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STANDARDS-ALIGNED MATH CURRICULUM, STUDENT DEMOGRAPHICS,
AND SCHOOL IMPROVEMENT: AN INVESTIGATION OF ILLINOIS'
LOWEST-PERFORMING K-8 SCHOOLS

CHRISTINE PAXSON

101 Pages

The purpose of this study was to provide a greater understanding of the broader characteristics of the lowest performing elementary and middle schools in Illinois, as little analysis of this data had been conducted. Furthermore, little to no research has explored the vertical and horizontal alignment of math curricula and its correlation to achievement scores. The results of the study suggest that the impact of Covid-19 has taken a toll on our K-12 students and teachers, as well as leaders. There is a higher percentage of principal turnover in the last 6 years, in schools summatively designated comprehensive, that have students of color, low-income students, and English Learners. Another key finding from this research shows that effective strategies are needed to support school improvement in schools with a high percentage of students of color and low income. To positively impact school improvement practices in the lowest performing schools, having ongoing conversations about best practices in school improvement in our schools, will help develop the foundation for building the capacity of school leaders to implement and sustain effective school improvement practices.

KEYWORDS: Lowest performing schools, Math curriculum, School improvement,
Student demographics

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CHRISTINE PAXSON

A Dissertation Submitted in Partial
Fulfillment of the Requirements
for the Degree of

DOCTOR OF EDUCATION

Department of Educational Administration and Foundations

ILLINOIS STATE UNIVERSITY

2022

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I grew up in a household that believed in the power of learning and the importance of education. My grandma was a teacher in a one-room schoolhouse in Nebraska, and my dad was a high school business teacher. In our family, the teaching profession was valued and understood to be more than a job or a career. It was instead a mission or calling because teaching is not only what we do, but who we are. I am forever grateful that my parents instilled compassion, patience, and understanding so that I could strive to be the best educator I could be.

I have been blessed in my professional life to be surrounded by amazing educators for over 26 years, spanning four school districts. They have influenced my thinking and desire to continue to advocate for public education. I owe a thank you to Dana Kinley. She encouraged me along my journey to completing this degree and is not only a friend but an outstanding educator and mentor.

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CHAPTER I: STANDARD ALIGNED CURRICULUM: A CONNECTION TO SCHOOL IMPROVEMENT

Imagine a school that has continuously been designated as a lowest-performing school where teachers come and go and along with them, so do the administrators. It is what some might define as a revolving door school. Also, imagine a rural school that has the longevity of the teachers and long-standing administration. Both have something in common, and that is they both have been designated as being in school improvement status as a lowest-performing school, also known as a comprehensive school. What has caused these schools to underperform? Most importantly, how can these schools be helped to improve?

Over the last 5 years, much of the research on school improvement has focused on leadership, culturally-responsive education, and research-based changes made by districts (Alsubaie, 2015; Anyon, 1980; Banks & Mcgee Banks, 2016; Kurz et al., 2010; Pak et al., 2020; Parrett & Budge, 2020). While all these studies bring forth issues that schools need to address with findings that could impact school improvement, there is a lack of research on the characteristics of lowest-performing schools in Illinois and a lack of understanding regarding curriculum alignment and its connections to school performance. As a result, the purpose of my dissertation is to provide a greater understanding of this topic with a specific focus on math achievement. Within this chapter, I will first discuss how I personally arrived at this research topic and how it connects to educational practice. I will then discuss my research questions and proposed methodology.

Relationship of Study to Personal Experience and Knowledge

I began my educational career in a rural consolidated school district where I taught sixth grade, fifth grade, and kindergarten over 3 years. I then moved to a community of 15,000 where I taught Title I math for 2 years and then first grade for 6 years. It was during this time that I pursued a master's degree in reading with Reading Specialist endorsement. I began to grow as a teacher leader through my work in developing grade level exit criteria, school improvement planning, and as the lead of our newly formed Response to Intervention (RTI) team. I became involved in this work because I was passionate about assessments, their results, and how it told a story about the students in my classroom and in the school.

Through this experience I then accepted a new teaching position as a third-grade teacher in a school district of 640 students. It was during this teaching position that I completed a master's degree in reading and became the district's reading specialist and RTI Coordinator. I developed RTI material for our staff to use in their classrooms and provided professional development to surrounding school districts.

This passion of developing the capacity of others and my desire to grow professionally led me to leave the classroom after 15 years and move to a Midwest college town of approximately 160,000. I became the curriculum coordinator in a PK-8 building of 380 students where I worked with teachers on aligning their curriculum to the newly introduced common core state standards, facilitated vertical and horizontal articulation conversations, led MTSS data discussions, and provided professional development on assessments and standards-based grading.

During my second year in this school district, I started my master's degree in educational administration and began applying these skills immediately to develop the curriculum within our PK-8 school and capacity of our staff. After completing my Educational Administration degree, I began my doctoral journey in Educational Administration. It was during this time that I became the district P-12 curriculum coordinator in a school district of 1,000 students. In this position I became proficient in unpacking student achievement and looking for ways to build staff understanding of student progress and their teaching practices. In this endeavor, I stayed centered in a belief system that our school district was a community of learners with core values that drive our decisions and communicate a more collaborative and communicative community across both schools.

After 10 years as a curriculum coordinator, I became the Director of ESSA/IL-EMPOWER for the Illinois State Board of Education (ISBE). IL-EMPOWER is the current statewide system of support in Illinois that was created after the adoption of Every School Succeeds Act (ESSA) in 2015. IL-EMPOWER consists of differentiated supports provided by Illinois State Board of Education (ISBE) to Illinois schools that are identified for improvement. IL-EMPOWER provides services and resources, that are customizable to local context, to schools that are designated as either lowest-performing or under-performing and need either comprehensive or targeted improvement.

I lead six IL-EMPOWER Coordinators who work directly with school and district leaders in schools designated as targeted or comprehensive. Their work is focused on developing effective continuous improvement practices, also known as school improvement planning. I quickly discovered in this new role that being aware,

responsive, and listening to my team meant that all members of my team needed to feel that who they are, all facets of their identities, are welcome and safe, and I recognized quickly that this is something that will require constant work (Lehmann, 2016). The work that our IL-EMPOWER team does in the state of Illinois is crucial to supporting school improvement in the lowest performing 5% of our schools.

One of the main sources of support includes IL-EMPOWER Coordinators who are ISBE personnel with expertise in educational problem-solving and school improvement (ISBE, 2018). Our IL-EMPOWER team works directly with school leaders to provide guidance and support during the planning and implementation of the school improvement plan which directly impacts students. The IL-EMPOWER Coordinators support the school leadership team, consisting of school leaders and stakeholders, and approved learning partners, in assessing the school's performance and thoughtfully determining which areas of the school's functioning need improvement.

The goal of IL-EMPOWER is for the State's lowest performing schools to move out of comprehensive status and demonstrate sustained progress with commendable or exemplary summative designations in subsequent years. To this end, the Statewide System of Support (IL-EMPOWER) must provide districts with responsive support of sufficient intensity, duration, and scaffolding, over the course of the 4-year grant program, to build schools' capacities to administer effective continuous improvement processes. Within ISBE's accountability system, there are four summative designations that differentiates between the performance of students in a school and student demographic groups (ISBE, 2019a). In Table 1, the summative designations and indicators have been identified.

Table 1

ISBE Summative Designations

Exemplary	Commendable	Targeted/ Underperforming	Comprehensive/ Lowest performing
<ul style="list-style-type: none"> • Graduation rate of greater than 67% • Performance in the top 10% of schools statewide • No underperforming subgroup at or below the level of the “all students” group in the lowest performing 5% of schools statewide 	<ul style="list-style-type: none"> • Graduation rate above 67% • Performance is not in the top 10% of schools statewide • No underperforming subgroup at or below the level of the “all students” group in the lowest performing 5% of schools statewide 	<ul style="list-style-type: none"> • One or more subgroup(s) performing at or below the level of the “all students” group in the lowest performing 5% of schools statewide • Student Groups: <ul style="list-style-type: none"> ○ White ○ Black ○ Hispanic ○ Two or More Races ○ Asian ○ Hawaiian/Pacific Islander ○ Native American ○ English Learners (EL): Students currently classified as English Learners, who have not yet reached proficiency ○ Former English Learners: Students who met the state classification criteria on ACCESS through high school graduation ○ Children with Disabilities (CWD): Students with IEPs and 504s ○ Low Income 	<ul style="list-style-type: none"> • Graduation rate of less than 67% • Lowest performing 5% of schools statewide

Note. ISBE, 2019a.

Since becoming the Director of ESSA/IL-EMPOWER, I have worked towards developing a clear pathway for schools to follow on the continuous improvement process. This includes the development of supplemental resources that allows leaders to leverage conversations with their teachers about school improvement, curriculum, assessment

data, and evidence-based practices. During this journey of developing resources and learning about the comprehensive and targeted schools in our state, I have discovered some potential underlying reasons why schools may not be improving in their school improvement status. One of these reasons includes the lack of an established Tier 1 core curriculum aligned to standards. This leads to my journey with school improvement and my understanding of standard aligned curriculum in our schools.

Relationship of Study to Educational Practice

In 2004, the policy change in the Individuals with Disabilities Act (IDEA) regarding response to intervention (RTI) elevated the conversation among educators to recognize the impact of research-based interventions and an inadequate curriculum (Winfrey & Chapel, 2020). Researchers have categorized curriculum into three distinct categories depending on its proximity to the classroom (Kurz et al., 2010). These categories include intended curriculum, which is academic standards; enacted curriculum, which refers to how teachers connect the content to real-life; and finally attained curriculum, which is understanding how students are learning during a lesson (Kurz et al., 2010; Pak et al., 2020).

Response to intervention is a proactive multi-tiered approach to identifying students with academic needs early. It employs a three-tier approach that allows schools to match instructional resources to intensify the needs of students and monitor student growth. For example, after a local benchmark assessment also known as universal screening has been administered in a school, student data would be reviewed to determine the support needed for students, grade levels, and content areas. This approach allows schools to figure out what the students know and are able to do; align their curriculum

and instruction to teach their students; and monitor student progress (“RTI Action Network,” 2021).

Prior to the RTI service delivery model conception in 1994, it began first as systems change effort to develop a flexible delivery system for all students (Peterson et al., 2007). Since the conception of the flex delivery model and response to intervention, an integrated, comprehensive framework that focuses on core instruction, differentiated learning, individualized student learning, and the alignment of systems necessary for all students’ academic, behavioral, and social success has taken its place. This framework, Multi-Tiered System of Support (MTSS), includes universal screening of all students, multi-tiers of instruction and support services, and an integrated data collection and assessment system to inform decisions at each tier of instruction (Hannigan & Hannigan, 2020).

Like RTI, the three-tier approach to instruction includes Tier 1, which is when the standard aligned core curriculum is taught to all students in the general education classroom. Tier 2 is provided to a small group of students, which impacts roughly 10-15% of students, whereas Tier 3 consists of one-on-one specific instruction for 1-5% of students (Foght, 2021). An example of what MTSS looks like in practice includes teachers facilitating high-quality instructional materials to students in Tier 2 and Tier 3; however, it does require a curricular infrastructure to support teachers’ implementation of interventions with fidelity. Fidelity includes consistency, accuracy, and integrity of the interventions being implemented with students all of which are key tenants in ensuring the effectiveness of a multi-tiered system of support (National Center on Intensive Intervention, n.d.).

Based on my 26 years as an educator, I have witnessed many school districts develop a MTSS model for providing interventions to students in Tier 2 and 3 but overlook the impact of Tier 1 instruction, *that being the core curriculum*. I believe it is important for schools to rethink their approach to school improvement beyond the traditional practice of applying an intervention to a group of students when core curriculum alignment creates coherence in the instructional program for all students (Parrett & Budge, 2020). In my professional experience, having a core curriculum that is aligned to standards, enforces curriculum implementation through differentiated professional development and coaching, develops curricular conversations within grade levels and content areas, and cultivates an adaptive curriculum culture. This shift from technical leadership strategies to adaptive leadership strategies, helps cultivate an adaptive curriculum culture (Pak et al., 2020).

Relationship of Study to Current Research

The research on math curriculum alignment and student achievement are mixed. While there are studies suggesting the math curriculum aligned to state standards will result in increased math achievement, there are studies suggesting that is not the case too (McEwen, 2008; Nargi, 2018; Thomas, 2008). The findings are mixed with need to further investigate the potential correlation. To date, little research has been conducted that examines established math curriculum implementation in the lowest performing schools. Furthermore, little to no research has explored the vertical and horizontal alignment of math curriculum and its correlation to achievement scores. This study focused on the lowest 5% of the K-8 schools in the state's math curriculum and its correlation to math aggregated and disaggregated achievement scores.

Research Statement

The purpose of this study was two-fold. First, I planned to provide greater understanding regarding the broader characteristics of the lowest performing elementary and middle schools in the state of Illinois as little analysis of this data has been conducted. Secondly, I aimed to analyze survey data regarding math curriculum and professional development to better understand the state of curriculum selection, alignment, and teacher professional development within these schools.

Once a school is identified as needing improvement, schools and districts leaders must figure what to do to better serve all students. This begins first with a systematic process for understanding the underlying school causes of underperformance. According to the Illinois State Board of Education (ISBE), this then leads to planning for school improvement; selecting evidence-based practices and interventions; implementing and monitoring effectiveness of the plan; and examining, reflecting and adjusting the course of the school improvement plan (ISBE, 2021b). This process needs to be clear and well supported so that school systems can act proactively to provide the necessary supports to their teachers in this systematic change surrounding school improvement. My research provides greater understanding that can lead to research supported approaches to increasing student achievement in lowest-performing schools.

Schools in Study

There are 118 K-8 schools in Illinois that have been designated comprehensive in this study outside of Chicago Public Schools. We currently do not provide IL-EMPOWER Coordinator support to Chicago Public Schools, which is why these schools were not a part of the study. These schools represent the K-8 schools with the lowest

student achievement. High school designated comprehensive were not a part of the study because high school math is by courses, rather than grade levels. This study focused on math curriculum and achievement, rather than English language arts, because many lowest achieving schools struggle the most with mathematics, and it is a content area that lacks intervention programs that are more readily available in English language arts.

Research Questions

This study sought to answer two key questions:

1. Out of the 118 K-8 schools in Illinois with the comprehensive designation, what patterns and variation exist related to the following variables?
 - a. Enrollment
 - b. Racial/ethnic diversity
 - c. Low-income students
 - d. Students with IEPs
 - e. English Learners
 - f. Homeless
 - g. Gifted students
 - h. Student attendance
 - i. Student mobility
 - j. Chronic absenteeism
 - k. Chronically truant students
 - l. Teacher retention
 - m. Student-Teacher Ratios
 - n. Principal Turnover

2. What is the math curriculum context of the K-8 schools in Illinois with the comprehensive designation related to the following variables?
 - a. Tier 1 math curriculum aligned to learning standards
 - b. Vertical articulation conversations about curriculum
 - c. Horizontal articulation conversations about curriculum
 - d. Professional learning opportunities for teachers on math curriculum

Kind of Study

Quantitative analysis occurred of teacher, administrator, and student descriptive data collected via the Illinois State Report Card. This data provided a greater

understanding of the broader context and patterns of the lowest performing schools in Illinois. Survey data regarding math curriculum, collected through ISBE (i.e., ESSA/IL-EMPOWER), was utilized to understand the math curriculum context of the schools (Creswell & Creswell, 2018).

Terminology

The terminology for this study can be found in Appendix B where it provides definitions for the purpose of understanding and creating uniformity of terms used throughout this research study (ISBE, 2021a). Those lacking citations were created by the author.

Summary

As stated above, the purpose of this study was to provide greater understanding regarding the broader characteristics of the lowest performing elementary and middle schools in the state of Illinois as little analysis of this data has been conducted. Secondly, I aimed to analyze survey data regarding math curriculum and professional development to better understand the state of curriculum selection, alignment, and teacher professional development within these schools. To date, little research has been conducted that examines established math curriculum implementation in lowest performing schools. Furthermore, little to no research has explored the type of curriculum being used and its correlation to achievement scores. In this next chapter, we will look at the literature on curriculum, the statewide system of support, and theories of curriculum.

CHAPTER II: LITERATURE REVIEW

To set the framework for this literature review, I have organized the chapter to first include broadly historicizing curriculum and school improvement, followed by a discussion of curriculum and student achievement. I then provide an overview of key theories of curriculum and end with an examination of the research on math curriculum and student achievement.

Historicizing Curriculum

Curriculum in schools has evolved over time in response to the fundamental notion of curriculum. Twentieth-century skills meant accurate copying and performing mathematical operations; 21st-century skills in mathematics include persevering in problem solving, putting together extended chains of reasoning, and modeling real-world situations (Lee, 2020). In English Language Arts (ELA), they include reading closely and making logical inferences from text, supporting conclusions with specific textual evidence, and assessing how point of view or purpose shapes the content and style of a text. The goal in 1916 and 100 plus years later is school improvement, so one may wonder how, if there has been much change in the focus of curriculum in our schools.

If these objective standards become the end to be attained by pupil and teacher, and if they become an incentive to both to put forth their best efforts or to economize time, the results cannot be other than a more homogeneous group of pupils in each class and grade. (Ballou, 1916). In this next section, the historical context of curriculum has been organized in chronological order.

1920s and 1930s. In the 1920s and 1930s, AERA presidents represented multiple disciplines and issued a complaint about a process that still exists today: who gets to

specify the curriculum and how? (Rugg, 1921). The author Gray (1933) wrote about changes in teaching English Language Arts. Keeping the Common Core standards in mind, Gray described earlier reforms that “improve the methods by which young children were taught to read thoughtfully, fluently, accurately, and independently”; modified the content being read “to harmonize with the literary ideal”; and expanded the scope of readings (Gray, 1933, p. 163). But he had a clear agenda: “The fact is universally recognized, for example, that education must be more closely integrated with social life in the future than in the past.” (Gray, 1933, p. 162). This runs parallel to the Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects (Lee, 2020).

1940s, 1950s, 1960s, and 1970s. After the attack on Pearl Harbor in 1941, efforts in our nation were focused on winning the war, and schools were expected to do their part. This included preparing students to enter military training and to work in factories for war industries. Unfortunately, the result of this focus led to the shelving of curriculum development in other areas (Tyler, 1981). In 1942, Arthur Gates introduced a trend that we still use today, diagnosis and remediation in the reading curriculum. It was in this diagnosis and remediation of reading that studied the relation between reading readiness, word recognition, and paragraph reading which was in turn called the Gates Advanced Primary Reading Test (Gates, 1942). The first warning that our educational system might not be working was during the launching of Sputnik by the Russians in 1957 (Krauss, 2017). Many policymakers saw this as a threat to the national defense and looked directly at the public school system as the cause. The lack of advancement in the areas of math and science were identified as the reason that the Russians were ahead in the space race.

This was the first time in the history of American public education that the federal government provided funds for an institution that was under the direction and control of the states and created excitement in the improvement in education (Fiske, 1982) In 1958, David Russel conducted research on the impact of reading, and learning from the student's point of view. According to research, this was the first time that allowing a learner to respond to instruction as an individual was being recognized (Russel, 1958). As we moved into the 1960s, we began to see a strong emphasis on curriculum projects that then led to 1970s and the "spiral curriculum" approach which is when a concept is repeated at multiple levels (Fairbanks, 2020). Multicultural education emerged during the civil rights movement of the 1960s and 1970s. It was during this time that elements of intercultural and intergroup curriculum was incorporated in desegregation efforts (Johnson & Pak, 2019).

1980s, 1990s, 2000s. The 1980s brought forth A Nation at Risk which was a commission's report on education. A Nation at Risk brought education to the forefront of conversations with a focus on the reform of teacher education and subject area curriculum (Ravitch, 1990). This focus on curriculum also brought about a national assessment of educational progress related to school improvement. The 1990s focused on raising academic standards and holding schools accountable (National Center for Education Statistics, 2003). Measuring student progress to standards using statewide testing and releasing an annual state report card became a measuring stick for determining a school's progress. The move to the 2000s brought about an effort to identify what Marzano (2003) has identified as a Guaranteed and Viable Curriculum (GVC; Marzano, 2003). Guaranteed and viable curriculum gave teachers the flexibility in

how to teach and meet the needs of their students. GVC contained a three-part test to determine the significance of a standard which included endurance of the skills and knowledge for future use, the leverage of skills across discipline, and the readiness for the next level of learning (DuFour & Marzano, 2011). The 2000s also ushered in No Child Left Behind (NCLB), which was the federal government's first direct involvement in what should be taught and how well students were learning. This plan required each state to submit a plan that identified standards for learning in reading and mathematics and assessment that measured student progress (Ravitch, 2018).

The Common Core State Standards were introduced to education in 2010. The Common Core State Standards are academic standards that students are expected to learn in grades kindergarten through 12th grade in English Language Arts (ELA) and mathematics (Lee, 2020). Since their adoption, the state of Illinois has adopted science, social studies, the National Core Art Standards, and the National Physical Education standards also known as SHAPE. With so many standard sets being adopted since 2010, it is no surprise that many schools have not kept up with ensuring that their curriculum is aligned to the standards and that supplementing the curriculum to keep up with the alignment has occurred.

A host of literature suggests that the ultimate purpose of curriculum and school improvement is to increase the effectiveness of the instruction which the child achieves. The archived papers by American Educational Research Association's (AERA) first two presidents, Frank Ballou and Walter Monroe, established the curricular, methodological, and epistemological parameters that run through the history of American education research (Ballou, 1916). With no mention of high stakes assessments or consequences,

one may see the aim being one that is aligned to where our focus in education is at this time. However, this aim did not stay on course from 1916 to now.

Historical Context of School Improvement

School Improvement has been a part of public schools for over five decades. With the passage of the Elementary and Secondary Education Act (ESEA) of 1965, No Child Left Behind (NCLB) of 2001, and ESSA (Every Student Succeeds Act), much change has occurred to improve the quality of education in low performing schools (Kober, 2020).

The Elementary and Secondary Education Act (ESEA) was a legislative step towards trying to improve schools and the quality of education. NCLB was the reauthorization of ESEA, and gave states a larger role in school improvement (Schueler et al., 2021). Under NCLB, State Education Agencies (SEAs) established grade level standards and annual testing ~~and~~ that reflected those standards (Jaiani & Whitford, 2011). While under NCLB, the goal was for schools to achieve 100% proficiency in math and reading (Meyers & VanGronigen, 2018).

The Every School Succeeds Act (ESSA) of 2015 sought to address the achievement issues that NCLB failed to meet by providing State Education Agencies (SEAs) the flexibility to interpret school success (Reed, 2020). ESSA is the federal education policy update to the Elementary and Secondary Education Act (ESEA) of 1965. The goal of ESSA is to improve achievement of student groups that historically performed at lower rates as determined by accountability indicators. To support student groups more effectively and effectuate change with school improvement, ESSA is a balance of both accountability and effective supports. It is under ESSA, that states are

able to set achievement standards, indicators for accountability, and schools and districts have autonomy in selecting school improvement strategies and curriculum (Williamson, 2019).

Curriculum and School Improvement

According to a study by McCarthy (2005), a successful curriculum requires departments to work together for the sharing of ideas and delivery of the curriculum (McCarthy & McCarthy, 2005). This supports one of the identified research sub questions regarding whether lowest-performing schools are conducting vertical and horizontal articulation conversations. In vertical and horizontal curriculum conversations, it is essential for teachers to work towards objectives in the realization of goals for their curriculum (Darling-Hammond et al., 2008).

Another obstacle in curriculum integrity comes in the form of “hidden curriculum” within our schools. Hidden curriculum refers to the unspoken or implicit values, behaviors, and procedures that exist in the educational setting and marginalize low-income and/or students of color (Anyon, 1980). By recognizing that hidden curriculum exists in our classrooms, teachers can be more aware of the importance and influence in recognizing that their personal attitudes can play both positive or negative role in influencing student achievement (Alsubaie, 2015). The goal would be for teachers to be aware of hidden curriculum and how it appears in their classroom. This awareness would help contribute to shaping a positive identity for low income and/or students of color (Chan, 2007).

Curriculum transformation is a process that never ends because of the changes that are continuing to evolve within our society. Much like a hidden curriculum,

mainstream-centric curriculum is a way in which racism, ethnocentrism can be reinforced and perpetuated in schools. Mainstream-centric curriculum can offer a false sense of superiority with misleading conceptions in students and their relationships with other racial/ethnic groups (Banks, 1989). To better integrate content about racial, ethnic, cultural and language groups in school curriculum, it is essential to continually educate teachers' knowledge of linguistic and racial diversity, standardized testing, and accountability (Banks & Mcgee Banks, 2016). This continued effort to educate teachers requires ongoing professional development to ensure students are adequately prepared for the standards by grade level and content area.

The process of implementing and evaluating curriculum needs to be conducted in a systematic way (Brady & Kennedy, 2010). This includes having a school committee convene to determine effectiveness and analyzing trends in an identified content area. According to Smith and Lovat (2003), curriculum is a cultural reproduction that has structures involving independent thinking and social responsibility (Smith & Lovat, 2003). Keeping this in mind, it is essential for a school system to acknowledge the importance of curriculum ("Importance of Curriculum," 2020).

The process of curriculum alignment within the school improvement process requires the alignment of arrows for a shared vision (Senge, 2006). Visions without systems thinking will only end up painting pictures of the future without deep understanding of the forces that must be mastered to develop a strong and viable core curriculum. A plethora of arrows can be placed on a board during the school improvement process, all going multiple directions.

A school that is continuously having conversations about their curriculum and discussing effective school improvement, enables teachers to better meet the needs of their students and the ever changing culture in our schools (Zalaznick, 2020). Research suggests a conscious effort can and should be made to ensure that these vital conversations are happening across a school. Curriculum change is difficult and necessary when our students are underperforming. Based on my professional experience, the word “change” often evokes fear from teachers, not because they lack the desire or capacity to improve, but collectively teachers value autonomy, time constraints, and the risk of change. With the shifting floor that often feels like sand, it can cause some teachers and leaders to, as Tony Wagner puts it, “rebuild the airplane while they are flying it” (Wagner, 2006).

Schools and educators are often suited to slow change and the work is personal. It is normal for there to be resistance to change since change can be interpreted as a risk, insult and autonomy of the teachers, and an opportunity for reflection and improvement on the status quo (Wagner, 2001). It is inevitable with organizational change that there will be disagreements, anxiety, and conflict. It is how one approaches this conflict that will make the difference. According to Brené Brown, having clear understanding is key to communicating (B. Brown, 2018). Although Brown’s work is not connected to school improvement, her work can be applied to thinking through curriculum, school improvement and the uncomfortable aspects of changing a practice and organizational change. Brown states, “when we listen with a guided purpose and ‘rumble,’ we are really saying, let’s have real conversations, even if it’s tough” (B. Brown, 2018).

In summary, curriculum has evolved over the last century, creating a significant impact on students. In this evolution from NCLB to ESSA, and school autonomy to determine the curriculum, school improvement continues to be in public conversation in the United States and the single most important business of a school. Curriculum is the core to setting measurable outcomes and tracking the progress of students throughout the year. Without curriculum, a school system is unable to run without acknowledging the importance of curriculum (“Importance of Curriculum,” 2020). There does not need to be an absolute curriculum, as we have learned from a host of authors on the historical context of curriculum. However, the world continues to progress and everything that is taught needs to be compatible to stay relevant. This is not a standardization of curriculum but the evolution of analyzing the effectiveness for a better design for upcoming generations. Next, I will discuss the main four competing theories regarding curriculum.

Theories of Curriculum

According to Schiro (2008), there are four competing theories of curriculum that have pushed visions forward to influence the curriculum field in education. The four identified theories by Schiro are humanists, developmentalist, social reconstructionism, and social efficiency. In Table 2, the classification schemes of curriculum tradition have been identified (Schiro, 2008).

Table 2

Classification Schemes of Curriculum Tradition

Elsner & Vallance (1974)	Schubert (1986)	Schubert (1996)	Zeichner (1993)	Ellis (2004)	Kliebard (2004)	Schiro (2013)
Academic rationalism	Intellectual Traditionalist	Intellectual Traditionalist	Academic	Knowledge Centered	Humanistic	Scholar Academic
Technology & Cognitive Processes	Social Behaviorist	Social Behaviorist	Social Efficiency		Social Efficiency	Social Efficiency
Self-Actualization	Experientialist	Experientialist	Developmentalist	Progressive & Learner Centered	Child Study	Learner Centered
Social Reconstructionism		Critical Reconstructionism	Social Reconstructionist	Society Centered	Social Meliorist	Social Reconstruction

Note. Schiro, 2008.

Next, I will provide a brief overview of each of the theories and will begin with

Humanistic Theory.

Humanistic Theory. The humanistic theory emphasizes looking at the whole individual and stresses concepts including free will, self-efficacy, and self-actualization (Power, 2021). This outlook or system of thinking focuses on the human being rather than supernatural or divine insight. The humanistic learning theory was formed by Abraham Maslow, Carl Rogers, and James F. T. Bugental in the early 1900s (*Teachers & Education*, 2020). Maslow believed that students are innately good and will then make good decisions when all their needs are met.

The common practice of humanistic curriculum targets the development and realization of complete individual personality of the student. This practice is based on the belief that the education that is good for a person is also best for the well-being of a

system. It also emphasizes the role of the learner and the place of social, emotional learning.

Humanistic curriculum could be characterized as idealistic and new age, with an emphasis on sensitivity training. It also does not prepare learners to interact critically within society and emphasizes the seeking of pleasure (Power, 2021). With an emphasis on allowing teachers to deliver instruction that based on individual needs will impact the vertical and horizontal development of core curriculum that would then impact standard expectations by grade and/or content. To summarize humanistic curriculum, the goal is to promote personal growth rather than academic and professional competence. Next, I will discuss Social Reconstructionism Theory.

Social Reconstructionism Theory. The social reconstructionism theory emphasizes the philosophical position that society is in the need of reform and that people can create a more perfect world. According to Lynch (2016), social reconstructionism is an educational philosophy that offers curriculum fostering student development (Lynch, 2016).

The common practice of social reconstructionism curriculum targets the develop of an individual student focused on social changes occurring (Esmaeili et al., 2015). The goal of education within social reconstruction is the belief and need for change and correction in all areas. This is a student-centered philosophy and would require active participation from students (Kandemir, 2021). This practice would develop intrinsic motivation and will improve problem solving, group work and conflict resolution. Curriculum would focus on the development of knowledge, skills, thinking, and creativity of students.

The teachers act as facilitators within social reconstructionism curriculum. The teacher supports the student exploration of physical, mental, moral and social growth. This may include small groups debating, differentiated activities, and learning opportunities. Teachers would float around the groups, guiding and using suggestions and thought-provoking questions.

Social reconstructionism curriculum would be difficult to design that is meant to meet all the needs of society (Kandemir, 2021). This would require constant training of teachers to achieve the fundamental knowledge needed to guide the instruction of students. Also, teachers would be charged with impacting the change process in society surrounding change knowledge, beliefs, and values of society. Next, I will discuss Developmentalist Theory.

Developmentalist Theory. The developmentalist theory came with the initiation of the child study movement in the 1880s by Stanley Hall (1844-1924; Owen, 2020). This movement studied children as they were so that curriculum could be designed based on observation of needs and interests.

The common practice of developmentalist curriculum targets child or learner-centered instruction. This concept is associated with the teachings of American philosopher and educator John Dewey (Armend, 2017). Dewey has also been associated with the social reconstructionist theory. The primary focus of the developmentalist theory is not on content but rather the students. A common practice would be project-based learning. The teachers typically act as facilitators and develop instruction and curriculum that is centered around the students.

Developmentalist curriculum would be difficult to design since it is reactionary in design. It would be engaging for students but it could develop potential gaps in meeting grade level standards when instruction is developed based on observation of student needs. Next, I will discuss Social Efficiency Theory.

Social Efficiency Theory. The social theory came about in 1913 when Franklin Bobbitt introduced his ideals that educators must use scientific methods to determine the set of objectives students needed to learn in order to grow and function as contributing members of society (Armend, 2017).

The common practice of social curriculum involves students being evaluated and educated towards their predicted role in society. This would involve the introduction of vocational and junior high schools to address the curriculum designed around specific life activities (Alanazi, 2016). Curriculum development and planning is focused on the sequential skill development in learning.

The teachers strive to teach behaviors within a social efficiency curriculum. Instruction would be based on behavioral objectives and emphasis on the mastery of skills. This could include the practice of intervention and remediation through drills. There is also a focus on assessments to show learning or the process of learned behaviors over time. Students are viewed as a member of society and capability to do everything taught in the classroom.

Social efficiency curriculum has become a leading curriculum ideology due to its alignment with national agendas, and not necessarily because it is best aligned to the educational needs of students (Armend, 2017). Furthermore, social efficiency approaches to curriculum can work against the original ideals of public education in having an

educated citizenry for a health democracy (Nasir & Hand, 2006). Next, I will discuss Socio-cultural Curriculum Theory.

Socio-cultural Curriculum Theory. Although Schiro (2008) did not name socio-cultural curriculum theory, it is a dominant curriculum theory, especially within the last 10 years. Socio-cultural theory originates with a Russian teacher named Lev Vygotsky who believed that children learn best when education incorporates the beliefs and attitudes modeled by their culture (Kurt, 2020). Through Vygotsky's (1978) sociocultural theory, "learning is a process that first occurs through interactions with others, before occurring within the individual" (Vygotsky, 1978). In essence, sociocultural theories of curriculum focus on curriculum as a cultural construct and how curriculum intersects with students' racial, gender, cultural, and class identities (Nasir & Hand, 2006).

A funds of knowledge approach to curriculum development is one example of sociocultural implementation in practice (Moll, 2019). Funds of knowledge are collections of knowledge-based in cultural practices that are a part of a families' culture, work experience, or daily routine (Wink, 2022). Funds of knowledge is centered around the belief that families can and do promote learning, but may not be apparent to teachers (Williams et al., 2020).

The common practices of funds of knowledge are to document and represent families and students within the curriculum. This includes educators arranging environments and experiences that respect the students' social history and intellect (Moll, 2019). The principle of contextualization is fundamental within the funds of knowledge. Contextualization aims to "combat the deficit perspective by which certain students are

said to suffer from limitations that prevent them from developing their school trajectories successfully” (Llopart & Esteban-Guitart, n.d.).

Culturally responsive pedagogy and curriculum in schools are a result of research grounded in sociocultural theory. Culturally responsive instructional and leadership approaches in schools have been found to raise and support the achievement of students of color (Gay, 2010; Khalifa, 2018; Ladson-Billings, 2009).

Sociocultural theory is a powerful model for disrupting teachers’ attitudes to cultures other than their own (Oughton, 2010). Teachers are charged with understanding the cultural and historical basis of students’ interests, from which pedagogical innovations may emerge. This includes teachers connecting with what should be taught and what students come to school knowing.

Summary. In summary, there are five key theoretical approaches to curriculum: Humanistic theory emphasizes looking at the whole individual; social reconstructionism theory emphasizes the position that society is in need of reform; developmentalist theory emphasizes the child study movement; social efficiency theory emphasizes the use learning objectives; and sociocultural theory emphasizes the inclusion of students’ racial, class, linguistic, and gender identities into the curriculum (Armend, 2017; Lynch, 2016; Owen, 2020; Power, 2021). Next, I will discuss the gaps in literature related to math curriculum and student achievement.

Gaps in the Literature

The research on math curriculum and its direct impact on student achievement shows a significant gap in research. According to the current literature on math curriculum and student achievement, the research findings can be organized into five

themes: Family and community engagement, teachers and curriculum implementation, types of math curriculum, impact of curriculum alignment, and student attendance. In this section, I will demonstrate this gap by first sharing the key findings of research and then I will name the gaps in understanding.

Family and Community Engagement

Public schools struggle with ways to encourage parental involvement in the classroom, yet research suggests this is an important factor for student math achievement. The research on family community engagement suggests that when parents are a part of the learning at school hosted events, students show an increase in student achievement (Mobley, 2012). Additional research suggests the importance of parents working at home with their students on math (Williams et al., 2020). Similar findings include higher math achievement by English language learners with Math teachers incorporate the home language of the students when teaching math (Sharma & Sharma, 2022). In sum, finding ways to support the involvement of families and parents along with valuing the home language of students appear to be an important aspect of encouraging math achievement.

Teacher Practices and Professional Development

Although curriculum is important, research suggests what is also important includes teacher content knowledge and pedagogical practices for math achievement. Research on teacher preparation suggests that many first-year teachers lack the transfer of learning from previous course work in mathematics to the instruction in their classrooms. The findings indicated that their preservice coursework did not contribute positively to their content knowledge in mathematics (Durkee, 2019). In an additional study examining the relationship between teacher instructional practices and changes in

curriculum, it was demonstrated that they may need to be incorporated together to show a positive impact in math student achievement (McCaffrey et al., 2001). The research on the relationship between central office support, and the support needed in intentional math professional development, indicates the importance between the relationship of central office and the much-needed support to our teachers in developing their math expertise. This study, however, did not provide the information needed to indicate that this relationship correlated to a positive impact in math achievement (Hutchinson, 2017). Finally, an additional study found there was a positive correlation between teachers receiving math professional development and middle school student growth (Ellsworth, 2020).

Mantemach's (2005) research further supports this claim. When examining the achievement of fourth grade students on standardized testing, Mantemach's findings suggests there is a correlation between professional development of teachers in mathematics and a required curriculum (Mantemach, 2005). Additional research suggests teacher professional development around textbooks can be helpful too. When reviewing a positive growth in math achievement, a study was conducted that analyzed the correlation between a math textbook and teaching math expertise. The findings were inconclusive and revealed a need to further investigate the connection between teacher knowledge in mathematical practices, a math textbook, and student achievement (Monaghan, 2013). In sum, these studies suggest professional development for teachers around math curriculum implementation and content are important.

A positive impact on student achievement in math through the implementation of math coaches has been documented in multiple grade levels (Palsma, 2018). When

teachers provide math intervention to students and have them graph their weekly progress, students showed improvement in math performance. Finally, one study points to the importance of administrators hiring practices by hiring effective math lead teachers aligned to a positive correlation to student achievement (King, 2017). In summary, in this section I examined the literature on teachers and curriculum implementation. The research findings demonstrate solid evidence that providing professional development for teachers on math curricula implementation will likely improve student achievement. Additional factors identified that improve student math achievement includes the utilization of math coaches and the importance of administrators understanding how to identify strong math teacher applicants and hiring them. In this next section, I will demonstrate the gap in literature on the types of math curriculum and impact on student achievement.

Types of Math Curriculum

Although few studies exist on math curriculum horizontal and vertical alignment, some studies exist regarding the impact of specific types of math curriculum. The findings have been mixed. In research conducted at a Missouri high school, the study indicated that there was not an increase in ACT performance based on the choice of math curriculum (Britt, 2021). In curriculum research on Singapore math and Everyday Mathematics on grade 5 performance aligned to different sets of standards, the study revealed there was not a significant difference in student performance based on their use of curriculum (Powell, 2014). However, an additional study on Singapore mathematics performance of third and fourth grade students showed greater gains in math achievement (Dales, 2020). In reviewing the effectiveness of Saxon math, the average effect size

across first through fifth grade, showed insignificant positive growth (Bell, 2011). Star math growth was analyzed in a study conducted in Tennessee. In this study the researchers found that teachers who participated in nine or more hours of professional development had a positive outlook on the implementation of math curriculum (Davis & Jones-Martorell, 2018). The research on Carnegie math curriculum and its alignment with instructional planning, direct instruction, and the assessment of students showed a positive impact on student achievement (White, 2018). When analyzing the fidelity of the Bridges math curriculum on student achievement, a recent study revealed there was no significant relationship between curriculum fidelity and the achievement of mathematics on standardized testing (Woodard et al., 2020). In a quantitative study conducted on Math Facts in a Flash, research showed there was no significant gains to student achievement during a 12-week intervention period (Little, 2018). In summary, in this section I examined the literature on seven types of math curriculum and the relationship to student achievement. The findings suggest a positive impact by some types of curricula but not all. These findings suggest the importance of schools' choosing math curricula that has been identified as improving student math achievement through systematic, unbiased research. In this next section, I will demonstrate the gap in literature on relationship of math curriculum and impact in student achievement.

Relationship of Math Curriculum and Student Achievement

The research on the relationship between math curriculum and student achievement suggests that curriculum may play a role in the alignment of standards per grade school but does not show a correlation to student achievement (McEwen, 2008). In another study examining the effectiveness of Georgia state standards and Quality Based

Curriculum, there were higher scores in standardized achievement with a curriculum that was aligned to standards (Thomas, 2008). A study looking at math curriculum and alignment to state standards showed there was minimal positive impacts on students' achievement (Nargi, 2018). In summary, in this section I examined the literature on the relationships of math curriculum and student achievement. In sum, there are studies suggesting the math curriculum aligned to state standards will result in increased math achievement, but there are studies suggesting that is not the case too. The findings are mixed with need to further investigate the potential correlation. Surprisingly, there are few studies available examining vertical and horizontal alignment of math curricula. I hope to fill this gap in the literature through my proposed research. In this next section, I will demonstrate the gap in literature on relationship of student attendance and math achievement.

Student Attendance and Math Achievement

Interestingly, the research regarding the impact of student attendance on math achievement is mixed as well. For example, a study on mobility and student achievement demonstrated no relationship in these two variables to influence positive growth in math achievement (Dalton, 2013). However, other research suggests that there is a correlation between student absences and math growth, indicating there is a correlation between student absenteeism and student math performance (Mulcahy, 2020). For these reasons, I examined student mobility and attendance rates in the lowest-performing schools within this study.

CHAPTER III: RESEARCH METHODS

Purpose of the Research

To date, little research has been conducted that examines established math curriculum implementation in lowest-performing schools, also known as comprehensive and in improvement status. Furthermore, little to no research has explored the type of curriculum being used and its correlation to achievement scores. The purpose of my research was to gain further understanding regarding the patterns in lowest-performing schools, particularly in relation to math curriculum and achievement. Although my research was not able to determine the impact of math curriculum on student achievement, it was an important first step in determining the context of lowest-performing schools. Furthermore, the data from this study was immediately put into practice for school improvement based on my work with IL-EMPOWER.

Research Questions

This study sought to answer two key questions:

1. Out of the 118 K-8 schools in Illinois with the comprehensive designation, what patterns and variation exist related to the following variables?
 - a. Enrollment
 - b. Racial/ethnic diversity
 - c. Low-income students
 - d. Students with IEPs
 - e. English Learners
 - f. Homeless
 - g. Gifted students
 - h. Student attendance
 - i. Student mobility
 - j. Chronic absenteeism
 - k. Chronically truant students
 - l. Teacher retention
 - m. Student-Teacher Ratios
 - n. Principal Turnover

2. What is the math curriculum context of the K-8 schools in Illinois with the comprehensive designation related to the following variables?
 - a. Tier 1 math curriculum aligned to learning standards
 - b. Vertical articulation conversations about curriculum
 - c. Horizontal articulation conversations about curriculum
 - d. Professional learning opportunities for teachers on math curriculum

Type of Study

Quantitative research using data from the Illinois Report card and a survey design was utilized to investigate the variables of an established math curriculum and a school's achievement scores (Creswell & Creswell, 2018). This study allowed for collecting and analyzing numerical data that can be used to find patterns, correlate findings, and generalize results.

Survey

The survey was completed by the IL-EMPOWER Coordinators after the Coordinators met with school administrators and the benchmark assessments were completed at the end of the school year. The survey was completed electronically, and password protected within a secure device. This data was used in the external evaluation of the IL-EMPOWER program and the support provided to schools. The data collection survey can be found in Appendix C.

Research Context

To better support the schools, IL-EMPOWER was developed as the Illinois statewide system of accountability and support that attempts to empower schools with choice and voice in the school improvement process. IL-EMPOWER consists of multi-tiered supports provided by the Illinois State Board of Education (ISBE) to Illinois schools that are identified for school improvement. Under ESSA, evidence-based tiers (see Table 3 below) have been defined with activities, strategies, and interventions for

Comprehensive Support and Improvement Schools (CSI), Targeted Support and Improvement Schools (TSI), and Additional Targeted Support and Improvement (ATSI) schools to use for school improvement (Regional Educational Laboratory at American Institute for Research, 2019). The evidence of tiers provide districts and schools with a framework for determining which programs, practices, strategies, and interventions work in which contexts and for which students (Garcia & Davis, 2019). This conversation begins first with reviewing school and district data to prioritize school improvement needs.

Table 3

ESSA Evidence Tiers

Tier 1	Tier 2	Tier 3	Tier 4
Strong evidence from at least one well-designed and well-implemented experimental study	Moderate evidence from at least one well-designed and well-implemented quasi experimental study	Promising evidence from at least one well-designed and well-implemented correlational study with statistical controls for selection bias	A rationale based on high-quality research findings or positive evaluation that such activity, strategy, or intervention is likely to improve student outcomes or other relevant outcomes; and includes ongoing efforts to examine the effects of such activity, strategy, or intervention

Note. Garcia & Davis, 2019.

To assist in these conversations, IL-EMPOWER provides differentiated support to schools in improvement status that are designated either targeted (underperforming) or comprehensive (lowest-performing). It is through this differentiated support, that schools designated comprehensive are provided an IL-EMPOWER Coordinator with expertise in implementing effective school improvement practices (ISBE, 2021c). The goal of IL-EMPOWER is to enable the State’s lowest-performing and underperforming schools to improve student achievement and student outcomes. Annual summative designations are

issued to Illinois schools using specific accountability business rules (ISBE, 2019a). It is through this annual summative designation that the state’s accountability system uses the indicators in Table 4 to determine a school’s summative designation within an elementary school (K-8) or high school grade band.

Table 4

ISBE Individual Indicators Used to Calculate Summative Designations

Elementary/Middle School (ES) indicators	High School (HS) indicators
ELA Proficiency	ELA Proficiency
Math Proficiency	Math Proficiency
ELA Growth	--
Math Growth	--
Science Proficiency	Science Proficiency
ELPtP (English Learners Progress to Proficiency)	ELPtP (English Learners Progress to Proficiency)
--	Graduation Rate
Chronic Absenteeism	Chronic Absenteeism
Climate Survey	Climate Survey
--	9 th Graders on Track

Note. Summative Designation Deep Dive (ISBE, 2019b).

School Site Selection

This study looked at 118 K-8 schools across the state of Illinois. They were chosen for this study because they were in school improvement status and have been designated as comprehensive in either 2018 or 2019. These schools designated comprehensive are a part of 852 districts and 3,849 schools across the state (ISBE, 2022). Only schools in improvement status designated comprehensive are receiving statewide support through the oversight of the IL-EMPOWER Coordinators.

Data was collected by the IL-EMPOWER Coordinator on a password protected device stored within our Illinois State Board of Education system. The IL-EMPOWER Coordinators was trained on each survey item to ensure the fidelity and integrity in the

collection of the data. The validity in this quantitative research drew meaningful and useful inferences from scores on particular instruments (Creswell & Creswell, 2018). Using Creswell's (2018) components of a survey study method plan, the survey followed a standard format (Creswell & Creswell, 2018). Although the names of the schools were initially collected, the names of the schools and assigned coordinator were removed for the study.

Data Analysis

Research Question 1, Context of the Schools. Illinois School Report Card data was accessed and organized in excel for each school. Correlational analysis was conducted to determine patterns and variance among the variables identified in research question 1.

Research Question 2, Math Curriculum Context of Schools. Survey data was entered into excel for each individual school. Descriptive statistics was utilized to determine if relationships existed between math curriculum variables and student math achievement. The data was also analyzed to determine patterns regarding the aspects of curriculum outlined in question 2.

Research Significance

The analysis from this study determines approaches to school improvement and the guidance to schools in improvement status and designated comprehensive. This study aligned with the guiding principles of the Carnegie Project on the Educational Doctorate (CPED) and is framed around equity in school improvement of schools performing in the bottom 5% of the state (*The Carnegie Project on the Education Doctorate, 2022*).

Ethics

My role as the Director of ESSA/IL-EMPOWER gives me access to the database regarding schools in school improvement status, their math curriculum and student achievement on standardized assessment. The data survey completed by the IL-EMPOWER Coordinators regarding the math curriculum being used in these 118 K-8 schools is not publicly accessible. Permission for the research study was sought from leadership within the ISBE organization. This included stripping the data of identifiers from the data collected and retaining the information on a secure and password protected device. IRB approval was sought for the research study.

Summary

In summary, this chapter outlined the purpose of conducting research that examines established math curriculum implementation in of K-8 schools that are in improvement status and designated comprehensive. This study is an important first step in determining the context of the lowest-performing schools and gain further understanding regarding the patterns in lowest-performing schools.

CHAPTER IV: QUANTITATIVE ANALYSIS OF RESEARCH

Utilizing Illinois School Report Card data, I first explore broad demographic patterns within the 118 schools designated as comprehensive. I then provide the results from correlational analyses related to my research question 1 (i.e., out of the 118 K-8 schools in Illinois with the comprehensive designation, what patterns and variation exist?) and a wide range of student and school variables.

General Demographic Overview

The enrollment range of the comprehensive schools varied from schools of 20 students to schools of 1,391 students with an average enrollment of 319 students.

Regarding income level of families, schools ranged from 0% low income to 100% low income. On average, the schools had 73% of low-income students. Regarding race/ethnicity, the schools ranged from 0%-99% white to 0%-100% students of color.

Regarding students with IEPs, comprehensive schools ranged from only 2% of the students having IEPs to 49% of the students having IEPs. Schools that had a higher percentage of students with IEPs also had higher rates of student mobility. The range of students who were homeless ranged from 0% to 21%. The higher the percentage of homeless students, the higher percentage of black students.

Regarding schools with mobility, comprehensive schools ranged from 2% mobility rate to 49% mobility rate. On average, the schools had a chronic absenteeism attendance average of 37%, with the chronic absenteeism rate being 0% to 94%. Chronic truancy ranged from 0% to 96% chronically absent students.

Regarding principal turnover, the schools ranged from one new principal over 6 years to five new principals over 6 years with an average of two new principals occurring

in these schools over 6 years. A summary of the range of variables can be found in Table 5 for the K-8 Comprehensive Schools.

Table 5

Range of Variables Among School Variables and Corresponding K-8 Comprehensive Schools (N = 118)

Variable	Range	
	Low (%)	High (%)
Student Enrollment	20	1391
Low Income	0%	100%
White	0%	99%
Students of color	0%	100%
Students with IEPs	2%	49%
Homeless	0%	21%
Student Mobility	2%	49%
Chronic Absenteeism	0%	94%
Chronically Truant Students	0%	96%
Principal Turnover (over 6 years)	1%	5%

In summary, schools varied widely across student demographics, enrollment of school, and rate of principal turnover. It reinforces the importance of not making assumptions about which schools end up in the comprehensive designation. It also goes beyond student incomes, race/ethnicity, IEP, student mobility, etc. Next, I will discuss the patterns that were statistically significant through correlational analysis.

Research Question 1: Correlation Analysis

The following variables were analyzed for correlations:

- a. Enrollment
- b. Racial/ethnic diversity
- c. Low-income students
- d. Students with IEPs
- e. English Learners
- f. Homeless
- g. Gifted students
- h. Student attendance
- i. Student mobility
- j. Chronic absenteeism

- k. Chronically truant students
- l. Teacher retention
- m. Student-Teacher Ratios
- n. Principal Turnover

The correlations table in Tables 6 and 7 present the variables, their descriptions, and the Pearson correlation coefficient. The Pearson correlation coefficient was computed to assess the relationship between 18 variables related to comprehensive designation in 118 K-8 elementary schools in Illinois. The correlations in Table 6 and 7 present 2-tailed correlations, asterisks (**) indicate whether a particular correlation is significant at the .01 level. When the correlation is significant at the .05 level, an asterisk (*) is used, and sample size is indicated by (*N*).

The positive, statistically significant correlations found from this study show that there is a positive correlation between enrollment and the following variables: Black, Hispanic, Asian, two or more, low income, English Learners, chronic absenteeism, and chronically truant. In sum, schools with a higher enrollment, are likely to have a higher percentage of student who are Black, Hispanic, Asian, two or more, low income, English Learners, chronic absenteeism, and truancy.

When looking at the correlation between diversity of students, the findings varied. The positive, statistically significant correlation between white students and the variables of student attendance indicated that comprehensive schools with higher percentage of white students have better attendance.

Table 6

Correlations Among 18 School Variables and Corresponding K-8 Comprehensive Schools (N = 118)

Variable	Enrollment	White	Black	Hispanic	Asian	American Indian	Pacific Islander	Two or more	low income	Students with IEPs	Homeless	English Learners	Student Attendance	Student Mobility	Chronic Absenteeism	Chronically Truant	Students Teacher Retention	Principals Turnover		
Enrollment	1																			
White		1																		
Black			1																	
Hispanic				1																
Asian					1															
American Indian						1														
Pacific Islander							1													
Two or more								1												
low income									1											
Students with IEPs										1										
Homeless											1									
English Learners												1								

(Table Continues)

(Table Continued)

Variable	Enrollment	White	Black	Hispanic	Asian	American Indian	Pacific Islander	Two or more	Low income	Students with IEPs	Homeless	English Learners	Student Attendance	Student Mobility	Chronic Absenteeism	Chronically Truant	Students Retention	Principals Turnover
Student Attendance	-.39**	.57**	-.53**	-.08	-.17	.06	.11	-.33**	-.44**	-.23*	-.09	-.10	1					
Student Mobility	.10	-.24**	.20*	.01	.10	.00	.15	.41**	.24**	.18*	-.05	.03	-.34**	1				
Chronic Absenteeism	.42**	-.60**	.57**	.04	.19*	-.11	-.09	.38**	.46**	.18	.07	.04	-.95**	.41**	1			
Chronically Truant	.50**	-.63**	.59**	.09	.14	-.08	-.13	.39**	.45**	.18	.10	.10	-.87**	.41**	.92**	1		
Teacher Retention	.12	-.03	.08	-.10	.19*	-.12	-.09	-.01	.07	.01	-.03	-.11	.07	.09	-.02	-.03	1	
Principals Turnover (over last 6 yrs)	.06	-.28**	.21*	.23*	-.01	.00	-.05	-.04	.17	.01	.04	.22*	-.16	.04	.17	.19*	-.30	1

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Table 7

Correlations Among 15 School Variables and Corresponding K-8 Comprehensive Schools (N = 118)

Variable	Enrollment	White	Black	Hispanic	Two or more	low income	Students with IEPs	Homeless	English Learners	Student Attendance	Student Mobility	Chronic Absenteeism	Chronically Truant	Teacher Retention	Principals Turnover
Enrollment	1														
White	-.36**	1													
Black	.21*	-.90**	1												
Hispanic	.32**	-.37**	-.05	1											
Two or more	.25**	-.18*	.06	-.00	1										
low income	.19*	-.69**	.64**	.18*	.18	1									
Students with IEPs	.02	.12	-.09	-.22*	.40**	.09	1								
Homeless	-.15	-.09	.15	-.08	-.20*	.27**	.04	1							
English Learners	.26**	-.34**	-.06	.95**	-.00	.18	-.21*	-.05	1						
Student Attendance	-.39**	.57**	-.53**	-.08	-.33**	-.44**	-.23*	-.09	-.10	1					
Student Mobility	.10	-.24**	.20*	.01	.41**	.24**	.18*	-.05	.03	-.35**	1				
Chronic Absenteeism	.42**	-.60**	.57**	.04	.38**	.46**	.18	.07	.04	-.95**	.41**	1			

(Table Continues)

(Table Continued)

Variable	Enrollment	White	Black	Hispanic	Two or more	low income	Students with IEPs	Homeless	English Learners	Student Attendance	Student Mobility	Chronic Absenteeism	Chronically Truant	Teacher Retention	Principals Turnover
Chronically Truant	.50**	-.63**	.59**	.09	.39**	.45**	.18	.10	.10	-.87**	.41**	.92**	1		
Teacher Retention	.12	-.03	.08	-.10	-.01	.07	.01	-.03	-.11	.07	.09	-.02	-.03	1	
Principals Turnover	.06	-.28**	.21*	.23*	-.04	.17	.01	.04	.22*	-.16	.04	.17	.19*	-.30**	1

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

There was a positive, significant correlation between Black students and the variables of low income ($r(df)=.64$), student mobility ($r(df)=1.98$), chronic absenteeism ($r(df)=.57$), chronically truancy ($r(df)=.59$), and principal turnover ($r(df)=.21$). In sum, schools with higher percentages of Black students are also more likely to have higher percentages of low-income students, higher rates of student mobility, truancy, and absenteeism, and principal turnover.

When looking at the positive, significant correlation between Hispanic/Latinx and low income, English Learners, and principal turnover, the results were mixed. To summarize, schools that had a higher percentage of Hispanic/Latinx students, also more likely to have a higher percentage of low-income students, English Learners, and principal turnover rates.

The positive, significant correlation evident between Asian and the variables English Learners, chronic absenteeism, and teacher retention, indicated that a school with a higher percentage of Asian students also are more likely to have a higher percentage of English Learners, chronic absenteeism, and teacher retention.

There was a positive correlation between low-income and the variables Black, Hispanic/Latinx, homeless, student mobility, chronic absenteeism, and chronically truant students. This mean schools that had a higher percentage of low-income students also are more likely to have a higher percentage of students who were Black, Hispanic/Latinx, homeless, chronic absenteeism, chronically truant students, and a high percentage of student mobility. This suggests absenteeism, truancy, and student mobility are more likely related to the impact of poverty on students and families. Additionally, Black and Latinx families are more likely to have higher poverty rates.

When looking at the positive, significant correlation between students who had IEPs and the variable of two or more race/ethnicity and student mobility, a key finding was that schools with a higher number of IEPs, also are more likely to show higher student mobility.

While a positive correlation was evident between English Learners and the variables Hispanic/Latinx, Asian, American Indian, and principal turnover, schools with higher rates of English Learners were more likely to have higher rates of principal turnover too.

When looking at the positive, significant correlation evident in between chronic absenteeism and the variables: student mobility, and chronically truant students, the finding follows logic that where there is chronic absenteeism, student mobility and chronic truancy of students will be a higher percentage.

While the positive correlation is evident between chronically truant students and the variables Black, two or more, low income, and principal turnover; key findings indicated that schools that are chronically truant have a higher percentage of Black and two or more races, low-income students, and higher principal turnover.

There existed a positive, significant correlation evident between principal turnover (over the last 6 years) and variables Black, Hispanic/Latinx, English Learners, and chronically truant students. In schools with higher principal turnovers in the last 6 years, there was a higher percentage of Black, Hispanic/Latinx, English Learners, and chronically truant students.

In conclusion, the key findings painted a picture of summatively designated comprehensive schools as more likely to have higher numbers of students of color, low-

income students, English Language Learners, and a high principal turnover rate. These groups of students disproportionately represent low-achieving schools. Next, I will discuss the variables that had inverse, or negative, relationships.

The negative, statistically significant correlations found from this study show that there was a negative correlation between students who are white and the following variables: low income, English Learners, student mobility, chronic absenteeism, chronic truancy, and principal turnover. A school with a higher percentage of white students have a lower percentage of these listed variables.

The negative, statistically significant correlations found from this study show that there was a negative correlation between students who are Black and student attendance. A school with a higher percentage of Black students, also have lower student attendance percentages.

The negative, statistically significant correlations found from this study show that there was a negative correlation between students who are Hispanic/Latinx and students with IEPs. This means that schools with a higher percentage of Hispanic/Latinx students, have a lower percentage of students with IEPs.

The negative, statistically significant correlations found from this study show that there was a negative correlation between students with two or more races and the following variables: homeless, and student attendance. This means that schools with higher percentages of students with two or more races, have a lower percentage in homeless students and student attendance.

When looking at the negative, statistically significant correlations found between teacher retention the variable of principal turnover, key findings indicate that schools with a high principal turnover also have a lower percentage of teacher retention.

The overall findings paint a picture of schools summatively designated comprehensive as more likely to have students of a lower percent of teacher retention in schools where principal turnover is higher. This research also indicates that the higher the percentage of Hispanic/Latinx students in a school, the lower percentage of IEPs. In schools with a higher percentage of Black students, there is a higher percentage of low-income students and student absenteeism. Next, I will discuss student-teacher ratio and gifted students.

Student Teacher Ratio. The overall findings in Table 8 indicate there was not a significant correlation between the student/teacher ratio and the turnover rate of principals of the 118 comprehensive schools. This research indicates that student/teacher ratio does not have a significant impact related to the comprehensive designation.

Table 8

Correlation Between Student Teacher Ratio and Principal Turnover and Corresponding K-8 Comprehensive Schools (N = 118)

Variable	Student Teacher Ratio	Principal Turnover
Student Teacher Ratio	1	
Principal Turnover (over last 6 years)	-0.01	1

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Gifted Students. Using the data collected from the Illinois Report Card, only two of the 118 comprehensive schools reported the total number of gifted students in their schools. Both schools reporting the gifted numbers were from the same school district.

Due to the lack of school data reported regarding gifted students, insufficient data could be analyzed which could indicate these schools are less likely to have gifted programming.

In summary, the key findings from the correlational analyses of the school report card data paint a picture of summatively designated comprehensive schools as more likely to have higher numbers of students of color, low-income students, English Language Learners, and a high principal turnover rate. These groups of students disproportionately represent low-achieving schools. Next, I will provide an overview of the data analysis from research question 2.

Research Question 2: Math Curriculum Context

Question two focused on exploring the math curricular context for the low-achieving schools. Based on my experience in schools, I expected math curricula in the low achieving schools to be more likely to not be in place. I was eager to see if my professional experience would be represented in the data.

The data for this research question was collected via a survey completed by the IL-EMPOWER Coordinators when they went to visit each of the comprehensive schools during the spring/summer of 2022. The IL-EMPOWER Coordinators were trained on each survey item to ensure the fidelity and integrity in the collection of the data. This survey examined the curriculum context of the K-8 schools in Illinois with the comprehensive designation related to the following variables:

1. Tier 1 math curriculum aligned to learning standards
2. Vertical articulation conversations about curriculum

3. Horizontal articulation conversations about curriculum
4. Professional learning opportunities for teachers on math curriculum

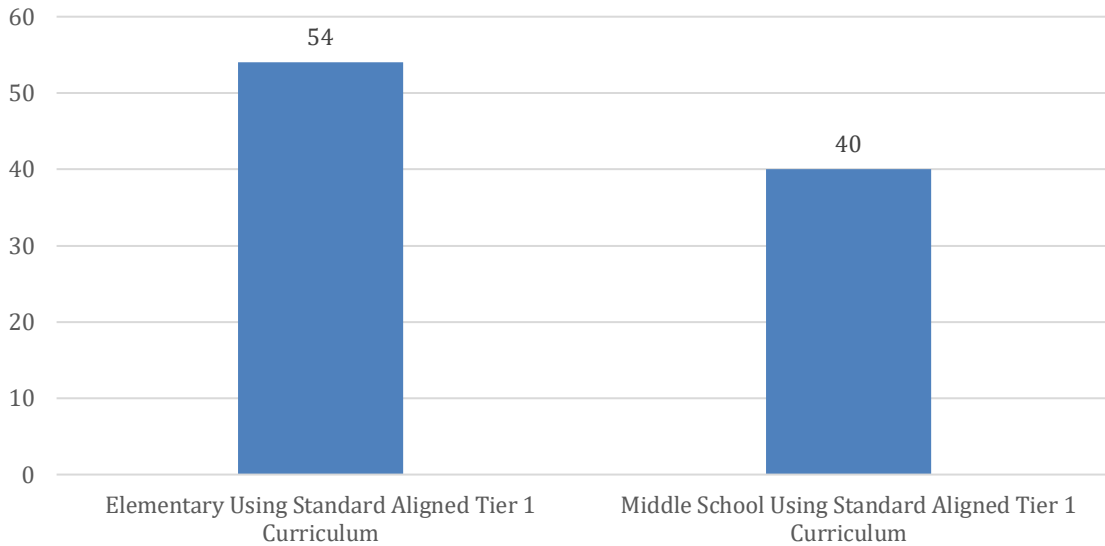
When examining the math curriculum context and student math achievement among the 118 K-8 schools designated comprehensive, typical patterns emerged from this research including factors that are likely to be in these schools. Descriptive statistics analyzed the types and frequency of Tier 1 math curriculum, if vertical and horizontal articulation conversations occurred on the mathematics, and the professional learning opportunities focused on mathematics.

Tier 1 Math Curriculum. When analyzing the Tier 1 Math Curriculum used in the 118 K-8 comprehensive schools, 54 elementary schools and 40 middle ($n = 94$) schools reported using a standard aligned math curriculum. Of the 94 schools, 23 different math curriculums were reported as being used in these schools. Twenty-one of the 23 Tier 1 math curriculums were standard aligned through an evidence-based math curriculum. The number 94 does not equate to the total number of schools, which is 118 due to some schools using district created curriculum or using supplemental math curriculum for instruction. Figure 1 shows that it appears more elementary schools (43%) used a standard aligned math curriculum than at the middle school level (57%).

Figure 1

Grade Level of School and the Correlation of Tier 1 Math Curriculum of Illinois K-8

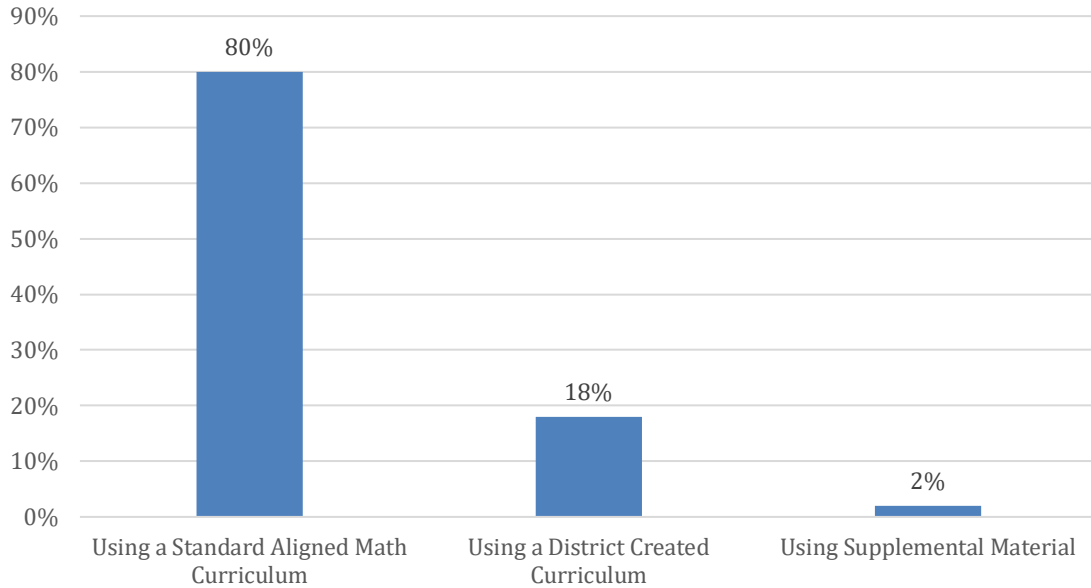
Comprehensive Schools (N = 118)



These findings showed that 80% of the K-8 comprehensive schools are using a standard aligned Tier 1 math curriculum, while 18% are using district created curriculums and 2% are using supplemental math curriculum for instruction in the schools. The results are indicated in Figure 2. Since 80% (n=94) of the 118 schools are using a standard aligned curriculum, this suggests that having a standard-aligned curriculum does not relate to schools being designated as low-achieving. Issues beyond a school using a standard-aligned math curriculum appear to be responsible for the schools' low achievement.

Figure 2

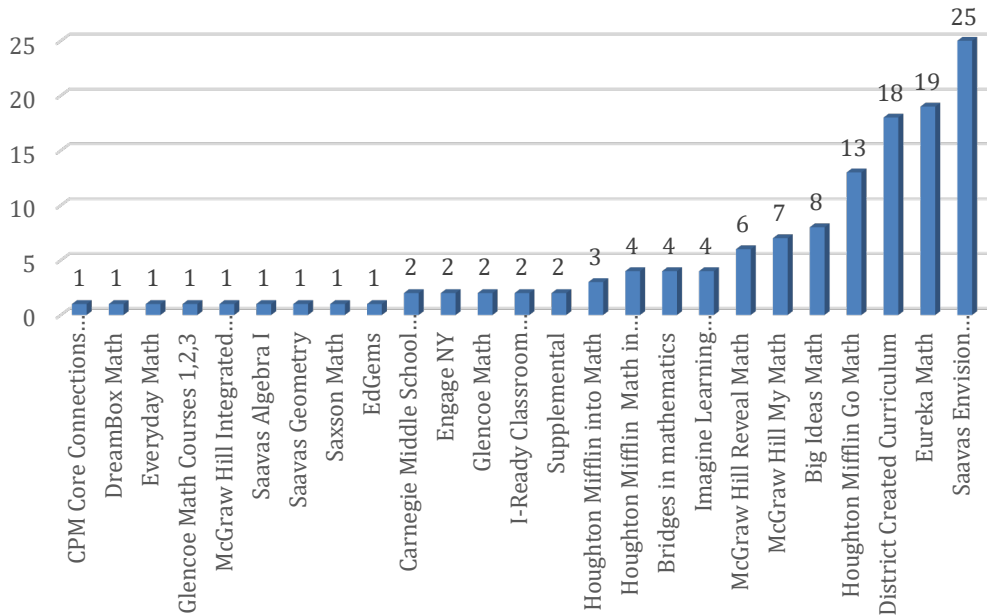
Illinois K-8 Comprehensive Schools Using Tier 1, Standard Aligned Math Curriculum, District Created Curriculum, and Supplemental Material (N = 118)



Frequency of Math Curriculum. When taking a closer look at the 23 different Tier 1, standard aligned math curriculum, district created curriculum, and schools using supplemental material for mathematics, the data indicated that 18 schools use a district created curriculum. When looking at the top five most frequently used Tier 1, standard aligned math curriculum, findings from this data indicated that there were two types of curriculums chosen more frequently than district created curriculum, Eureka Math and Saavas Envision. This is illustrated in Figure 3.

Figure 3

Math Curriculum Used in Illinois K-8 Comprehensive Schools (N = 118)



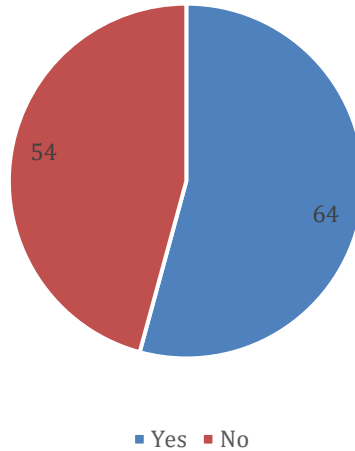
Vertical and Horizontal Articulation Conversations on Math Curriculum.

Vertical and horizontal curriculum alignment is important because it helps teachers identify gaps that students are having in their learning based on the learning standards. The survey data showed that of the 118 comprehensive K-8 schools, 46% (n = 54) reported having math vertical articulation (i.e., grade level below and above) conversations in their schools, while 54% (n=64) reported not having math vertical articulation conversations. These findings are indicated in Figure 4.

Figure 4

Math Vertical Articulation Conversations Occurring in Illinois K-8 Comprehensive

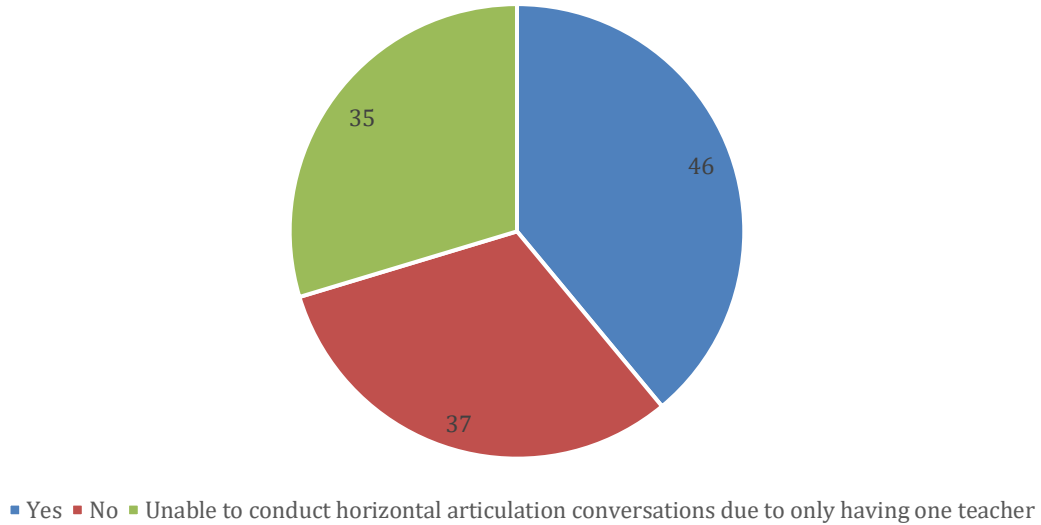
Schools (N = 118)



In Figure 5, the descriptive statistics indicated that 39% ($n = 46$) of the schools are having math horizontal articulation conversations (i.e., within the same grade level), 31% ($n = 37$) are not having math articulation conversations, while 30% ($n = 35$) have the inability to conduct math horizontal math articulation conversations due to only having one teacher for the grade level. This leaves only 31% of the schools not participating in math horizontal articulation conversations.

Figure 5

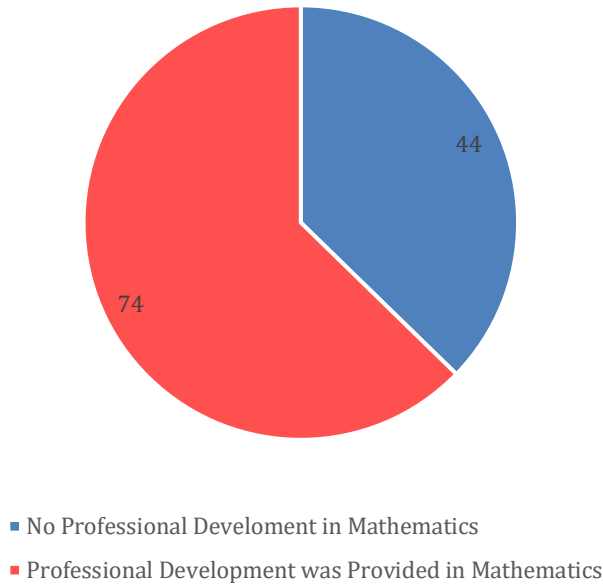
Math Horizontal Articulation Conversations Occurring in Illinois K-8 Comprehensive Schools (N = 118)



Math Professional Learning Opportunities. The findings from the analysis of data concerning the professional learning opportunities focused on math curriculum, indicated that 74 (63%) of the 118 K-8 comprehensive schools provided professional development on Tier 1, math curriculum during the 2021-2022 school year. While 44 schools (37%) did not provide professional learning opportunities on mathematics. These findings are indicated in Figure 6.

Figure 6

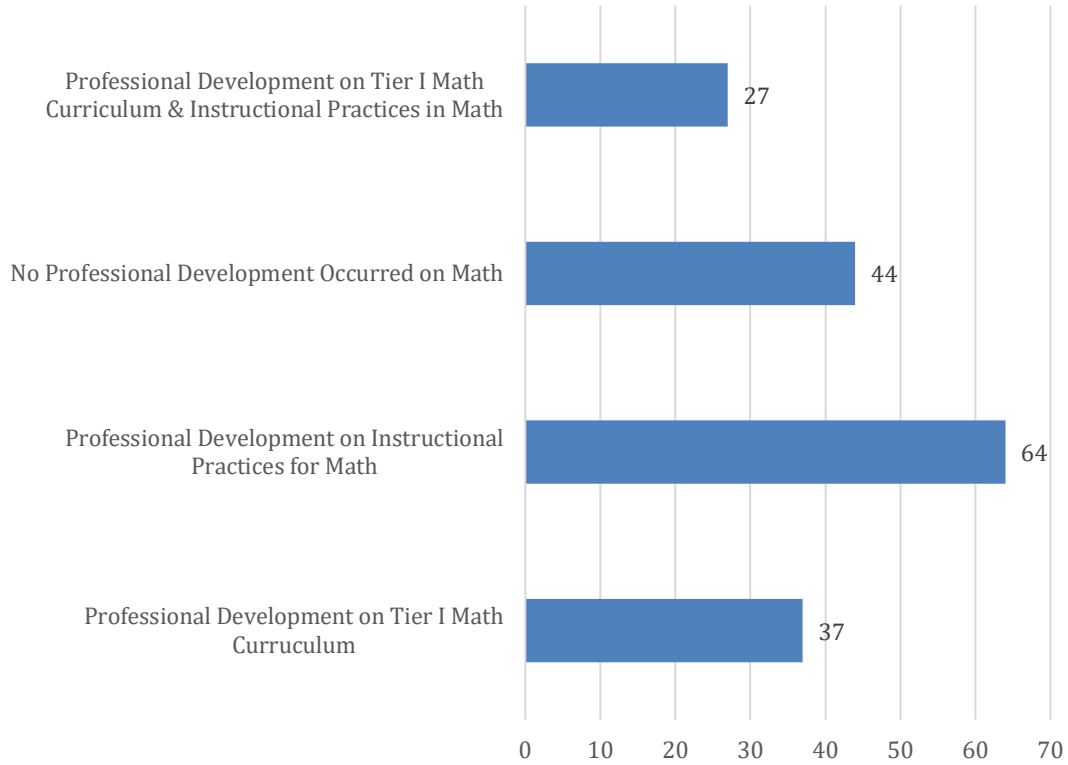
Math Professional Learning Opportunities Provided in Illinois K-8 Comprehensive Schools (N = 118)



The professional development opportunities for teachers are either conducted by the school district or by an outside entity. Thirty-seven schools indicated that professional learning opportunities focused on the Tier 1 math curriculum, and 64 schools focused on instructional practices in mathematics. Twenty-seven of these schools provided professional development opportunities on both Tier 1 math curriculum and instructional practices. In contrast, 44 (37%) schools indicated no professional development occurred on mathematics. The total number 172 does not equate to the total number of schools, which is 118, due to some schools providing professional development in Tier 1 math curriculum and instructional practices. In Figure 7, the bar graph of these results is shown.

Figure 7

Professional Learning Opportunities for Teachers on Math Curriculum



Here are the key findings that are of particular importance for this research. When analyzing Tier 1, math curriculum of the 118 K-8 comprehensive schools, 23 different math curriculums were reported as being used in these schools. Twenty-one of the 23, which is 80%, are using Tier 1 math curriculums and were standard aligned through an evidence-based math curriculum. Also in these findings, more elementary schools than middle schools were using a standard-aligned Tier 1, math curriculum.

Research findings indicated that of the 118 comprehensive K-8 schools, 46% reported having math vertical articulation (i.e., grade level below and above) conversations in their schools, while 54% reported not having math vertical articulation conversations.

The descriptive statistics indicated that 39% ($n = 46$) of the schools are having math horizontal articulation conversations (i.e., within the same grade level), 31% ($n = 37$) are not having math articulation conversations, while 30% ($n = 35$) indicated the inability to conduct math horizontal math articulation conversations due to only having one teacher within a grade level. Finally, 37 schools indicated that professional learning opportunities that occurred focused on the Tier 1 math curriculum, and 64 schools on instructional practices in mathematics. Twenty-seven of these schools provided professional development opportunities on both Tier 1 math curriculum and instructional practices. In contrast, 44 (37%) schools indicated no professional development occurred on mathematics.

Summary

A majority of the comprehensive designated schools that used standard align math curriculum had vertical (46%) and horizontal math curriculum conversations (59%), and 74 (63%) of the schools provided professional development opportunities in math, and 44 schools (37%) did not provide professional learning opportunities on mathematics. These results are counter to what I anticipated finding. I will discuss in the next chapter the implications of these findings.

CHAPTER V: FINDINGS AND DISCUSSION

To date, little research has been conducted that examines established math curriculum implementation in lowest-performing schools, known as comprehensive and in improvement status within the state of Illinois. Furthermore, little to no research has explored the type of curriculum being used and its correlation to achievement scores. My research aimed to gain further understanding regarding the patterns in lowest-performing schools, particularly in relation to math curriculum and achievement. Ultimately, I hope my research can support school improvement efforts in lowest performing schools.

Although my research was not able to determine the impact of math curriculum on student achievement, it is an important first step in determining the context of lowest-performing schools. Furthermore, the data from this study will immediately be put into practice for school improvement based on my work with IL-EMPOWER.

The key research questions explored within this study included: (a) investigating the patterns and variations that exist related to the Illinois Report Card variables in the 118 K-8 comprehensive schools; and (b) analyzing the math curriculum context of the K-8 comprehensive schools related to type of curriculum, vertical articulation, horizontal articulation, and professional learning opportunities for teacher on math.

Quantitative data from the Illinois Report Card and a survey data about math curriculum were utilized to investigate variables related to school achievement. The variables included: enrollment, racial/ethnic diversity, students with IEPs, English Learners, homeless, gifted students, student attendance, student mobility, chronic absenteeism, chronically truant students, teacher retention, student-teacher ratio, and principal turnover. The second research question focused on the area of mathematics.

This included investigating the types of curriculum, whether the curricula was standards aligned, if vertical and horizontal articulation conversations occurred, and the type of professional development that was provided to teachers,

Utilizing this comprehensive set of data, I first strove to answer my research questions while also addressing implications for practice, potential confounding variables, and recommendations for future research.

Illinois Report Card Data Findings

The key findings that emerged from the data gathered from the 118 comprehensive K-8 schools in Illinois showed are more likely to have students of color, low-income students, English Learners, and a high principal turnover rate. The findings from this research also indicated that the higher the percentage of Hispanic students in a school, the more likely the lower percentage of IEPs. On the other hand, in schools with a higher percentage of Black students, there is more likely to be a higher percentage of low-income students and student attendance. I will now discuss more in-depth each of these key findings.

Principal Turnover Findings

According to DeMatthews (2018) and Grissom et al. (2021), K-12 principals play a key role in meeting academic and social emotional needs of students in our schools (DeMatthews, 2018; Grissom et al., 2021). Research shows that principals can indirectly impact the student achievement by evaluating teaching and curriculum, and by valuing that teachers engage in continuous learning and development (V. Robinson et al., 2008). Research also indicates that a school's test scores fall in the years after a principal leaves

a schools but then rebuilds as a principal maintains a schools for multiple years (Miller, 2013).

The impact of Covid-19 has taken a toll on our K-12 students and teachers, as well as our school leaders. Some leaders have chosen to voluntarily leave the profession or move to districts with less academic needs. This matches the research conducted in this study. There was a higher percentage of principal turnover in the last 6 years, in schools summatively designated comprehensive, that have students of color, low-income students, and English Learners. Research shows that principals are less likely to remain in low-income schools with students of color (Grissom & Bartanen, 2019). In preparing future leaders, research suggests that programmatic emphasis at the university level focused on principal sustainability, in particular in schools that are lowest performing (DeMatthews et al., 2022). This connects to this research through a lens of equity. Schools with high principal turnover lack the stability that teachers and students need to be successful.

To effectuate this change, our K-12 principals need support to refocus efforts on school improvement that include strong structures for the forward movement of schools (Eaker & DuFour, 2015). This support includes principal preparation programs with intentional focus on the school improvement process and school improvement practices, embedded professional development for new leaders specific to best practices, analyzing and using data effectively, and support from the district office for individual and school growth (Letendre, 2020). According to research, principal turnover is higher in schools that serve low-income students of color; however, improving leadership stability may be an effective approach in reducing teacher turnover and improving the outcomes of

students (DeMatthews, 2018). Another key finding in research indicates that when building leadership stability is in place, that it helps develop the capacity of the teachers, improves working conditions, and reduces turnover (Torres, 2019).

In summary, principals can indirectly impact the lowest performing schools by developing the capacity of the teachers, evaluating teaching and curriculum practices, and valuing that teachers engage in continuous improvement of learning and development. In conclusion, this first begins with the preparation of principals, so they are prepared for the work of school improvement and sustainability efforts in our schools. Incorporating courses specifically on school improvement, ensures that the work of school improvement is at the forefront of the work that is being done in our schools. Without this vision, it is difficult for the alignment of arrows to do the good work of school improvement. This consistency of practice in principal preparation programs of creating a course specific to school improvement creates a strong and stable foundation of schoolwide systems by developing continuous improvement practices for future leaders.

Over-Representation of Students of Color and Low-Income Students

Another key finding from this research shows that effective strategies are needed to support school improvement in schools with a high percentage of students of color and low-income students. Some things that a school and district can do to positively impact students in these comprehensively designated schools is to ensure that curriculum is culturally relevant. Often in our schools with a high percentage of students of color and low-income students, there is a cultural incongruity between educators and their students (Ramsay-Jordan, 2017). This is why it is so important that the math curriculum show

evidence of inclusion, equity, and an infusion of cultural references in instructional practices (Mgonja et al., 2021).

When looking at math pedagogy, using math in the context of family conversations and experiences in a community can enhance the appreciation of both a student's community and the math discipline (B. A. Brown et al., 2019). Research also suggests that students be provided multiple opportunities for learning, and practicing to develop mathematical literacy elements (Nolan & Keazer, 2021) These practices include hosting math family nights, where you model how to engage in conversation about mathematics. Another practice would be to engage in math professional development for teachers that emphasizes the practice of relearning opportunities to meet the needs of each student in their learning continuum.

Teachers continue to be challenged in understanding diversity, including their own roles in diverse classrooms. According to the National Center for Education Statistics (NCES), the majority of teachers (80%) in the United States are white (National Center for Education Statistics, 2017). Teachers who are white can be culturally responsive in their practice but require specialized training and field experiences (Will, 2022). Developing a panel of students from the school to ask questions about their learning would benefit teachers who are white to become more culturally responsive in their practices. Another practice would be providing professional development to the teachers with ongoing support for implementation of culturally responsive practices, time for collaboration, and opportunities for peer learning observations.

Chronic Truancy, Chronic Absenteeism, and Student Mobility

Another key finding in this study is that chronic truancy, chronic absenteeism, and student mobility go hand in hand. Meaning, when there is a high percentage of chronic absenteeism, then there is also higher student mobility and truancy. These schools also are more likely to have a higher percentage of students who are Black or multi-racial. Again, what does this mean for school improvement practices?

Research shows that to improve attendance, principals should engage with local stakeholders to draw from outside perspectives and increase community awareness (Bartanen, 2020). A common approach to this is for schools to develop a stakeholder advisory group when working on school improvement efforts. Stakeholders may include teachers, students, school leaders, parents, local businesses, and community members. The inclusion of a stakeholders advisory group builds an understanding on issues ranging from how best to disburse federal funds, to how to support schools that serve struggling or high-need students. A guidance document from the Illinois State Board of Education has been developed to support schools in establishing a stakeholder advisory group and can be found on the IL-EMPOWER school improvement website and resources (Illinois State Board of Education, 2022).

With schools with a high student mobility rate, schools using a standard aligned curriculum, with teachers engaging in vertical and horizontal alignment conversations, will less likely develop gaps in understanding. The implementation of a standard aligned curriculum and curriculum alignment will create a consistency in what is taught across grade levels. So, curriculum alignment is also very important for low-income students who are more likely to have high mobility due to housing insecurity. Under the Every

Student Succeeds Act (ESSA), states can determine which academic and non-academic metrics are used to measure school performance. (Lee, 2018). The implications of this is that since states include students' attendance in measuring non-academic metrics, this then turns absenteeism into a problem that schools can partner with families in solving (Balu & Ehrlich, 2018). Research in schools in both Chicago and New York have found that a way to improve student attendance is to assign a mentor to a student (Balfanz & Byrnes, 2018). Another key practice to improve student attendance is the increase communication with parents or guardians. One way a principal can assist is by notifying parents about their child's attendance (C. D. Robinson et al., 2018). Another key practice is for schools to integrate a Multi-Tiered System of Support (MTSS) or positive interventions and support (Bartanen, 2020). When schools develop MTSS practices, you will see teachers facilitating high-quality instructional materials to students in Tier 2 and Tier 3, however it does require a curricular infrastructure to support teachers' implementation of interventions with fidelity. Fidelity includes consistency, accuracy and integrity of the interventions being implemented with students, all of which are key tenants in ensuring the effectiveness of a multi-tiered system of support (National Center on Intensive Intervention, n.d.).

In summary, chronic truancy, chronic absenteeism, and student mobility go hand in hand. Research shows that to improve attendance, principals should engage with local stakeholders to draw from outside perspectives and increase community awareness. One possible approach would be for schools to develop a stakeholder advisory group when working on school improvement efforts. Another approach would be to ensure that a standard aligned curriculum is in place to lessen gaps in learning, engage in horizontal

and vertical articulation on student learning, and to develop a MTSS practices within a school.

Family Engagement and School Improvement

As I described earlier in the literature review, public schools struggle with ways to encourage parental involvement in the classroom, yet research suggests this is an important factor for student math achievement (Jeynes, 2022). The research on family community engagement suggests that when parents are a part of the learning at school hosted events, students show an increase in student achievement (Mobley, 2012). According to Jeynes (2022), the effects of parental expectations are shown to be effective at both the secondary and elementary school levels (Jeynes, 2022). Funds of knowledge curriculum development assists with family engagement. Funds of knowledge are collections of knowledge-based in cultural practices that are a part of a families' culture, work experience, or daily routine (Wink, 2022). Funds of knowledge is centered around the belief that families can and do promote learning, but may not be apparent to teachers (Williams et al., 2020). The common practices of funds of knowledge are to document and represent families and students within the curriculum.

So, if teachers develop some of their standards-based curricula around their students' funds of knowledge, then they will see an increase in family involvement. Funds of knowledge has been shows to be especially effective with Latinx and other immigrant families (Karami, 2021).

Tier 1, Standard Aligned Math Curriculum

When looking at the math curriculum context of the K-8 schools in Illinois with the comprehensive designation, this study looked at four variables. These four variables

included analyzing if the 118 schools in this study had a Tier 1 math curriculum aligned to learning standards, conducted vertical and horizontal conversations on the Tier 1 math curriculum, and that professional learning opportunities for teachers on math curriculum was being provided in these schools. I will now discuss each of these in more detail.

Math Curriculum Findings

Based upon the findings in this research, 80% of the lowest performing schools were using standard aligned, evidence-based math curriculum. Furthermore, almost 70% of the schools had some form of horizontal articulation of their math curriculum. Does this mean these factors are not important for school achievement? I do not think that is the case. Instead, I believe it suggests the importance of vertical articulation in combination with these other factors. Without vertical articulation in math, students are not learning from one year to the next. Vertical articulation ensures there is a coherent and logical process to maximize student understanding and progression.

In summary, schools need to have both vertical and horizontal articulation conversations to ensure unintended consequences have not developed within the school. Furthermore, just over 50% of the schools were providing focused professional development opportunities about math. The suggestion of having a standards-aligned, Tier 1 curricula is not enough by itself. Teachers also need to be engaging in the continuous learning to build their capacity and practice in school improvement efforts.

Focused professional learning opportunities on mathematics allows time for collective work on practice (Ghousseini et al., 2022). Finally, I find the 20% of schools not using a Tier 1, standard aligned math curriculum but, instead, using district created curriculums and or supplemental material in math instruction very troubling. A Tier 1,

standards aligned curriculum has better-defined grade level content, and is geared to ensure that students have exposure and mastery of the standards that they need to have as they move through school. All too often, district created curriculums are geared toward what is comfortable to staff and what has always been done. Another reason why district created curriculum is problematic is that without someone to monitor and keep district created curriculum on track, it falls apart. Even a purchased curriculum requires close monitoring of instructional practices and fidelity of implementation. I will now discuss math professional learning opportunities.

Math Professional Learning Opportunities

As I described in my literature review, research findings demonstrate solid evidence that providing professional development for teachers on math curricula implementation will likely improve student achievement. Additional factors include the utilization of math coaches and the importance of administrators understanding how to identify strong math teacher applicants during the hiring process.

When analyzing the professional learning opportunities in these schools, 37 schools indicated that professional learning opportunities occurred focused on the Tier 1 math curriculum, and 64 schools focused on instructional practices in mathematics. Twenty-seven of these schools provided professional development opportunities on both Tier 1 math curriculum and instructional practices. In contrast, 44 (37%) schools indicated no professional development opportunities occurred on mathematics for their teachers.

Although this study did not analyze the direct impact of the intentional focused professional development vs non-focused professional development on the math

curriculum or instructional practices, there is evidence in this research to support further research in this area. This research brushed the surface of the relationship between student achievement and teacher content knowledge (Woodard et al., 2020). An example of this would be to investigate implementation of math curriculum, which would include fidelity of teacher practices, ongoing support to teachers, and the correlation to student achievement.

According to Darling-Hammond and Bransford (2008), it is essential for teachers to have math content knowledge (Darling-Hammond et al., 2008). For teachers, the knowledge of students is directly connected to the knowledge of content and the knowledge of a student's mathematical practices (Sheppard & Wieman, 2020).

In conclusion, the fact remains that elementary education teachers are not experts in one content area because they facilitate four main content areas which include math, English language arts, social studies, and science. Therefore, professional development in mathematics curriculum and instructional practices is a critical step that sometimes gets overlooked. To positively impact school improvement practices in the lowest performing schools, protected time needs to be set aside to allow teachers to work collectively towards a common goal. The example based on this research would be to have a collective focus on math curriculum, its alignment both vertically and horizontally, as well as ensuring the fidelity of implementation. Protected time to do this work can take place during institute days, early releases or late starts, common planning times, or after school. Another school improvement practice would be for teachers to conduct peer observations during math instruction. So much can be taken away in these peer

observations because it gives teachers the opportunity to learn from each other, with the aim of improving teaching practices and gaining new ideas.

Confounding Variables

Some potential confounding variables that may have unintentionally impacted this research include how the survey was completed. Some entries were duplicitous, and some entries did not match the identified Tier 1 Math Curriculum. Another confounding variable was not systematically practicing the completion of the survey in advance to ensure entry was common amongst all those entering data.

Recommendations for School Improvement Practices

Given the ever-changing priorities that our teachers and leaders face each day, it's not surprising that schools may lose sight of where they are trying to get to with school improvement efforts.

When looking at the policy level, guidance should be developed to assist Local Education Agencies (LEAs) with school improvement efforts. Most specifically to build the capacity of leaders who need to coordinate school improvement efforts. Based on this research, guidance in conducting vertical and horizontal alignment conversations would allow leaders to facilitate curricular conversations while modeling essential school improvement practices to teachers. There should also be ongoing support from the State Education Agency (SEA) to help schools monitor school improvement efforts and coach leaders along the way. The monitoring and coaching would help narrow the focus on building the capacity of adults and shed light on unintentional gaps in the school.

So, what does this mean for retaining principals in the lowest performing schools? Once a school is identified as needing improvement, schools and districts leaders must

determine what needs to be done to better serve all students. This begins first with a systematic process for understanding the underlying school causes of underperformance. According to the Illinois State Board of Education (ISBE), this then leads to planning for school improvement; selecting evidence-based practices and interventions; implementing and monitoring effectiveness of the plan; and examining, reflecting and adjusting the course of the school improvement plan (ISBE, 2021b). This process needs to be clear and well supported so that school systems can act proactively to provide the necessary supports to their teachers in this systematic change surrounding school improvement.

Continued Considerations

As we continue to support school improvement in our schools, some potential studies could include examining the following studies.

- Completing the same study with the upcoming designation of the comprehensive schools and include Chicago Public Schools.
- Completing the same study with a focus on English Language Arts.
- Investigating the implementation and type of math curriculum used in comprehensive schools.
- Investigating the impact of family and community engagement with the lowest 5% of schools in the state.
- Looking at the impact of superintendent turnover and school improvement.
- Investigating culturally responsive curriculum, culturally responsive leadership, culturally responsive parent engagement, and culturally responsive teachers.

Conclusion

The findings in this research have significance beyond measurement of which schools are comprehensive (lowest-performing) or targeted (underperforming) in the state. Challenges and barriers will continue to present themselves in various ways, However, having ongoing conversations about best practices in school improvement in our schools, will help develop the foundation for the building the capacity of school leaders to implement and sustain effective school improvement practices. This research contributes to the gaps in literature that do not address vertical and horizontal alignment of math curricula.

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APPENDIX A: TIMETABLE

Dissertation Proposal Defense - May 2022

Data Collection and Analysis – May 2022 – July 2022

Dissertation Defense- October 2022

Revisions Completed – October 2022

Final Copies Filed – November 2022

Graduation, Degree Completion – December 2022

APPENDIX B: TERMINOLOGY

Accountability – The process by which educators are held responsible for performance or outcomes. These expectations can be set at the classroom, school, district, state, and/or federal level.

Achievement Data – These data tell us what students have learned. These include classroom-level, benchmark, interim, and formative assessment data, as well as summative data, such as standardized test scores from annual district and state testing.

Action Plan – A formalized plan for achieving an objective that includes strategies, activities, timelines, resources, roles, and responsibilities.

Annual Meaningful Differentiation - ESSA requires all states to implement a system of Annual Meaningful Differentiation (AMD) to differentiate overall performance and quality of all public elementary and secondary schools. The purpose is to identify the state’s lowest and underperforming schools and prioritize funding accordingly.

Annual Summative Designation - A school’s annual summative designation describes how well an individual school is meeting the needs of all its students. The designations recognize schools with strong overall performance across a range of academic and student success indicators. Schools with greatest need receive the most support. IL has four summative designations: Exemplary School, Commendable School, Targeted School, and Comprehensive School.

Assessment – Methods and instruments used to collect data and evaluate student performance. To capture a complete and accurate picture of student achievement, multiple data sources are strongly recommended.

Assessment (Balanced Assessment System) – A rigorous and fair system of measuring student achievement growth using summative, interim, and formative assessments.

Assessment (Formative) – Assessment to measure learning that occurs concurrently with instruction and is used to provide specific feedback to teachers and students for the purpose of adjusting instruction.

Assessment (Interim) – Assessments given periodically throughout the school year that provide information to educators about student learning. Examples include grade-level/course assessments.

Assessment (Summative) – Assessment to measure learning that summarizes what students have learned at the conclusion of an instructional segment. Examples include unit tests, final exams, and culminating projects. State assessments are considered summative assessments.

Behavioral Expectations – Expectations for appropriate behavior that have been defined, taught, and modeled.

Benchmark - “Benchmark” when used as a noun means “a standard by which something can be measured or judged.” As a verb, it means “to measure according to a specified standard to compare and improve student outcomes.”

Benchmark Assessments – Are given periodically (e.g., at the end of every quarter, three times a year, or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Collaborative Team – A group of individuals who share common objectives, tasks, resources, responsibilities, and leadership. The main purpose of a collaborative team in schools and districts is to improve teaching practices to increase student achievement.

Comprehensive Support and Improvement Schools (CSI) - A school that has been identified by its State Education Agency as 1) one of the lowest 5 percent of Title I schools in the state, or 2) a high school with a graduation rate below 67 percent.

Continuous Improvement – A process by which staff engages in collaborative inquiry, focused on implementing, assessing, monitoring, adjusting, and evaluating to increase student achievement.

Culturally Responsive – Using the diverse cultural knowledge, prior experiences, and performance styles of students to make learning more appropriate and effective for them by teaching to and through the strengths of students.

Curriculum - Standards-aligned Tier 1 core instructional materials.

Data – Captured information organized for analysis or used to make decisions. Types of data include student achievement/outcome, perception, process, and demographic data.

Data Analysis Process – The process of studying data, including looking for patterns and trends, for the purpose of making decisions.

Data-Based Decision-Making - The practice of using an institution's past performance information by reviewing, utilizing, and evaluating available data to make operational and academic decisions.

Data-Driven Culture – The processes and decisions within a building or district are driven and supported by data.

Demographic Data – Data that provides descriptive information about the school community. Examples may include enrollment, attendance, grade level, race/ethnicity, gender, students with disabilities, English Learners, socio-economic status, graduation rate, suspensions/expulsions, etc.

Developmentally Appropriate – A desirable feature of programs, curriculum, materials, and instruction that suits the ages, performance levels, and needs of students.

District Leadership – Leaders at central office, including, but not limited to, superintendents, assistant superintendents, business directors, special education directors, curriculum directors, intervention coordinators, and parent/community coordinators, who provide support across schools in a district; also includes school-level leaders who are assigned district responsibilities as described above.

District Leadership Team (DLT) - A team of individuals who promote a culture of common expectations or commitment by maintaining a districtwide focus on high achievement for all students, including all student subgroups.

Equitable and Inclusive – Providing all students with access to appropriate curriculum and learning opportunities.

Every Student Succeeds Act (ESSA) – The federal K-12 education law of the United States. ESSA, which was signed into law in 2015, and replaced No Child Left Behind. ESSA extended more flexibility to states in education and laid out expectations of transparency for parents and communities.

ESSA Conference - The Annual ESSA Conference serves Illinois educators who seek high-level professional development in line with current federal and state education priorities. The Illinois State Board of Education and other educational associations have a major role in the development of the conference agenda. The program includes keynote speakers, concurrent sessions, workshops, and meetings focused on high-quality instruction, continuous improvement, and engagement of schools with parents and others in the community.

Evaluation – Collecting, analyzing, and using information to answer questions about programs and practices, particularly about their effectiveness and efficiency in producing an intended effect. Evaluation includes the analysis of adult implementation and student achievement results.

Evidence-Based – Educational research or metrics pertaining to school, teacher, and/or student performance used to inform decisions related to school improvement.

Evidence Based Funding (EBF) - EBF is the formula that Illinois uses to allocate school funding. The EBF formula replaced General State Aid; Special Education – Personnel; Special Education – Funding for Children Requiring Special Education Services; and Special Education – Summer School and English Learner Education.

Evidence Tiers - *The ESSA Tiers of Evidence Framework* provides districts and schools with a guide for determining which programs, practices, strategies, and interventions work in which contexts and for which student.

External Evaluator – An outside organization hired by ISBE to 1) measure the progress of Local Education Agencies and their schools for improving student outcomes and exiting improvement status, and 2) measure the statewide performance of IL-EMPOWER.

Fidelity – The accurate and consistent provision or delivery of instruction in the way it was designed or prescribed according to research findings and/ or developers' specifications. Five common aspects of fidelity include adherence, exposure, program differentiation, student responsiveness, and quality of delivery.

Grant Term – Defines the up-to four-year term of the IL-EMPOWER grant program. The grant term and improvement status begin concurrently with an initial summative designation of Comprehensive or Targeted and continue through the remaining part of the year in the planning phase of the grant and are followed by three consecutive years of implementation. Grant funding and improvement status continue for up to 4 years regardless of changes in annual summative designations.

Planning Phase - Year 1 after a school receives either a CSI or Targeted Support and Improvement School (TSI) designation where schools and districts work to create the school improvement plan to be implemented in Years 2, 3, and 4.

Implementation Phase – Years 2, 3, and 4 after a school receives either a CSI or TSI designation where schools and districts work to implement the school improvement plan created during the Year 1 planning phase.

Implementation Phase - Years 1, 2, and 3 after a school receives either a CSI or TSI designation where schools and districts work to implement the School Improvement Plan created during the planning phase.

Illinois Quality Framework (IQF) – A framework that sets out a series of standards and indicators that represent research findings about school performance. The guiding principle of the framework is to provide educational equity, meaning that all students are provided the educational rigor, the unique academic and social-emotional supports, and the resources they need to succeed.

Illinois Quality Framework Supporting Rubric (IQFSR) – Companion document to the Illinois Quality Framework that breaks each standard into scaled performance levels. The rubric is used as the initial, school-level needs assessment for all schools except Chicago Public Schools. It helps leaders collect and analyze performance data and identify local needs.

Illinois Report Card (RC) - An annual report released by the Illinois State Board of Education that shows how the state -- and each school and district -- are progressing on a wide range of educational goals

Illinois State Board of Education (ISBE) – Administers public education in the State of Illinois. The State Board consists of nine members who are appointed by the Governor with the consent of the Senate. The Board sets educational policies and guidelines for public and private schools, preschool through Grade 12.

Illinois State Board of Education Web Application Security (IWAS) - A password-protected portal that allows ISBE internal and external clients the ability to access systems developed by ISBE.

Improvement Status – Defines the up-to four-year term that runs concurrently with the IL-EMPOWER grant program. Status begins with an initial summative designation of Comprehensive or Targeted and continues through the remaining part of the year in the planning phase of the grant and is followed by three consecutive years of implementation. Improvement status and grant funding continue for up to four years regardless of changes in annual summative designations because IL-EMPOWER is structured to support local efforts over a substantial period of time (i.e., 4 years). Scaffolded support of sufficient size

and longevity is a fundamental tenet of Illinois' Statewide System of Support designed to empower LEAs to effectively implement selected school improvement strategies.

Instructional Leadership Team (ILT) – The primary mechanism for implementing distributive leadership within a school, expanding the impact of the vision and goals for student outcomes beyond the principal to other stakeholders. The ILT is responsible for ensuring that the vision and goals for the school are well established

Instructional Staff – All staff in a school who have the responsibility of providing and supporting instruction to students, including, but not limited to, teachers, interventionists, paraprofessionals, and administrators.

Job-Embedded – Learning that occurs while teachers and administrators engage in daily work. They learn by doing, reflect on their experiences, and have shared dialogue about their insights with their colleagues (grade-level meetings, team meetings, staff meetings, professional learning communities, etc.).

Learning Community - A place where critical inquiry and discussion is practiced by collegial partners who share a common vision and engage in shared decision-making.

Learning Partner – An organization that works with a school to provide services and supports aligned to its School Improvement Plan and to address the needs identified by the school's needs assessment conducted in Year 1 of designation.

Approved Learning Partner – High-quality organizations approved to contract with the state and school districts based on their abilities to offer specialized services to schools and their demonstrated expertise in supporting improvement efforts to Comprehensive and Targeted schools.

Local Education Agency (LEA) – A public Board of Education or other public authority legally constituted within a state for either administrative control or direction of, or to perform service functions for, public elementary or secondary schools in a city, county, township, school district, or other political subdivision of a state.

Measurable Objective – A statement of a desired outcome that is student-focused, linked to a particular goal and content area, and states who will be able to do what, by when, as measured by what.

Multi-Tiered Systems of Support (MTSS) – A framework for continuous improvement that is systemic, prevention-focused, and data-informed, providing a coherent continuum of supports responsive to meet the needs of ALL learners.

Non-Academic Data – Information about students and schools that helps create a context for understanding student academic/learning data. Non-academic data includes attendance, retention, dropout, suspensions, expulsions, graduation, involvement in extracurricular activities, free/reduced-price lunch, etc.

Planning Phase - The timeframe after a school receives either a CSI or Targeted Support and Improvement School (TSI) designation where schools and districts work to create the School Improvement Plan to be implemented in Years 1, 2, and 3.

Process Data – Information about the practices and procedures schools use to plan, deliver, and monitor curriculum, instruction, and assessment

Professional Learning Community (PLC) – An ongoing process in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve better results for the students they serve. PLCs operate under the assumption that the key to improve learning for students is continuous job-embedded learning for educators.

Progress Monitor - Monitoring involves regularly collecting and analyzing data to track progress against targets and goals. Progress monitoring can help identify whether an intervention is meeting interim goals and milestones and suggests ways the intervention could be changed for continuous improvement.

Quarterly Expenditure Report (QER) - A financial document submitted and approved by the grantee that reflects the funds utilized by the grantee by function and object for a specified period.

Root Cause Analysis – A systematic process for identifying the underlying causes of an incident so that the most effective solutions can be identified and implemented.

School Excellence Framework (SEF) - An improvement framework used in Chicago Public Schools that is parallel and aligned with the Illinois Quality Framework. The SEF is used as the initial, school-level needs assessment to help leaders collect and analyze performance data and identify local needs. It includes three dimensions (or standards) of improvement: • Leadership and Structure for Continuous Improvement; • Depth and Breadth of Student Learning and Quality Teaching; and • Quality and Character of School Life.

State Education Agency (SEA) – The Illinois State Board of Education is a State Education Agency.

School Improvement – A continuous, collaborative process through which staff/stakeholders identify strengths and weaknesses of the entire school program and use the information as a basis for making deliberate, positive, cohesive, and observable changes in measurable student outcomes.

School Improvement Framework – A set of strands, standards, and indicators that describe a high-performing school.

School Improvement Plan (SIP) – A tool for creating and managing change. This written plan identifies student performance goals based on data, measurable objectives, instructional strategies, and the activities needed for readiness, implementation, monitoring, and evaluation of the strategies.

School Leaders – Staff who are recognized as carrying out leadership activity focused on school improvement and student learning. This leadership includes the formal leader(s) of a school (e.g., principal, assistant principal, headmaster). It also includes shared or distributed leadership across all staff in a school.

School Leadership Team (SLT) – A group of school-level staff and stakeholders from the community whose focus is to develop, implement, monitor, and evaluate the School Improvement Plan.

School-Level Needs Assessment – Initial needs assessment conducted at the facilitation of an ISBE contractor after summative designation. Completed during the planning phase and prior to completion of the first School Improvement Plan.

SMART Goals - A goal is much more than simply saying that you want to learn about and/or improve on something; rather, it more specifically describes what you want to achieve. A goal should be specific, measurable, achievable, relevant, and timebound (SMART). SMART goals, with their detailed structure, provide focus as well as a clear idea of what you want to achieve. This structure makes it easier to (1) plan relevant action steps/activities, (2) measure progress toward achieving the goal, and (3) know when you have met your goal.

Staff – Adults who support school improvement and student learning at the school level. Staff includes, but is not limited to, administrators, teachers, support staff, paraprofessionals, interventionists, academic support staff (e.g., counselors, therapists, media specialists, social workers, etc.).

Stakeholder – For school improvement purposes, stakeholders are defined as having an interest in the actions of a district or school. Stakeholders may include students, staff, families/parents, community members, and partnering agencies.

Stakeholder Advisory Group (SAG) - The SAG is a group of all stakeholders impacted by the success of the school community. Typically, a SAG would include representation from teachers, students, school leaders, parents, local business, and community members.

State Education Agency – The Illinois State Board of Education is a State Education Agency.

State Fiscal Year - In Illinois, the state fiscal year begins on July 1 and ends on June 30.

Statewide System of Support – ISBE’s coordinated effort to provide resources to support effective school improvement practices in Illinois public schools; to assist LEA efforts to improve outcomes for all students in schools with comprehensive or targeted summative designations; and to help the state’s lowest performing and underperforming schools exit improvement status.

Student Group - Any student demographic group with at least 20 students worth of data in at least 5 out of the 8 scored indicators, one of which must be a school quality and student success indicator (e.g., chronic absenteeism).

Supplant - State or federal funds that are received and expended to replace funds the grantee would have expended in the absence of state or federal funds.

Supplement - State or federal funds that are received and expended in addition to funds the grantee would have expended in the absence of state or federal funds.

Targeted Support and Improvement Schools (TSI) – Any schools with one or more consistently underperforming subgroups within the state.

Vertical and Horizontal Articulation of Curriculum - Vertical and horizontal articulation of curriculum amongst teachers provides an opportunity to identify gaps that students are having in their learning based on the learning standards. This practice helps teachers implement effective instructional practices.

Vertical Articulation – facilitates content specific collaborative conversations amongst teachers across grade level bands (e.g., 1st and 2nd grade teachers meet to discuss English language arts, pre-algebra and algebra teachers meet).

Horizontal Articulation – facilitates content specific collaborative conversations amongst teachers at the same grade level or course (e.g., two biology teachers teaching the same course).

APPENDIX C: DATA SURVEY

1. Name of IL-EMPOWER Coordinator
2. Name of K-8 School
3. Provide the name of the Math Tier 1 core curriculum aligned to the Illinois Learning Standards. (Please provide the name of the curriculum; if a Tier 1 curriculum is not being used at all - type none; if supplemental resources are being used for Tier 1, type supplemental)
4. Is vertical articulation occurring for Math?
5. Is horizontal articulation occurring for Math? (If grade-specific, then include which grades are having horizontal articulation conversations on Math in the OTHER option)
6. In the past year, what professional learning opportunities have teachers had for Math? (if OTHER, please write in the type of PD provided) (PD=intentional structured time dedicated to the development of _____; can be provided in house OR by a learning partner)