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THE DISTRIBUTION OF TEACHER QUALITY IN ILLINOIS

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There now exists ample evidence showing a relationship between teacher quality and student outcomes. Yet, the question remains: What is it that makes a high-quality teacher? Over the last 30 years, numerous studies have examined the association between measurable attributes of teachers, such as their number of years of teaching experience, and student outcomes in an effort to get at this issue of teacher quality. Two recent meta-analyses of these studies (Rice, 2003; Wayne & Youngs, 2003) concluded that the following measurable attributes of teachers make a difference for student achievement:

- years of teaching experience;
- selectivity of the teacher's baccalaureate college;
- advanced degrees in their teaching subjects (evidence at this time limited to high school math and science);
- subject-specific teacher certification (evidence at this time limited to high school math);
- and teacher test scores (link especially strong for at-risk students).

A 2002 study using New York state data found that teacher quality attributes like those listed above are distributed unequally across schools within and across geographic regions in New York (Lankford et al., 2002). The purpose of this study is to examine the distribution of select teacher quality attributes across schools in Illinois.

Data and Methods

The primary source of data for this study is Teacher Service Record (TSR) data maintained by the Illinois State Board of Education (ISBE). Additional information on Illinois teachers' attributes was obtained from the Teacher Certification Information System (TCIS) data, which is also maintained by ISBE, Illinois school report card files, and from ACT, Inc. The 2002-2003 cohort of Illinois K-12 public school teachers serves as the sample for this study. Both full- and part-time teachers (N=140,668) were included in the sample.

Given the data available in Illinois, I constructed the following teacher quality measures for Illinois schools:

Quality Indicator	Measures
Years of teaching experience	<ul style="list-style-type: none">• % of 1st year teachers in the school• % of teachers with < 4 years experience
Selectivity of BA institution	<ul style="list-style-type: none">• % of teachers with BA degrees from most-competitive colleges
Subject-specific certification	<ul style="list-style-type: none">• % of teachers with emergency or provisional credentials (school reported)
Teacher test scores	<ul style="list-style-type: none">• % of teachers who failed Basic Skills test on 1st attempt• average ACT scores of teachers with 5 or fewer years of teaching experience in each school

To examine the distribution of these attributes across schools, I calculated school-level means for each attribute. This produced close to 3900 data points for each attribute, one for each school in the state. I then examined the distribution of these school means for the state as a

whole and for different schools types (i.e., low- versus high-income, low- versus high-minority) in the six regions of the state (Northeast, Northwest, East Central, West Central, Southeast and Southwest). Because the distribution of school averages is skewed on each of the attributes, I present three data points within each distribution, namely the 10th percentile, median, and 90th percentile.

Findings

Teacher quality is distributed unequally across schools within and across geographic regions in Illinois. In general, low-income (high-minority) schools tend to be more disadvantaged than high-income (low-minority) schools in terms of the quality of their teachers, although the disadvantage is not universal across regions or on every quality attribute. Low-income schools in Chicago and East St. Louis tend to be more disadvantaged than low-income schools in other regions of the state. Yet, even within a particular school type (e.g., low-income schools, high-minority schools), there exists substantial variation in teacher quality attributes across the schools within each geographic region. These results suggest future work to identify additional school characteristics that may explain these findings.

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DUAL CREDIT IN ILLINOIS: MAKING IT WORK

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The Office of Community College Research and Leadership (OCCRL) of UIUC has had a long-standing relationship with the Illinois Community College Board (ICCB) and the Illinois State Board of Education (ISBE), providing technical assistance related to high school/ community college articulation. In 2003, OCCRL was asked to look into ways that dual credit courses and programs could be implemented in Illinois to best facilitate student transitions from high school to college. This research was undertaken to better understand how dual credit is currently implemented in Illinois and to identify best practices that can be replicated by others.

To examine this issue, a set of ten key decisions related to the development of dual credit programs was identified. These include decisions that colleges typically make on how to structure: 1) Program approach, 2) Organization and funding, 3) Course delivery, 4) Student selection and guidance, 5) Faculty selection and supervision, 6) Quality assurance, 7) Relationships with high schools, 8) Credit award and transfer, 9) Marketing and public information, and 10) Monitoring and evaluation. Each of these decision areas were explored using a mixed method design. First, telephone interviews were conducted with a representative from each community college in the state; subsequently, site visits were made to four colleges considered by their peers to have especially strong dual credit programs. Findings are described for each of the decision areas, with short descriptions of the four colleges' programs included.

STUDENT MOBILITY PATTERNS IN THE CHICAGO PUBLIC SCHOOLS

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Purpose of the Research

The purpose of this research is to examine some effects of mobility on student and school level outcomes in the Chicago public schools. Student mobility is a pervasive characteristic of most urban districts but there is surprisingly limited information about its patterns and its impact on schools. The focus tends to center around the negative influence on the individual students who are changing schools. Certainly, this is a primary concern; however, the potential broader effect on the schools that serve such unstable groups of students is less well understood. Rather, mobility becomes a background issue when considering school performance or district policy. The assumption tends to be that this is an issue which is outside of the purview of schools. However, a more nuanced understanding of trends in student movement over time, how instability is dissimilarly distributed across schools, and how the timing of school changes may impact students and schools differently begins to bring this default assumption about the “intractability” of student mobility into question.

Student mobility, most often defined as a student changing schools for reasons other than reaching the final grade offered by their school (Rumberger, 2002), is salient for school systems for several reasons: 1) student movement during elementary school has been shown to increase the likelihood of dropping out during high school (Roderick 1994, Rumberger and Larson 1998) and 2) mobility has been shown to negatively affect student’s academic growth trajectories (Alexander, et al, 1996; Ingersoll, et al, 1989; Nelson, et al, 1996; Temple & Reynolds 1999; U.S. General Accounting Office, 1994).

We have several objectives for this research:

1. We seek to determine how and if student mobility in Chicago today has shifted from patterns we observed in the 1990’s.
2. We seek to explore whether student movement during the summer and during the school year exhibits differing effects on student performance.
3. We seek to determine if high levels of mobility are concentrated in low performing schools. Along these lines, we also seek to generate some hypotheses regarding the relationship between a school’s accountability designation and its rates of student mobility.

Methodology

For our analysis, we employ student level enrollment data from the Chicago Public School’s data banks. In addition to enrollment data, we utilize student and school level test scores on the Iowa Test of Basic Skills. A significant part of our analysis is based on a cohort of over 39,000 students who began 1st grade in the Chicago Public Schools in 1999. This cohort includes all Chicago first graders except those students enrolled in schools with discontinuous grade configurations and schools that offer only grades K-2 or K-3. We sample students in this way to ensure that student movement in our sample is not a result of some reason other than changing schools because of reaching the final grade offered by the school. This sampling approach eliminated students from 23 of the 545 elementary schools open in 1999. We observe the cohort’s movement through the fall of 2003, when our students enter the 5th grade.

Descriptive statistics of the extent of student movement are explored not only in terms of single school-year and summer-time changes, but also the longitudinal stability of students and schools over a several year period. The longitudinal nature of the dataset allows us to identify a subgroup of highly mobile students who change schools frequently and have a different profile from other students that deserves particular attention. In addition, schools that tend to serve these highly mobile students can also be identified and their trends in overall achievement compared to other schools.

Because student mobility is largely internal to Chicago public schools (that is, students are more likely to move between Chicago schools than outside the district), it is possible to examine whether there are clusters of schools that are actually connected by the students that move between their classrooms (Kerbow 1996). Advanced statistical clustering techniques (Frank 1995, 1996) are employed to identify networks of schools that are more likely to “exchange” students with each other than with other schools which may, in fact, be closer geographically. We can then map these networks and examine what other characteristics the schools have in common. These networks have potentially important policy implications as mentioned below.

Summary of Findings

1. Patterns of school stability in Chicago’s elementary schools today are similar to patterns of stability that existed in the early and middle 1990’s. In the cohort of elementary school students we studied over a four-year period, less than half of the 5th grade students remained in the school they enrolled in for the 1st grade.
2. While student mobility during the summer and during the school year both negatively correlated with achievement in our cohort students (as measured by Iowa Test of Basic Skills scores) mobility during the school year appears to have the greatest impact on student performance.
3. Students who moved more than once made up a large portion of our cohort’s moves. In other words, students who move multiple times account for a sizable portion of moves.
4. Highly mobile students (students who move more two or more times during elementary school) tend to be concentrated in lower performing schools. Thus, these schools face not only a more unstable enrollment, but also students whose educational experience has been continuously been disrupted.
5. Some clusters of schools exhibit dense exchanges of students. These networks are stratified by racial composition, low income, and academic achievement level. That is, patterns of mobility are bounded by race and income. Lower achieving schools have their networks and relatively more affluent, higher achieving schools have theirs. Students are more likely to circulate within these networks than to cross them.
6. Schools on probation (very low performing schools) in Chicago have consistently higher rates of school year mobility than non-probation schools. However, there appears to be little difference between probation and non-probation schools in terms of their rates of summer mobility.

Implications

We believe this research has significant implications for the Chicago Public Schools and for other urban school systems. First, from our work, we believe that mobility during the school year poses more reasons for concern for district officials. This is not to say that summer mobility is benign; however, we think that policies on school mobility might be more effective if they target school year movement. Second, students who move multiple times are at most risk for academic difficulty. Efforts to identify these students, provide immediate supports, and attempt to stabilize their school experience are crucial. Finally, for clusters of schools that frequently exchange students,

coordinated efforts can be developed among these schools to share information about students, to encourage stability at a school within the network (at least during the school year), and to locate and provide services for families within the neighborhood.

While we know that problems associated with mobility are most pronounced in urban areas, rural areas also experience mobility (NCREL). So we believe that while our research would benefit the large urban centers of Illinois, rural areas that struggle with mobility problems may also benefit from our work.

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ILLINOIS PRINCIPALS: INSTRUCTIONAL LEADERS OR ENDANGERED SPECIES?

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Abstract

Educational researchers and policymakers across the country are concerned about a perceived and potential principal shortage. The purpose of this study was to answer the following research questions:

- Is there, or will there soon be, a shortage of highly qualified principal candidates in Illinois? Is this a regional problem?
- What factors influence teachers and other certified staff to become, or to not become, a principal?
- What can be done to increase the number and quality of principal candidates and what can be done to retain high-quality principals?

Most principal shortage studies have gathered information from current principals and superintendents. This study solicited information from prospective principals. The study employed multiple research methods: 1) focus groups composed of current and retired principals; 2) a statewide survey of current, prospective, and former principals; and 3) in-depth interviews with education stakeholders. All study components obtained information from each of the various geographic regions in Illinois and from the different types of schools—elementary, middle/junior high, and high school.

Over half of the current and prospective principals do not believe there is a current shortage in their district, but most believe there will be a district or regional shortage within the next 5 years. Although almost 40% of the principals say that they plan to retire in the next 5 years, more than 59% of the prospective principals indicate they plan to seek a job as a principal during the same time period.

Views of principals and prospective principals were quite different in many respects. Prospective principals were more likely to list the following issues as barriers to becoming a principal: enjoyment of their current teaching position, contact with students, the ability to “make a difference,” finding a school with the same values as the candidate, and politics in hiring practices.

Principals from schools with a high percentage of students from low-income households were more likely to cite three issues as a major factor that might prevent people from becoming principals: pressure to improve school performance, meeting the demands of federal and state mandates, and responsibility for meeting state standards and assessments. Minority principals were much more likely to rate “pressure to improve school performance” as a major factor.

Policy Implications

Prospective and current principals suggest policymakers: 1) give principals the ability and authority to make a difference, 2) support education to give the job more prestige, and 3) give principals more support with both staff and school funding so the principal can spend more time in the classroom.

Because principals' duties and responsibilities have changed and increased dramatically, the demands now placed on principals' time are so great that they affect the quality of principals' lives. A realignment of principals' responsibilities and a redefinition of the principal position must be addressed by school districts and policymakers.

More research is needed focusing on prospective principals, especially their motivations and the barriers they view to becoming principals.

DIMENSIONS OF SCHOOL CULTURE: AN ELEMENTARY AND SECONDARY SCHOOL TEACHER AND ADMINISTRATOR PERSPECTIVE

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The purpose of this paper is to utilize a newly developed measure of multiple dimensions of school culture and to describe the results of a study of school level environment characteristics defined in terms of elements of school culture. More specifically, the objectives are fourfold: (a) to expand and validate the structure of a newly developed measure of multiple dimensions of school culture using both exploratory and confirmatory factor analysis (LISREL); (b) to report findings of teachers and administrators' perceptions of elements of school culture; (c) to discuss the implications of understanding school level learning environments from a school culture perspective and the need to be sensitive to school context when measuring teachers and administrators' perspectives of school culture; and (d) to test for measurement and structural invariance of school culture elements constructs using data from both Illinois and Florida states.

Conceptual/Theoretical Frameworks

Studies at the school rather than the classroom level have begun to appear in the literature. A variety of measures have been developed to measure school level characteristics such as school organizational coupling structure (Logan, 1990), bureaucratic and professional role orientations (Chauvin, 1992), decision deprivation and work alienation (Johnson, 1991), supervisory climate (Claudet, 1993), professional learning environment and individual, collective and organizational efficacies (Loup, 1994), receptivity and resistance to change, (Chauvin, 1992; Loup, 1994; Clarke, 1997), and recently, elements of school culture (Bobbett, Olivier, Ellett, Rugutt, & Cavanagh, 1998; Cavanagh, 1997; Ellett, Rugutt, Davis, & Cavanagh, 1997; Olivier, 2001). These studies have also focused on establishing linkages between these school level environment and organizational variables and various indices of school and organizational effectiveness (Clarke, 1997; Ellett, Logan, Claudet, Loup, Chauvin, & Johnson, 1997; Olivier, 2001).

Past research has also shown that learning environment perceptions can differentiate between a variety of subject matter areas, grade levels, and classroom groups (Ellett, 1986) and between school-level climate characteristics. A few studies have also analyzed relationships between teacher behaviors and characteristics of the psychosocial learning environment (Bobbett, et al. 2002; Ellett, Capie, and Johnson, 1980; Ellett, Loup, & Chauvin, 1991; Johnson, 1991; Loup, Ellett, Chauvin, Lofton, Hill, & Evans, 1993). Studies of learning environments have as well, often compared teachers' and students' perceptions of actual and preferred characteristics of learning environments Fraser, 1993). DuFour and Eaker (1998) stress that if schools are to be significantly more effective, they must embrace a new model that enables them to function as professional learning communities. This model of school improvement relies upon the continuous learning of the professionals within the school as they go about their work. According to Hargreaves (1995), working together is not just a way of building relationships and collective resolve; it is also a source of learning. Within collaborative cultures, the emphasis is on shared learning in addition to individual learning. This is, indeed, what Senge (1990) means by organizational learning.

The development of the professional learning community addresses the need for school reform to focus on second order changes that seek to alter the values, beliefs, and expectations that contribute to the school culture. DuFour and Eaker (1998) maintain that if school reform through a change initiative is to be sustained, the elements of the change must be embedded within the culture of the school.

Reform efforts have generally overlooked the culture of the school due to preoccupation with structure (e.g., policies, procedures, and rules). However, focusing on culture does not mean that structure will be ignored. It should be recognized, however, that changes in structure can (and often do) affect the culture of the school (DuFour & Eaker, 1998). The reverse is also true. In fact, Fullan (1993) states that reculturing leads to restructuring more effectively than restructuring leads to reculturing.

At the school level, culture emanates from interpersonal interactions between individual teachers, groups of teachers, administrators and others, and produces common perceptions and shared meanings among these groups reflecting collective beliefs, attitudes, and values of school personnel (Cavanagh, 1997). It represents the shared assumptions, beliefs, values, and habits that constitute the norm for the school and that shape how school organizational members think, feel, and act. Thus, school culture frames a sense among school staff of *who we are and what we do around here*. Culture can be observed also in the relationships among colleagues and the norms that govern school activities. Productive and positive school cultures can make a significant contribution to creating professional learning communities through norms, values, and relationships that sustain momentum for school improvement over time (Boyd & Hord, 1994; DuFour & Eaker, 1998).

Changing school culture can be very challenging because it entails altering long-held beliefs, expectations, and habits. Existing culture is one reason that school staff resist changing the status quo. Hargreaves (1995) notes that developing collaborative cultures entails *reculturing* the school from individualism, where teachers work largely in isolation, and balkanized cultures, where teachers work in self-contained subgroups. Both of these types of cultures tend to fragment professional relationships and to limit trust and collaboration. The norms or informal rules that govern behavior influence change efforts too. Specific cultural norms facilitating school improvement include a widely shared sense of purpose and a norm of involvement in decision-making (Boyd, 1992b).

While schools have previously focused their improvement efforts on the structural aspects of the school, such as policies, procedures, and rules, focusing on culture does not mean that structure will be ignored. Although changes in structure do not necessarily result in changes in attitudes, beliefs, assumptions, and habits of personnel, these changes can indeed affect the culture of the school. For example, policies and procedures that result in teachers working in isolation will present barriers in efforts to create a professional norm of collaboration (DuFour & Eaker, 1998).

In studying factors that contribute to the development of professional community in schools, Louis, Marks, and Kruse (as cited in Stolp & Smith, 1995) have noted evidence in support of the argument that the structural elements of “restructuring” have received excessive emphasis in many reform proposals, while the need to improve the culture, climate and interpersonal relationships in schools has received too little attention. While it may be easier to imagine how to restructure schools rather than to change their culture, the latter is the key to successful reform. Culture serves as a powerful influence on the effectiveness of a school by signifying to the community members in the school what is deemed truly important and how they are to act within the school. Lane (as cited in Stolp & Smith, 1995, p. 14) states “the power of school culture lies in its recognition that movement of schools toward greater effectiveness must begin with attention to subtle, habitual regularities of behavior that comprise the culture of the school.” For example, if teacher collegiality is promoted by a principal in a school in which teacher isolation is the norm, it is necessary to initiate some activities or steps in order to make the transition from one of isolation to operation as a collegial staff (Stolp & Smith, 1995).

The concept of school culture provides school leaders with a more holistic way to look at the school and school reform. By deepening their understanding of school culture, leaders are able to influence the values, beliefs, and underlying assumptions held by school community members (Stolp & Smith, 1995). Culture provides school leaders with a powerful intuitive method for understanding their school’s own “unwritten rules and traditions, norms, and expectations that seem to permeate everything: the way people act, how they dress, what they talk about or avoid talking about, whether they seek out colleagues for help or don’t, and how teachers feel about their work and their students (Deal & Peterson, 1999, p. 2).

Those in a professional learning community are attentive to both school structure and culture in their efforts to create the best climate of improvement. To the extent that school reform creates a new culture of learners, structural changes will follow.

Methodology Measures

The measure used in the study was a revised (Olivier, et al., 1998) of the original School Culture Elements Questionnaire (SCEQ) developed by Cavanagh (1997) for use in Australian schools. The original SCEQ defined 8 cultural elements that indicated specific descriptors of teacher behaviors or beliefs. The questionnaire included 8 cultural elements each comprised of 8 items for a total of 64 items. The original SCEQ consists of two sections: actual and preferred.

The *actual* survey addresses “how I and my school actually are”... and requires participants to respond to statements according to how they see factors, events, and conditions actually occurring in their schools. The *preferred* survey measures teachers’ perceptions of how they would prefer things to be in a school in which they “wish” to work, thus detailing their preferences for characteristics of an ideal school. The response format is a four-point, forced-choice Likert scale (1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree). The study reported here reflects revisions of the original school culture measure {referred to as the Revised School Culture Elements Questionnaire (RSCEQ)} reported in Ellett, et al, (1999) in the second phase of development of this new measure. The revisions to the original RSCEQ developed by Cavanagh (1997) included (a) editing the original items for use in the USA (e.g., substituting *assistant principal for school deputy*), and (b) adding an additional 14 items to the original 64-item instrument. A list of the 78 items comprising the RSCEQ used for the study will be presented in the final paper.

Sampling

The Revised School Culture Elements Questionnaire (RSCEQ) was administered to 93 teachers and administrators in a school district in Illinois over a two-week period in the spring of 2002. Further, 1,599 teachers and administrators in Florida were surveyed using the same instrument. All data was collected voluntarily and the anonymity of respondents was maintained.

Data Analyses

Five kinds of data analyses were completed for the RSCEQ survey: 1) descriptive statistical summaries for instrument items and subscales and characteristics of the total sample; 2) a series of exploratory principal components analyses with orthogonal rotations (Varimax procedure) to identify latent constructs measured by the RSCEQ; 3) alpha reliabilities of the factored RSCEQ dimensions to explore internal consistency of the data schools); (4) correlations between identified dimensions of school culture; and (5) a confirmatory factor analysis (structural equation modeling) of the identified latent constructs.

A series of principal components factor analyses with orthogonal rotations were completed on the teacher response to the *actual* section of the survey. The factor analysis results for the total sample (n=1500) supported a five-factor solution accounting for 42.7% of the item variance that best represented the RSCEQ measure. This solution and an accompanying set of decision rules retained 58 of the original 78 items. The four factors identified, the number of items retained, percentage of variance explained and Alpha reliability of each were as follows: Vision/Leadership (19) (20.19%) (.92); Collegial Teaching and Learning (15) (7.60%) (.83); Professional Commitment (10) (5.42%) (.77); and Openness/Collaboration (10) (4.86%) (.61). Results of factor analyses of the teacher groups partitioned by school level, was also completed. Loadings for retained items varied from .33 to .76 for all the identified factors. Further, the school culture elements hypothesized model, according to the empirical data used in this study, was evaluated using structural equation modeling (SEM) approach.

The results of this study are of interest from a variety of perspectives. First, they provide continuing support for the usefulness of the RSCEQ as a measure of multiple dimensions of school culture. It is shown that multiple dimensions of school culture can be identified and measured with reasonable reliability. From the validity perspective, our interpretation of the results suggests that the RSCEQ measures perceived elements of a school culture grounded in norms reflecting general professionalism among teachers. The major findings and conclusions of the study are discussed in view of their implications for future research; measurement theory, research design methodology and practice in the paper to be presented at the IERC conference.

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THE HIGHER ED HIGHWAY FOR LATINOS: LIMITED ACCESS & LIMITED HORSEPOWER?

Michael T. Peddle and John L. Lewis

Principal Research Questions

Why are Latinos underrepresented among students and degree recipients at public universities? Why do Latino students at all levels seem to trail many other student groups in their likelihood to persist in school?

Methodology and Purpose

The paper is based on the analysis of information gathered from interviews, focus groups, and surveys of high school and college students, parents, principals, faculty, and community leaders, and an analysis of high school, community college, and university transcripts of both Latino and non-Latino students, as well as information gathered by the Illinois Board of Higher Education in its ongoing research on underserved groups of higher education stakeholders. The primary goal of the research is to inform the policy decisions related to the lagging matriculation, persistence, and degree completion rates of students of Latino ethnicity.

Research Participants/Sample

The academic records of approximately 250 community college and university students (Latino and non-Latino) were analyzed (including high school transcripts for approximately 75 of these students) to determine college preparation, curricular choice, and academic performance patterns that might differentiate Latino students from other students in the cohort or near cohort. Approximately 20 “key informants” at high schools (principals, guidance counselors, teachers), at community colleges (student affairs staff, financial aid officers, counselors, admissions staff), and at universities (admissions officers/counselors, student services professionals, transcript analysts, faculty, counselors) were interviewed on a one-to-one basis to gain their insights into the answers to the research questions. Approximately 30 Latino students and recent alumni of community colleges and universities were interviewed, primarily in a series of small focus groups held at Waubensee Community College, Northern Illinois University, and Northeastern Illinois University. Each of these students also filled out a short survey to give us more information about their particular background, academic experiences, and attitudes. In addition, information from secondary sources including NCES surveys, NIU Campus Climate surveys, a community study of Berwyn/Cicero’s Latino community by the Institute for Latino Studies at Notre Dame, recent focus groups with Latino parents in Aurora conducted by a partnership among NIU’s Center for Latino Studies and Aurora schools and community groups, studies by the Tomas Rivera Policy Institute, and the Pew Hispanic Center were all incorporated into our analysis and results.

Findings

Our research confirmed many of the common speculation about the reasons for the lack of representation of students of Latino ethnicity among college student and degree recipients in Illinois. Our findings also contradicted many of the things we had been told to expect to see before undertaking the study. We found evidence that Latino students are often doomed to not going to college by decisions and lack of support mechanisms and counseling provided in the fourth grade and earlier. Despite the best of intentions, Latino students often enter high school

with curricular needs that make college preparation a low priority or near impossibility. Furthermore, our research indicates that the academic advising and curricular support Latino students often receive places them at a distinct disadvantage to pursue a four-year degree. Those Latinos who do pursue four-year college degrees are very similar to their classmates in terms of course and major choices (with a few notable exceptions such as the lower propensity of Latinos to major in nursing or mechanical engineering or any foreign language except Spanish), as well as the propensity to stay in good academic standing. While cultural factors seem to influence persistence, financial and immigration issues are also major influences on matriculation and degree completion. The paper concludes with recommendations to increase Latino access to higher education.

Implications for Illinois education

Our results suggest several key intervention points for possibly making progress in Latino college matriculation, persistence, and degree completion. They indicate the need to target college planning and preparation efforts to students and parents as early as the third or fourth grade, the need to affirmatively advise students (and Latino students in particular) of the differences between curricular requirements for high school graduation and for college admission and success, and the particular need for special support systems to address the special circumstances and experiences of Latino students and their families. While there is much research yet to be done, we believe that our results add significantly to the body of knowledge and policy prescriptions related to better rates of matriculation, persistence, and college degree completion among students of Latino ethnicity.

THE IMPACT OF EARLY HIGH SCHOOL MATHEMATICS SUCCESS ON SUBSEQUENT MATHEMATICS ACHIEVEMENT AND POLICY IMPLICATIONS

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Purpose

This presentation will focus on the mathematics course-taking patterns and pass/fair rates of Chicago Public Schools high school students between the years of 2000 and 2002. The results of these analyses provide evidence for potential policy changes within the district concerning mathematics instruction. The current discussion will conclude with a synopsis of steps that the district is taking in the present school year and will include preliminary data resulting from these policy decisions. If time allows, discussion of science course taking patterns will also be presented.

Methodology

The data for these analyses consist of 58,925 students who were in the 9th, 10th, or 11th grade in the 2000-2001 school year and who had final course grades in the high school course files for this and the subsequent (2001-2002) school year.

Findings

The main pattern of course taking appears to be algebra in 9th grade, geometry in 10th grade, and advanced algebra and trigonometry in 11th grade. Some students (17%) go on to take other advanced courses (college algebra, pre-calculus), but most do not. The general requirements for graduation in Chicago Public Schools include these 3 math courses of algebra, geometry, and trigonometry – in no particular order.

In many math courses, students who fail in 2001 continue on to take the next math course in the sequence mentioned above, in 2002. For example, 54% of the 9th grade students (2955 of 5480) who failed algebra in 2001 took geometry in 2002, while only 8% (455 students) retook algebra.

Thirty-five percent of all students who (1) failed 9th grade algebra in 2000-2001 and (2) did not take summer school or failed the summer algebra course, did not have data in 2002. This suggests that these students may have dropped out or transferred. Students that (1) failed 9th grade algebra in 2000-2001 and (2) did not take summer school (or failed the summer algebra course) for whom there were data in 2002 fell into four categories. Seventy two percent of these students were put into geometry in 2002, 14% retook the course in 2002, 3% did not take any courses in 2002, and 2% took two algebra and geometry simultaneously. **These results indicate that in most cases, students who fail algebra are promoted to geometry regardless of summer school enrollment or grade in summer school algebra.**

Most importantly, these analyses demonstrate quantitatively that students who pass a math course in 2000-2001 have dramatically higher pass rates for math in the subsequent year than do students who fail their math class in the 2000-2001 school year. This pattern is consistent throughout grade levels and courses, and is particularly strong for 9th grade algebra. Specifically, 83% of 9th graders who passed algebra in the 2000-2001 school year, passed geometry in the

2001-2002 school year. Only 46% of students who failed algebra in the 200-2001 school year passed geometry the following year. **This evidence suggests, perhaps not surprisingly, that students who pass their first high school math class are substantially more likely to pass subsequent math courses.** In addition to these findings, analyses suggest that many students who fail in 2001 do not have data for 2002, which suggests that they are no longer in the system (e.g. transfer, drop out) or were otherwise not recorded in the course files for some reason.

Implications

There are several findings from these analyses that may have important policy implications. The main finding of these analyses is that students who fail math one year are substantially more likely to fail math courses in subsequent years. Since it appears that failing at the 9th grade level strongly impacts achievement in future years, examination of coursework and instruction at this level is crucial. In addition, as suggested by the analyses, if students disproportionately drop out/leave the system after having failed an early high school math course, providing such students with extra instruction in early math courses may impact their propensity to leave the system.

Another important finding is that students are progressing to the next level in many math courses despite previous failures. Because the district does not have prerequisites for math courses, students who fail a math course are still eligible to take the next course in the sequence. Thus, the data may suggest consideration of a policy mandating that students receive a passing grade in math classes that precede increasingly advanced material or strategies for addressing classrooms of students that are mixed with students that both have and have not passed their previous math course.

The implications of these analyses have been acknowledged by the district and preliminary steps have been taken to address the clear need for early high school math passage rates to be improved. The data in this analysis have prompted the district to implement a policy whereby students scoring below the 50th percentile on a math portion of the Iowa Test of Basic Skills (ITBS) in grade 8 are required to attend two periods of Algebra (one focused solely on Algebra problem solving) in grade 9. In this way, extra support and instruction is provided to ninth grade students early in their high school careers in order to assist them in fulfilling CPS graduation requirements in mathematics. The initial year of the policy is the current school year 2003-2004. Analyses of these grades as well as final grades are forthcoming. In addition, analysis of the quality of the implementation of the program among schools is currently taking place.

**TO TRAIN THE MINDS OF THE CHILDREN: A CONSIDERATION OF THE
CONTEMPORARY APPLICABILITY OF IDEAS ABOUT THE ROLE OF
TEACHER AND PREPARATION FOR IT ADVOCATED BY ELLA FLAGG
YOUNG AND JOHN DEWEY IN TURN-OF-THE-CENTURY CHICAGO**

Connie Goddard, Roosevelt University

For once-lauded but now largely neglected turn-of-the-century Chicago educator Ella Flagg Young, the teacher's work was preparing pupils "to become men and women who know the duties and the rights of an American citizen and are ready to meet them and fulfill them." She opposed the then increasingly prevalent "factory management" style of school administration in which teachers "tend to become mere workers at the treadmill." She argued that that individual teachers isolated in their classrooms "had not the freedom, the power, which people should have who are to train the minds of the children." Young's thoughts are particularly interesting in light not only of Leave No Child Behind priorities, but initiatives undertaken by the Chicago Community Trust, the Civic Committee's *Improving Results* report, plus the content and professional knowledge tests now required for certification in Illinois. All place new focus on quality of the teaching in individual classrooms. This arguably belated recognition of the pivotal role teachers play in what students learn suggests that Young's conception of the job deserves reconsideration. A teacher, principal, and assistant superintendent in the Chicago system for 35 years before she joined John Dewey at the University of Chicago, Young had experience-hewn insights into the teachers' role that were enhanced by the rigorous academic work she undertook then. After Dewey left Chicago, Young acquired further insights into the teachers' role and preparation for it as principal of the Chicago Normal School and superintendent of the Chicago Public Schools from 1909 to 1915. Given today's recognition that the autocratic system Young railed against produced schools that fail the urban students particularly in need of the opportunities an education could bring, it would be instructive to revisit Young's model of school organization and the teacher's role in it. This paper does that, along with reviewing teacher preparation and certification requirements as they developed along with the city's school system.

BENCHMARKING FOR REAL SCHOOL IMPROVEMENT

Glenn W. “Max” McGee and Clayton J. Graham

Problem

One of the latest catch phrases in education is “data driven school improvement.” This term means many things to educational researchers and practitioners, and though they may not always agree on what the term means or what data to use, they realize that without good data they will not have the information they need to identify where improvement is needed.

Though most schools in Illinois spend long hours writing and implementing school improvement plans, few have access to solid, usable data beyond their school boundaries. In fact, even within their boundaries, most educators have difficulty accessing usable state test result data and are forced to rely on the Illinois Standards Achievement Test (ISAT) broad performance level measures rather than precise student scale scores. Such measures are misleading at best; for example on the 2003 ISAT fifth grade reading test, in Astoria District 1 93% of the students met state standards compared with 83% of the students in Wilmette District 39 yet the average scale score for Wilmette students was 171, which was significantly higher than Astoria’s 165.

Frustrated with “data driven school improvement” that did not have good data and school improvement initiatives driven more by opinion than fact, school superintendent, Max McGee, and economist, Clay Graham, resolved to develop a benchmarking system that would enable school districts to access and use data from their own district as well as other districts with similar demographics. By creating a viable benchmarking process that would enable schools to compare their performance to similar ones, the researchers sought to help districts not only identify areas in which their own district could improve but also to identify similar districts that were doing a better job in some areas. Once these areas were identified, programs, the successful practices and services in the similar districts could be explored in depth and potentially replicated.

Methodology

McGee and Graham consolidated the 2003-04 Illinois School Report Card data base, county clerk tax records and the 2000 national census data into a data set that has enabled them to identify similar school districts based on numerous criteria such as family income, parents’ education, median home value, percentage of low income students and a host of other characteristics. In addition the researchers have included the scale scores of every student taking the 2003-04 ISAT in this data set and used these scale scores to develop an index of school performance that is based on actual scores and not on broad performance levels.

From this data set, McGee and Graham selected a sample of sixteen similar school districts—the Benchmark districts—to compare in terms of performance, residential tax burden and expected performance based on a matrix of family income, parent education, and operating costs per pupil. The initial research involved highly affluent districts based on the low percentage of low-income students and high income and housing values. The researchers chose these districts to see if, as the popular press contends, educational achievement is primarily a function of socio-

economic status or if even within this homogeneous group real differences among school districts existed.

Using advanced ANOVA and regression analysis, the researchers identified which school districts and schools differed significantly from one another in overall performance as well as in the performance of subgroups, particularly between boys and girls. They also used these same analytical techniques to identify which school districts' residents paid the highest taxes both in absolute dollars and in terms of student achievement.

Their data analysis also enabled them to identify school districts that were performing above or below expectations based on both individual variables, such as family income, parent education, and cost per pupil, and on a combination of these variables.

Summary of Findings

The benchmarking system illustrated that within a group of similar schools differences in achievement, tax burden and expected performance exist. In other words, their findings show that student achievement on the ISAT is not just a function of how much money a district spends or how wealthy the community is. Even among highly similar schools and districts, real differences exist. Benchmarking, then, helps educational leaders target areas for school improvement by identifying gaps between their performance and the performance of their peer districts. Moreover, as these leaders seek to develop and implement improvement plans, they now have a way of identifying which similar districts have more successful programs and services for a specific grade or within a specific curricular area.

In addition to determining the relative performance of each school district's student achievement within the comparison group of similar districts, McGee and Graham created a means to display complicated statistical data in a manner that was readily understood and usable for school and district improvement planning teams. Specifically, their analysis showed that the difference between actual student performance—for a total entity or a disaggregated subgroup—and the expected performance as predicted by a single or combination of variables can be calculated, illustrated, explained and used by teachers, administrators and parents to guide school improvement planning.

Replicated benchmark studies with middle class districts further illustrate that performance may be predicted but not explained by a single or even combined set of demographic characteristics. In fact, when comparing similar districts, over half the variation is due to factors other than socio-economic variables.

The findings also show that within groups of similar school districts, large differences in residential tax burden exist.

Implications for Illinois Education

Admiral Grace Hopper once said, "One fact is worth a thousand expert opinions." This benchmarking study shows that districts now have the tools to make decisions based on facts and not options. The single most important implication of this study is not the findings for the sixteen districts, but the fact that the process McGee and Graham developed enables districts to use data to drive school improvement initiatives. For the first time they can accurately identify

school districts similar to theirs that are performing above what would be expected given their common demographic characteristics. After identifying those districts within a similar group that are exceeding expectations, an median or lower performing district can establish a dialogue, visit the successful schools and engage in collaborative activities that will enable them to replicate practices, programs and services of the highest performing districts and schools.

The use of scale scores instead of performance levels also brings an unprecedented level of specificity and accuracy to ISAT data analysis. Researchers can now identify significant differences between and among schools as well as within schools from one year to the next or even between one group of students and another. These data give districts the information they need to accurately determine annual improvement, the gaps between groups of students, or how their school or district compares to similar ones.

Finally, this study may have a significant impact on the proposed reorganization of the State Board of Education. Though the Board has done an admirable job of collecting demographic, achievement and financial data, it has not been able to combine the information into a coherent, usable data base and has not provided ready access to its wealth of information. The two researchers working in conjunction one State Board employee were able to create a readily accessible data base that enables districts to answer questions they have about student achievement and to research matters important to them. By incorporating the census data, the researchers now have given local districts an unprecedented amount of information. Whether the Governor succeeds in taking over the State Board of Education or not, McGee and Graham have shown that at least in terms of access to data for school improvement, the agency can become a true service center.

FOLLOWING THE ILLINOIS HIGH SCHOOL CLASS OF 2002

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The goal of this longitudinal study is to improve the state's understanding of students' transitions from high school to college and subsequent persistence. Illinois is in the almost unique situation of having ACT scores and background data on its population of public high school graduates because, since 2001, the ACT is a component of 11th-grade testing for all public high school students. In academic year 2001 (AY 2001) 95 percent of 11th-graders took the ACT test. The Illinois Education Research Council has entered into a Memorandum of Agreement with the Illinois Board of Higher Education to use these data with appropriate privacy safeguards, and to match this data set to the National Student Clearinghouse data to follow students into and through their postsecondary education. Since the data cover the entire population of graduates in 2002 (approximately 126,000 students, 113,663 in the public sector) we will know for the first time the college choices of nearly all graduating seniors. What is especially unique about these data are that they include academic performance measures for all students as well as self-reported background information; and they include enrollments in nearly all institutions of higher education across the country.

The State Context

Illinois provides access to higher education through paths that are not typical among the states (Presley, 2003). It is a large exporter of college freshmen, ranking just 31st in 2000 in the percent of continuing high school graduates enrolling in-state. And for those who enroll in-state, Illinois ranks 13th in the percent enrolling in a public two-year institution, 47th in the percent enrolling in a public four-year institution, and 5th in the percent enrolling in an in-state private institution. These aggregate data do not allow us to examine college-going rates by race/ethnicity and SES or high-school experience, although a recent case study of students in predominantly rural high schools in central Illinois found high-achieving students citing local community colleges rather than more selective four-year institutions as their institutions of choice (Merchant & Medley, 2002). Nor do the national data give us information about drop-out or transfer rates into and out of institutions of higher education, or the overall success of Illinois' high school graduates in completing college. Given Illinois' high dependence on community colleges and out-of-state institutions for access to higher education, it is important to know whether students with similar background and academic characteristics are as likely to persist in higher education independent of whether they begin in a two-year or four-year institution, in-state or out-of-state. This longitudinal study of the high school class of 2002 will help us assess whether the state's high dependence on out-of-state enrollments, a large two-year sector, and the private sector within state, provides *equitable access to success* in higher education.

What Does Research Tell Us About Access To Success In College?

The most recent work in the area of student access and college success is based on a national sample of students who graduated from high school in 1992 (National Education Longitudinal Study of 1988 - NELS 88). Adelman (1999) shows that the familiar relationship between race/ethnicity, SES and enrollment in college persists, but that the pattern of high-school course taking is a major intervening variable. Hu (2003) found that smaller percentages of students in rural schools were enrolled in postsecondary institutions within two years of high school (56%)

than those from urban or suburban schools (64%) (not controlling for student characteristics). He also found that rural enrollees were more likely to be in public institutions, while those from urban schools were enrolled in four-year private colleges. Perna (2000) on the other hand found that high-school location (urban, suburban, rural) is related to enrollment in four-year institutions only among Whites.

Findings For The First Year

The first year's match has been completed, and we will report on the types of institutions of higher education in which the 2002 high school cohort enrolled in Fall 2002/Spring 2003. With these data, correlates of student access to and choice for college enrollment have been identified by race/ethnicity and family income, academic course-work, an index of readiness for enrollment in a four-year college, type of college attended (including private and out-of-state institutions), and region of the state of the high school attended.

Our analysis of this first-year transition for the Illinois cohort of 2002 students found that community colleges in Illinois play an important role in access to postsecondary education for high school graduates from our rural regions. In one rural region, for example, about 70 percent of all students who continue to college go to a local community college. On the other hand, in the region containing Chicago, students are more likely to enroll in a four-year institution. Less-ready Latinos are also least likely to continue into college, while similarly ready Asians are more likely to continue. Parents' income continues to be related to continuation for less-ready students. It remains for further analysis to see how these first-year enrollment choices are related to who stays, who transfers, and who drops/stops out.

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INCLUSION AND ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES: PRACTICES AND PERCEPTIONS OF CHICAGO TEACHERS

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Context and Purpose of the Study

The field of special education has long struggled with the issue of how best to include students with disabilities in general education settings. In the past, emphasis on integration focused on placing students where they would have possibilities for interaction with non-disabled peers. More recently, this emphasis has evolved to providing genuine access to the general education curriculum. In Illinois, one of several states with historically poor relative standing in national rankings of placements in the least restrictive environment, inclusive placement and services have been identified as a top priority in special education. This is largely the result of settlement agreements with the Illinois State Board of Education (ISBE) and the Chicago Public Schools (CPS) in 1998 arising from the Corey H. lawsuit. The lawsuit, filed as a federal class action complaint in the early 1990s, alleged that CPS students with disabilities were not placed in the least restrictive environment. The Settlement Agreement with CPS contains a variety of systematic activities that, over an eight-year time span, are to enable local schools to have a greater capacity to educate students with disabilities in the least restrictive environment. These activities include consultative services, professional development for teachers and improved measurement of student achievement. The Settlement Agreement with ISBE provides for enhanced monitoring of CPS in addition to other elements. These circumstances formed the context of the study. The primary purpose of the study was to identify and describe the practices of CPS teachers in instructing students with disabilities in general education classrooms.

Methodology

This descriptive study involved semi-structured interviews with approximately 60 teachers from over 30, primarily elementary, CPS schools over a four-year time frame, from the 2000-01 to 2003-04 academic years. The teachers were roughly split across three groups. The first group consisted of CPS teachers interviewed as part of the Chicago Annenberg Research Project, which was a wide-ranging study that included an examination of school climate issues, the intellectual quality of assigned classroom work and teacher behaviors. The second group consisted of CPS teachers enrolled in graduate level special education coursework at a local state university. The third group consisted of CPS teachers from schools at various stages in the Education Connection Project (i.e., the locally planned grant-funded staff development project to promote access to the general education curriculum as specified in the Corey H. Settlement Agreement) that had partnership arrangements with a local university.

The interviews, which were tape-recorded and later transcribed, took place at the school site or on-campus. Interviewers were trained to follow a general protocol of questions and encouraged to probe and ask for specific examples. In addition to obtaining demographic information about the teachers (e.g., subject area, grade, years of teaching experience), questions included: What do you see as the barriers to and benefits of inclusion? What types of accommodations do you make for students with disabilities in your classroom? What is the extent of your collaboration with special education/general education teachers in providing services to these students? The transcribed interviews were first analyzed globally by reading

them to identify broad issues and findings. Then the interviews were closely re-read across like questions and responses following procedures for analytically coding interview data. This coding procedure involves open-coding, in which each line of text is read to identify all themes followed by focused-coding in which a line-by-line analysis is done relative to selected themes of special interest.

Summary of Findings

Themes identified during the coding procedure fell into one of three categories: (1) perceptions and attitudes about inclusion and students with disabilities; (2) practices related to the instruction of students with disabilities in the general education classroom, and (3) problems and solutions at the local school level. Concerning perceptions and attitudes, most teachers expressed the belief that inclusion, when properly executed, was of value to students with disabilities because of inter- and/or intra- social-emotional aspects and access to the general education curriculum. However, teachers reported that inclusion often did not work in their schools because of organizational issues, including large class size, teacher scheduling patterns and lack of classroom support. Concerning classroom practices, teachers reported using a limited variety of accommodations. Lessening the amount of work was the most widely reported accommodation. Accommodations such as preparing modified class notes for students or allowing for audio-taped instead of written responses were reported by several teachers. Few teachers reported systematic contact between general and special educators regarding the educational programs of students. Concerning problems and solutions at the local level, teachers discussed issues including students with poor achievement and/or adjustment issues who were not receiving special supportive services and the need to find new approaches for improved special and general education collaboration.

Implications

The analysis of CPS teacher dialog on inclusion and accommodation indicates that (a) organizational structures in the school interfere with the provision of effective services; and (b) the treatment and instruction of students with disabilities in general education classrooms does not reflect the types of accommodations typically needed by students who have difficulty in academics due to their disabilities. Specific suggestions for CPS and Illinois school administrators include:

- Enhanced pre-placement activities including specific instruction to the general education teacher by the special education teacher on individual accommodations for instruction and assessment.
- New approaches to the design of special educators' teaching schedules, including time for collaboration with general educators and for making or supervising the modification of curriculum materials for students with disabilities.
- Elimination of "traditional" titles and roles of "self-contained" and "resource" teachers so that special educators are not hindered by their job categories in providing inclusive services.
- A critical analysis of the job responsibilities of the case manager and the time needed to carry out those responsibilities effectively.

SCHOOL REFORM IN CHICAGO: CONVERTING LARGE HIGH SCHOOLS INTO SMALL ONES

Sue Sporte, Consortium on Chicago School Research and Joe Kahne, Mills College

The Chicago Public School District is supporting the creation of small high schools as a strategy to improve high school performance district-wide. In September 2001 it received a grant from the Bill and Melinda Gates Foundation, matched by additional money from local sources, to convert up to five large high schools into 15-20 autonomous small schools over five years. In April 2003 it received a second grant from the Gates Foundation to open twelve new small high schools over five years (Office of Small Schools, CPS). These efforts are known collectively as the Chicago High School Redesign Initiative (CHSRI).

The conversion process began in the fall of 2002 with the opening of five small schools in three buildings; additional conversions in these buildings are continuing. The process of starting new schools began in the fall of 2003.

The Consortium on Chicago School Research, in partnership with Professor Joe Kahne of Mills College, has undertaken a three year study of CHSRI, providing formative and summative analyses for the Initiative and adding to the broader dialogues on the reform of low-performing urban high schools. As a part of that larger study, this presentation will focus on the five converting small schools that opened in the fall of 2002, exploring the challenges and opportunities inherent in implementation and investigating school “climate” differences between these new schools and other demographically similar schools.

Background

Much of the current research on high schools in America has focused on how they are not preparing students for college, work, or life (American Diploma Project, 2004), how they exacerbate inequalities across racial and economic lines, and how they lead to increased alienation (American Youth Policy Forum, 2001). The problem is especially severe in large urban high schools, which disproportionately serve students of low socioeconomic status and students of color. Such schools often have high drop out rates, low achievement levels, and differentiated learning standards (Fine, 1991).

Much research over the past 15 years has focused on the creation of smaller learning communities or small autonomous high schools as a way to counteract the negative outcomes of the large comprehensive high school. According to Wasley et al. (2000), small schools can create communities where students can be pushed and encouraged by adults who know and care about them; they can reduce both isolation and the achievement gap; and they can facilitate teachers using their experience to help students succeed (p. 2). Various reviews of the literature on student achievement and school size indicate that this strategy does indeed improve student outcomes. In fact, some reviewers claim that the research on small schools has shown that achievement levels in small high schools are better than they are in large high schools on many measures, and they are no worse than large high schools on the rest of the indicators (Raywid, 1996; Cotton, 1996; Cotton, 2001). Others are less glowing, stating that the benefits of small schools depend on the degree to which they promote authentic and interactive curriculum intended for all students (Darling-Hammond, et al., 2002; Lee, 2002). Still others indicate that

increased emphasis on teaching and learning, regardless of school structure, is at the core of school improvement (Hess and Cytrynbaum, 2002).

Since Chicago and many other locations are experimenting with school size reduction as a reform policy, it is important to understand the processes which promote improvement. Visser, Teitelbaum and Emmanuel (1999) say it this way: “School size should be seen as having an indirect effect on student learning—school size acts as a facilitating factor for other desirable practices” (cited in Cotton, 2001, p.6).

Methodology

This presentation reports on the results of a limited qualitative study performed in April and May of 2003 to explore implementation challenges and opportunities. It also provides initial quantitative analysis of survey responses from a system-wide survey administered in May of 2003, investigating desirable school contexts.

As part of the qualitative study, we interviewed each school’s principal/director and met with a focus group of teachers and a focus group of students at each school. We also interviewed the converting school principal in each building, attended parent meetings at two of the schools, and met with program staff at two schools. These interviews were transcribed and coded, and the results were organized into categories.

For the quantitative study we analyzed responses from the Consortium on Chicago School Research’s biannual district-wide survey, including responses from some 29,000 ninth and tenth graders and almost 3,000 high school teachers. We used Hierarchical Linear Modeling to see whether students and teachers in these small schools reported higher levels of measures shown to be present in improving schools than did similar students and teachers in similar schools. For teachers these measures included indicators of school leadership and professional community; for students the measures included indicators of parent and community support and the climate for learning.

Results

The qualitative study found that teachers, students, and parents reported that there was a higher level of personalism in the small schools than they had experienced in other settings, a finding that is often cited in the small schools literature. Teachers reported that they felt a stronger sense of ownership in the school and were an important part of the decision-making process and that they felt energized. Not surprisingly, principals and teachers also found that they had encountered implementation challenges, including lack of adequate time for planning, lack of appropriate space and equipment, unpredictable relationships with the converting school and the other small school in the building, and questions about autonomy and relationships with CPS (Sporte et al., 2003).

Survey results were consonant with these findings. Students in these new small schools had higher scores on personalism, student-teacher trust, and academic engagement (significant at $p < .05$) than similar students in similar schools. Teachers in these small schools had higher scores on collaboration, collective responsibility, reflective dialogue and teacher-teacher trust, indicators of the nature of the professional community. They also reported more influence on

decision-making and greater program coherence than did similar teachers in similar schools (all results significant at $p < .05$).

Implications

While it is too soon to tell whether these new small schools enhance student performance in Chicago, the early results indicate that some important pre-conditions are in place. Additional study is needed to see whether structural changes at the school level can be translated into differences in teaching and learning.

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DEVELOPING A POST-SECONDARY TRACKING SYSTEM

Jenny Nagaoka, the University of Chicago and
Gudelia Lopez, Chicago Public Schools

The Chicago Public Schools (CPS) and the Consortium on Chicago School Research have begun a unique partnership to develop a comprehensive system for tracking CPS students from high school through their post-secondary path and to use the data obtained by the system to produce and apply high-quality research around improving high school students' post-secondary outcomes. The data collected will provide a comprehensive picture of students' high school careers, college choice process, initial enrollment, college performance, and graduation. It will result in an indicator system for assessing the post-secondary outcomes of CPS students, a new set of system and school level reports, and a series of research reports to assist high schools and the school system improve K-16 alignment and the preparation and post-secondary outcomes of students.

Our presentation will present findings from prior analysis done by a CPS planning group that led to the development of the tracking system. We will then outline the components of the post-secondary tracking system and how they work together to provide a more complete understanding of the relationship between preparation and the post-secondary outcomes of students.

SELF- STUDY ON THE ROAD TO REFORM IN TEACHER EDUCATION: OBSTRUCTIONS, DETOURS AND THOROUGHFARES

Dr. Kim Pittman, Associate Professor, Aurora University

The purpose of this session is to think about self-study in different ways as educators become involved in reform initiatives. Self-study not only has the capacity to improve personal practice but also to contribute to the reform of teacher education practices in general. To accomplish this, serious self-study must use research methods which are rigorous and thorough. In this self-study of teacher education practices, the inservice teachers discovered that it was essential to be familiar with students' beliefs as well as their own. They found that teachers often held beliefs about teaching and learning that constrained their access to rich and powerful ways of learning. They consequently needed to revise their practice to help challenge each other's beliefs. However, careful study of the new practices also revealed some obstacles. I will propose several conditions that need to exist if teacher self-study of education practices is to be a fruitful activity for those engaged in the demanding task of challenging their beliefs.

Self-study research needs to balance the personal story with the broader context of education, to focus on 'the space between self and the practice engaged in'. A fundamental principle underlying self-study was the need for teachers to examine their practice from other viewpoints than the one they brought to the classroom. While self-study of teacher education practices involves the examination of a person's practice for purposes of improving that practice, this purpose is not the only reason for self-study. The other purpose is to develop deeper understandings about teacher education in general; to produce and advance the knowledge about teacher education. I suggest that a deep understanding of the context and the beliefs of students who are being taught is essential if self-study of teacher education practices is to contribute to reform in teacher education. The teacher's self-study research is placed at 'the intersection of biography and history.'

This research investigated the beliefs and attitudes of inservice teachers from a suburban school district of Illinois with respect to their learning and teaching. Fifty graduate students seeking a Masters of Educational Leadership degree from a private university in Illinois participated in this study. The students completed a questionnaire, self-observations, peer observations, administrator observations, created metaphors and examined educational learning theory. The culminating activity consisted of the teachers writing a biographical case study that contained the following elements: *Setting* -where and when does the case take place? (school demographics, early in career experiences, etc.), *Characters*- who is the major character in the case? (describe yourself in terms of personal educational ideology, past influential experiences, observations from the self-assessment survey), *Opening*- create a metaphor that describes your role as a teacher and your interaction with the students, and analyze your metaphor according to educational psychology, *Obstacles or Problems*- using your series of observations, discuss areas of alignment and misalignment according to your observations (you vs. students, you vs peer), *Tension*- what opposing forces are at work? (ideas or characters, what is your "espoused theory" and your "theory in practice"?, *Surprises and Twists*- what surprises, ironies, twists and unexpected turns were built into your analysis? and *Resolution*- how are obstacles overcome? How does the story end? What might the sequel be?

Data collected included; questions that teachers had developed and posed about issues in education in which they were interested, responses by other students to those questions, an open-ended questionnaire in which emerging themes were further developed and in-depth interviews with 25 of the inservice teachers.

The findings, were that the teachers' beliefs about teaching and learning were major inhibitors of their own learning and of their ability or desire to facilitate the learning of others. Teachers often believed that you had to have a "certain kind of brain" to be able to do a particular subject. These views led many of them to learn the content by rote as they did not have the confidence to engage in a cognitive interaction with the content. They also had clear and strongly held ideas about teaching: a good teacher explained clearly and gave opportunities for a great deal of practice; similar beliefs to those they held before they started the study. One of the consequences of holding such beliefs was that a strong emphasis on teaching as telling did not allow for much flexibility in methods of teaching or for idiosyncratic ways of solving problems.

The analysis of the teacher's responses to peer beliefs about teaching highlighted a contradiction in their thinking. This contradiction was that you (shared) ways of teaching seemed to obstruct ideas of access for all, and of learning as a social and situated process, dependent on past experiences and contexts. Further study and investigation of the theories of learning espoused by constructivists and sociocultural theorists directly challenged the teacher's previously held views and led them to develop new personal theories of learning and teaching which acknowledged that learning was not transmissive but an active process by the learner. They came to believe that learning was very much a sociocultural activity in which the context and the interaction of others were major influences in any one person's learning.

In general, the self-study process gave the teachers a number of insights that are of value in reform efforts. First, it appears extremely important for teachers to be aware of the beliefs and views of their students about learning and the nature of learning in particular subject areas. Before this self-study process, the teacher's beliefs and practices went unchallenged even though they were reflecting on their teaching and asking students to evaluate their practice. Second, teacher evaluation on its own is insufficient in directing reforms, as most people are initially resistant to change. Encouraging students to choose how they are taught, without giving them the opportunities to investigate other approaches or reflect on the benefits and disadvantages of a variety of approaches means that known models will be privileged over the unknown. And third, emphasizing approaches to learning which incorporate attributes of collaboration. Support and enthusiasm are not sufficient for good teaching: the importance of content matter knowledge as delineated by Shulman's (1986) framework needs to be emphasized.

Despite our efforts to reshape teaching and classrooms, the potential for teacher change- teachers revising their conceptions of and practices surrounding learning- is not located in programs or classes that do something to teachers or give teachers new "methods" or information. Instead, change is made possible and becomes sustainable when teachers gain critical perspective on how their identities have been constructed by/in the culture and how cultural narratives of teaching have shaped their personal and professional subjectivities. Recognizing these contradictions makes it possible for teachers to resist and revise the hegemonic narratives of teaching and learning that position them as teachers and as individuals. In turn, they may more

fully understand the social and political implications of literacy for students and help students to become self-reflective and critically literate citizens.

As a result of this explorative self-study, teacher education and reeducation that allows teachers to locate, name, and critique the position of teacher as constructed by the culture and by education more specifically, and to theorize that cultural construction of teacher in relation to their identity. Teacher education that acknowledges that teacher change occurs when personal and professional identities are recognized as being inextricably linked. Self-studies of self and of learning are not a panacea and, as the case studies suggest, are not effective in isolation. Teacher development requires that the self-studies be used strategically alongside sustained ongoing reflection. A community is required because community can sustain commitment, can nurture individual and community agency, and can thus result in action.

We must understand clearly what we are asking teachers to do in expanding their understandings of teaching and learning. We are asking them to engage in a radical relearning process that has powerful personal and political repercussions and risks. Rather than just adding on ideas, they must reconceive and reconstruct their knowledge- and perhaps their identities- and in doing so struggle against the fundamental beliefs and habits of mind of their experience, of our society, and of local communities into which they live.

There are enormous possibilities in our teachers in what we continue to believe can be the transformative learning power in self-study- stories told and reflected on within supportive communities.

HOW PREPARED ARE CPS STUDENTS FOR THE PSAE SCIENCE TEST?

Steve Ponisciak, Ph.D., Consortium on Chicago School Research

Issues of tracking, ability grouping, and course placement according to previous performance have been intertwined with student outcomes for many years. Stevenson, Schiller and Schneider (1994) examined the relationship between prior and current academic opportunities, and found that students' eighth-grade mathematics courses were a good predictor of their high school mathematics course-taking. Gamoran and Mare (1989) studied tracking and student outcomes, and found that most of the differences between tracks in math achievement were explained by students' prior achievement. In this study, we examine the relationship between the courses that students take in Chicago public high schools, their previous achievement, and their achievement in high school.

The Prairie State Achievement Examination (PSAE) is the lone state-mandated standardized test taken by Illinois high school students, administered each April. The PSAE assesses Illinois science learning standards by testing the life, physical and Earth and space sciences. Data were gathered from student-level test files and administrative records, including student grade files, supplied by the Chicago Public Schools (CPS). A total of 16,577 PSAE records from 2002 were used, although the analysis is focused on the 15,101 scores that could be accurately matched to grade files.

Of the five subjects tested on the PSAE, CPS students have scored lowest in science. In 2002, only 22.4 percent of students in CPS met or exceeded standards on this test. Because there are many low scores, we question whether all CPS students are prepared for this test.

In order to graduate from a CPS high school, a student must earn passing grades in two semesters in each of three science focal areas: life science (covering biology); earth science (Earth/space science and/or environmental science); and physical science (chemistry and/or physics). The three focal areas are included in Illinois' science learning standards, which are covered on the PSAE. However, CPS makes no requirement about when these courses must be taken. Some schools have received written waivers from the requirements, and the graduation policy is not strictly enforced. The Office of Math and Science at CPS is revising the policy to eliminate some of the inconsistencies. Even with a clearer policy, students might still be able to take science courses in many orders, and might not pass all of their courses by the end of 11th grade.

The expectations of the test writers cause us some concern regarding students' preparation for the PSAE science test. As written in the 2002 PSAE Technical Manual, "The content of the [ACT] Science Reasoning Test is drawn from biology, chemistry, physics, and the Earth/space sciences, all of which are represented in the test. Students are assumed to have a minimum of two years of introductory science... typically one year of biology and one year of physical science and/or Earth science. Thus, it is expected that students have acquired the introductory content of biology, physical science, and Earth science..." That is, ACT expects students to have knowledge of three subjects even though they are only expected to have taken classes in two of the three subjects.

Variability exists across the system and across schools, in the courses that students passed before taking the PSAE in 2002, and in PSAE scores. This variation is another reason for our concern about students' preparation for the test. CPS students tend to take biology in grade 9, Earth science in grade 9 or 10, environmental science in grade 9 or 10, chemistry in grade 10 or 11, and physics in grade 11 or 12. The 15,101 PSAE takers in 2002 for whom we had course-taking information had taken (but may not have passed) about six semesters of high school science courses by the end of spring 2002 (the PSAE is given in April, midway through the semester), so it seems that many of them might be prepared. However, only 8,233 of these students (54.5 percent) completed and passed the required courses, or biology, chemistry and physics (a potentially more demanding sequence). In most schools, more than 75 percent of the students scored below the "meets standards" cutoff (a score of 158 or better on a scale of 120 to 200).

Additional factors lead us to question whether some courses cover the material that will be tested. An examination of students' PSAE science scores by school and course-passing pattern showed that students who had passed at least two semesters each of biology, chemistry and physics had the highest scores overall, with an average score of 156.9 (with standard deviation 14.8), slightly below the "meets standards" minimum score of 158. However, there are many students for whom good performance in these classes did not yield good PSAE results. In general, students who completed the courses required for graduation had lower scores, with an average of 144.8 (with standard deviation 13.1), than students who had passed biology, chemistry and physics. Many students who did well in the required courses still experienced difficulty on the PSAE.

A student's Illinois Standards Achievement Test (ISAT) math and reading scores in 8th grade are closely related to the student's PSAE science score. Over 11,000 students took the PSAE Science test in 2002 and the 8th grade ISAT math and reading tests in 1999; for these students, their ISAT math and PSAE science scores had a correlation of 0.76, and their ISAT reading and PSAE science scores had a correlation of 0.72. When we combine the two ISAT scores, we find a multiple correlation of 0.81; that is, 66 percent of the variation in science scores can be explained by ISAT math and reading scores. We will use HLM to create hierarchical models for this data.

A statistical model for PSAE science scores that controls for a student's school, courses passed, grades, bilingual and special education status explains 17 percent of the variability between individuals and 23 percent of the variability between schools from an unconditional model. A student who passed at least two semesters of biology, chemistry and physics, with no grade lower than "A" in each, would typically have a PSAE score about 14.6 points higher than a student who had not passed at least two semesters of any science course, controlling for the other variables in the model. When we add controls for the student's 1999 eighth-grade ISAT reading and math scores to the previous model, we explain 85 percent of the between-school variability, and 48 percent of the between-individual variability from the unconditional model. A student who passed at least two semesters of biology, chemistry and physics, with no grade lower than "A," typically had a PSAE score 6.9 points higher than expected, controlling for the other variables.

In conclusion, we found that there is a significantly positive effect of science course-taking patterns on students' PSAE performance, controlling for previous achievement and high school effects. A relationship also exists between a student's science grades and the student's adjusted PSAE performance.

In addition, there is great variability in students' course-taking across schools. If we are concerned about CPS students' PSAE performance, we need to make sure students get the support they need to take three years of science in their first three years of high school and do well in these courses.

