, and expressed sentiments that leadership behaviors performed by men and women were valued differently. Students detailed they found significant support for their leadership development in their parents and peers. Female student leaders underutilized faculty and staff student group advisors.

This research contributes to the field in its examination of current support female undergraduate leaders utilize most or would like to have access to and added to the literature on college women's leadership development and student social support. As the research is a case study of Northwestern University, one of Illinois's leading research institutions, and the environment for undergraduate women, it is a topic relevant to creating policy and initiatives that may benefit the larger population of female students in the state.

Learning in the Discipline of Psychology: An Action Research Project Using a Paired Course Model

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Many students new to college are required to take transitional courses following the placement testing process. Transitional courses are designed to provide instruction in college-level learning strategies, both general and discipline-specific, in order to prepare students for the academic requirements they will face in their college coursework. In some 100-level general education courses such as introductory psychology, institutional statistics at a Midwestern university show that nearly half of the students who enrolled in the past several years have failed. It can be argued that in many cases, students were misprepared to meet course expectations.

The purpose of this study was to examine students' perceptions of reading and studying in introductory psychology following participation in a pilot paired course approach where students co-enrolled in a transitional course, College Reading and Study Strategies and Introduction to Psychology (PSY 101). This study utilized an action research methodology and included the following data sources: focus groups, interviews, observations, document analysis, and outcome measures. Findings suggest that while the paired course model may have been beneficial for some participants according to outcome measures, around half of the participants did not pass PSY 101. However, data analysis did reveal valuable insight into challenges students face in PSY 101—which is a general education course required for most majors. These participant insights have potential implications for college preparation classes, the structure of PSY 101, and future applications of the paired course approach.

Developing a Theory-Driven Assessment of Moment-to-Moment Reading Comprehension: The Reading Strategy Assessment Tool

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Theoretically supported literacy assessments are critical for educational practice and policy decisions. However, developing assessments that conform to a theoretical framework presents a serious challenge for test developers (Mislevy, 1993; Pellegrino & Chudowsky, 2003). This challenge is particularly evident in reading comprehension assessments, which typically adopt a multiple-choice format.

In this poster, we describe research of the Reading Strategy Assessment tool (RSAT; Magliano, Millis, The RSAT Development Team, Levinstein, & Boonthum, 2011). RSAT is a theory-driven, web-based computer assessment program. Developed using the Evidence-Centered-Design principle (Mislevy, 1993; Pellegrino & Chudowsky, 2003), the RSAT adopts a radically different approach than multiple-choice tests. Students read texts one sentence at a time and at pre-selected sentences, they are prompted to answer two different types of open-ended questions. The RSAT is intended to assess comprehension as it emerges during reading and to identify use of key reading strategies (Magliano et al., 2011).

The goal of this study was to examine the utility of RSAT in describing the reading strategies of college students enrolled in a developmental education program. In doing so, we also hoped to explore the potential of RSAT as a formative assessment. This study employed a matched-group design to compare the comprehension strategies of students enrolled in a developmental education program to students who were not enrolled. The RSAT was administered to a sample of 21 students enrolled in the developmental program at Northern Illinois University and 21 students enrolled in a lower-level psychology course. This study used ANCOVAs to examine differences between the two groups on the three strategy scores generated by RSAT: making connections, using background knowledge, and restating the text.

Analyses of the strategy scores indicated that developmental students are comparable to non-developmental students in their ability to make connections across sentences in a text. However, developmental students may have challenges incorporating relevant background knowledge into the reading experience relative to their non-developmental peers. Despite the small sample size, the findings suggest that RSAT may have some utility in capturing the unique literacy needs of under-prepared, post-secondary students. Additionally, the results suggest that post-secondary institutions may want to consider measures of reading that provide greater descriptions of what students do during academic reading.

The Impact of Guaranteed Tuition Policies on Postsecondary Tuition Levels: A Difference-in-Difference Approach

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Ensuring college affordability is perhaps the most critical challenge facing higher education in the United States today and the topic has received much attention from students, families, the media, institutional leaders, and policymakers at the state and national levels. Tuition at U.S. higher education institutions has increased dramatically in recent years. Between 2001 and 2011, in-state tuition rates at four-year public colleges and universities grew at an average rate of 5.6% per year in excess of inflation (College Board, 2011). Concerns about affordability have led policymakers to consider a variety of measures to control and limit tuition growth. One approach involves fixed rate, or guaranteed tuition, in which students do not experience annual increases in tuition. These types of programs are becoming more prevalent across the nation. In 2008, 356 higher education institutions had guaranteed tuition plans in the United States (IPEDS, n.d.). By 2011, this number had risen to 467 across 44 states (IPEDS, n.d.). Illinois has the longest standing guaranteed tuition law that applies to all in-state students at public four-year institutions. Illinois' "Truth-in-Tuition" legislation was signed into law in 2003. This law ensures that, beginning in fall 2004, incoming students at Illinois' public four-year institutions pay level tuition rates for the first four years of college (Illinois Public Act 093-0228).

This study considers the impact of state-level guaranteed tuition programs on postsecondary tuition levels. The analytic framework argues that state-level laws requiring flat tuition rates for four years contain inflationary risk, which encourages institutions to set tuition higher than they otherwise would with annual adjustments. To empirically test this idea, we use a national panel dataset and a quasi-experimental difference-in-difference methodological approach, with Illinois' Truth-in-Tuition law serving as the treatment condition. Our unique dataset relies extensively on data from the Integrated Postsecondary Education Data System (IPEDS), but also includes data from the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. After accounting for missing values, the full estimating sample contains 6,573 observations and is comprised of 641 institutions over the years 2000-2011.

We find evidence of a significant increase in tuition levels when institutions were subject to guaranteed tuition laws. On average, institutions subject to this law increased tuition by approximately \$1,500 in excess of the amount predicted by the trend for institutions not subject to the law. This finding is robust to multiple alternative specifications including alternative control groups based on region, governing board structure, and institutional type, robustness checks to mitigate against possible sample bias, and a three way fixed effects model with year, institution, and state trend fixed effects. Taken together these results support the idea that state-level guaranteed tuition programs encourage large institutional tuition increases. Although these laws offer predictability in tuition levels for students, the incentives built into these programs appear to encourage overall tuition increases, which is not clearly beneficial to students and families. The size of this increase in tuition is troubling because, while there is likely a value in institutions offering predictability in tuition rates, it is unlikely that the value of that predictability is greater than \$1,500. In the sample, mean tuition across all states in all years was \$4,310.72, so a \$1,500 increase represents an approximately 35% increase in tuition levels. While institutions in Illinois reacted in a manner that was predicted by the incentives built into the Truth-in-Tuition law, our results show that the law is flawed if its intent was to promote college affordability. One of our policy recommendations is that policymakers in Illinois should consider modifying the law in a way that promotes predictability without incentivizing tuition increases.

Education Policy and College Readiness in Illinois

Janet K. Holt, PhD, Executive Director
Illinois Education Research Council

This work is motivated by two contrary realities in Illinois. First, is the degree production deficit in Illinois. Illinois has adopted the 60 x 2025 goal that has dominated the national agenda—60% of our state’s adult population will complete a high-quality, formal postsecondary educational program and attain a college credential by 2025. In order to reach this goal, we must increase high quality higher education degrees by 42%. Attaining this goal requires dramatic and concerted efforts to facilitate educational progress across the educational sectors, for both traditional and non-traditional learners. Additionally, as our and other research indicates, college readiness is a key factor that foreshadows later college success. This presentation highlights both the challenges in reaching the states’s educational benchmarks, as well as the various efforts that are occurring in the state of Illinois designed to accelerate our progress toward the 2025 goal. These college readiness initiatives are framed as four types: K-12 preparation, remedial education, pathway programs, and transition programs. This presentation concludes with summary comments regarding these efforts as well as considerations for future Illinois education policy on college readiness.

Changes in Teacher Practice and Student Outcomes in a Middle Grades Science Teacher Professional Development Program

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The Loyola University Chicago Middle Grades Science Project (MGSP) has demonstrated impact on teachers' inquiry-based practices and student achievement. The MGSP prominently features professional development on an inquiry-oriented research-based science curriculum. This professional development captures the five core aspects of high quality teacher professional development identified by Desimone (2009) and includes multi-level teacher supports; including at minimum, 54 hours of professional development on a high-quality research-based curriculum, and for some teachers includes additional PD and coaching. Inquiry-based instruction has been shown to positively influence student achievement and is integral to implementing the Next Generation Science Standards (NGSS). Given Illinois' recent adoption of the NGSS, it is important to identify programs and activities that positively affect teacher inquiry-based practices.

Program participation, teacher practice and student achievement variables were analyzed and revealed a significant increase in teachers' use of inquiry-based instructional practices and a significant decrease in direct instruction practices between 2010 and 2012. After controlling for demographic variables, statistically significant and marginally significant relationships were found between various teacher variables (degrees of program participation and types of teacher practice) and student achievement variables (ISAT and EXPLORE scores) during the years 2010-2013.

Evaluation of the Illinois Mathematics and Science Academy’s FUSION Program: Impact on Teachers’ Professional Practice

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Evaluation Context and Purpose:

The presenters will discuss the findings from the first year of a program evaluation contract conducted by the Center for Evaluation and Education Policy (CEEP) at Indiana University for the Illinois Mathematics and Science Academy’s (IMSA) FUSION program. The evaluation focused on capturing the impact of the IMSA FUSION professional development program on mathematics and science teachers trained to implement the program’s enrichment STEM curriculum (fourteen curricular units for 4th-8th grades) across 94 sites during the 2013-14 school year. IMSA FUSION curricular units are aligned with the Next Generation Science Standards and focus on helping students “learn how to learn,” emphasizing logic, inquiry, problem-solving, mathematical thinking, and experimental scientific thinking. Each year IMSA FUSION teachers and coordinators participate in a variety of professional development activities. The collaborative nature of this professional development models the integrative, problem-centered, inquiry approach that is used with the IMSA FUSION students at each site. The evaluation examined the intended impact of the STEM program’s professional development on teacher and classroom-level outcomes, specifically changes in teachers’ knowledge and skills in STEM disciplines, as well as teachers’ instructional practices within their classrooms across other disciplines. Evaluation data collection methods included web-based self-report surveys from teachers, principals, students, and parents; teacher instructional feedback forms; and observations of teaching of the STEM curricular units.

Findings:

Principal survey respondents agree that teachers in their schools have enhanced their regular classroom instruction because of IMSA FUSION. Teacher survey respondents identified a variety of their classroom teaching duties and instruction that are directly influenced by their experiences as instructors in the IMSA FUSION program, including having students identify problems/issues and strategies for addressing them; having students work in pairs/teams to collect and analyze information; having students engage in group discussions to reflect on their learning; and using real-world examples in their teaching of content. FUSION instructors are demonstrating high quality preparation, organization, and implementation of the curricular units; and appropriate use of facilities, space, and equipment. FUSION instructors are also fostering student participation and team work; creating purposeful activities; supporting student engagement with STEM and STEM content learning; promoting inquiry and problem solving; and facilitating reflection, relevance, and making connections by students.

Exploring the Relationship between Differential Public School Funding and the College Readiness of Illinois High School Students

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Purpose

The purpose of this study is to investigate the impact of differential public school funding on the college readiness of Illinois high school students. A persisting challenge in creating a system of equitable funding in United States public schools is that the use of local property-based funding creates unevenness across schools. Any corrections of these disparities is based on state policies to redistribute revenue in a more equitable fashion. Illinois is one state in which the contributions of local property taxes used to fund public schools far outweighs the combined state and federal contributions (CTBA, 2013). Multiple attempts, both legislatively and judicially, have been made to redesign the Illinois public school funding system to produce a more equitable distribution of financial resources. The deniability of both the Illinois judicial and legislative government branches in addressing the disparate impact of the school funding system has shaped the Illinois public school system in to what is now one of the most regressive systems in the country, allocating less monies, on average, to schools that are charged with educating the state's poorest students. Forty-four years of providing "an efficient system of high quality public educational institutions and services" (Illinois Constitution, 1970) has efficiently maintained a stratified educational system that is of high quality to some but lacks equity for all.

Data & Methods

This study will examine the implications of the current public school funding structure as it relates to academic achievement measured by college readiness. We examine secondary data from the Illinois public high school cohort of 2003. Student-level data (N=85,523) used to examine college readiness, obtained under data sharing agreements with ACT, the Illinois Board of Higher Education, and the National Student Clearinghouse (NSC), was merged with school-level data (N=642) used to examine public school funding was obtained from the Illinois High School Report Card.

Findings

The descriptive findings suggest major differences in the college readiness of Illinois public high school students when disaggregated by race and gender. Regardless of gender, the majority African-American, American Indian/Alaskan Native, and Hispanic students, are not/least ready for college, where the majority of white and Asian students are most ready for college. School funding findings are not as different. For African-American and Hispanic students, the majority attend schools that are in the mid-high quartile of funding, while the majority of Asian students attend schools that are in the high quartile of funding. Accounting for student achieved and ascribed characteristics, the preliminary HLM findings indicate positive and statistically significant relationships between the college readiness of Illinois public high school students and per-pupil school and instructional expenditures. The relationships are significant and positive when disaggregating by race.

Implications

Implications from the findings will inform legislative efforts to change the current public school funding structure in Illinois. Implications from the findings may be useful for policy makers in determining the allocation of public school funds. Schools that serve student populations identified as benefitting the most from extra support may become beneficiaries of changed funding policies.

Implications of Senate Bill 16: An Analysis of Illinois Funding Adequacy and Equity

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Adequacy and equity are central concepts in the discussion of school funding and have long been an ideal of American funding systems. Recent work has, once again, thrust the question of whether money matters into the limelight, finding that court ordered-changes to funding systems have led to increased student outcomes.ⁱ In-line with these findings, a recent report developed for the Illinois State Board of Education by Augenblick, Palaich and Associates called on the state to develop a school finance system that is sensitive to all the needs of school districts, promotes wealth equalization, and works in conjunction with local funds to assure adequate and equitable funding for students and equitable tax rates for taxpayers.ⁱⁱ This report and the Senate committee that led to its development resulted in legislation (SB16, Session 98) that would update Illinois' school funding system in-line with this recommendation.

The objective of this study is to provide a clearer understanding of SB16's implications for both funding adequacy and equity in Illinois. The study provides a descriptive analysis of the distribution of funding under the current school finance system and that provided by SB16 using quintile analysis. This mixed-methods study includes a description and analysis of the current methodology for adequacy in Illinois, as well as its technical and conceptual limitations. Specifically, it consists of a detailed description of the quantitative results for the last time the adequacy model was run (based on a replicating the current methodology). It provides background on other adequacy methodologies and what they suggest about funding levels in Illinois. "Need" is defined using the weighting system defined in the legislation, while property values use the equalized assessed valuation that is used to calculate property taxes in the state.

The results shows that even without additional revenue the bill would lead to more equitable distribution of dollars to districts both based on the level of need in districts and based on the property values of the schools in districts. We provide additional descriptive analyses of current funding levels in Illinois across districts in comparison to a hypothetical definition of adequacy implied by SB16. The results of this analysis will provide the number of districts and percent of students that would be funded adequately under scenarios with different target "based amounts" for the formula and additional revenues.

While much of the attention in SB16 has been devoted to a discussion of equity, less attention has been devoted to the legislation's implications to adequacy. The stated goal for funding adequacy is generally to determine the funding level necessary to ensure that students are able to meet state education standards. The bill calls for the implementation of an adequacy study that can both determine the base cost for student spending (i.e. a student with no additional needs) and appropriate weights. Our study explores how SB16 changes the conversation about adequacy and what the bill suggests for both doing an adequacy study and developing a long-term strategy for adequate funding.

ⁱ Jackson, C. K., Johnson, R., & Persico, C. (2014). *The effect of school finance reforms on the distribution of spending, academic achievement, and adult outcomes*. NBER Working Paper No. 20118. Cambridge, MA: National Bureau of Economic Research.

ⁱⁱ Augenblick, Palaich & Associates. (2013). *Overview of the structure of the Illinois school finance system to the Illinois State Board of Education*. Denver, Colorado: Author.