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THREE CONFIGURATIONS OF SCHOOL-UNIVERSITY PARTNERSHIPS: AN EXPLORATORY STUDY

This paper presents an array of structural configurations that invite new consideration of the necessary conditions for developing systemic school reform; first by reviewing the current literature, and then by examining thirty-six existing partnerships as structural configurations, an exploratory typology for the analysis of successful school-university partnerships is developed. The basis for three models is derived from Mintzberg's five-part framework adapted for schools and universities. The paper concludes by noting the strengths and weaknesses of the three models, and suggests areas for inquiry, no matter the model chosen for a school-university partnership.

School-university partnerships have attracted much attention in recent decades. Many who review this literature note a common theme. Writers frequently make the case for building stronger working relationships between schools and universities, but a coherent and commonly accepted framework for understanding partnerships remains elusive. Clark (1988) calls attention to an array of terms to describe partnerships—networks, collaborations, consortiums, clusters, interorganizational agreements (IOAs), collectives, cooperatives—and notes that "different terms are used to describe similar activities, and on the other hand, different meanings are attached to the same term" (p. 33). In a major review of the literature, Clifford and Millar (2008) write, "Our analysis suggests that the reviewed literature presents a substantial amount of ambiguity about how partnerships are defined" (p. 13). A team of evaluators and researchers from the Center for the Study of Education Policy (CSEP) at Illinois State University have confronted many of these ambiguities during the past seven years working with school-university partners throughout Illinois. As a senior member of the CSEP Improving Teacher Quality (ITQ) team, I join these authors and others who seek greater clarity about the complex set of roles and relationships connecting schools and universities in joint agreements recognized as partnerships. This paper explores new ways to understand the character and nature of school-university relationships. I describe briefly the evolution of my thinking about the structural complexity of partnerships. In this exploratory study I also present a conceptual framework adapted from Henry Mintzberg for studying various school-university configurations as well as supporting evidence from three case studies. The application of Mintzberg's well-known framework enables the CSEP team to explore 36 partnerships as distinct structural arrangements from 2004 to the present. The three case studies are developed in greater detail and depth in this issue of *Planning*

and Changing and provide extended examples of partnership structures in particular contexts and situations. The research methodology for this exploration of partnerships is developed in the article.

Knowledge Available and Knowledge Needed (KAKN): How to Develop "Authentic Sustainable Partnerships"

The ITQ project began in 2004 as the result of an evaluation audit at the Illinois Board of Higher Education (IBHE). A new administrative process that linked evaluation and the grant-funding cycle, provided site-based support, and convened grant partners in annual symposia was developed and inaugurated with the ITQ grants. In the early days of ITQ, the CSEP Evaluation and Support Team met to plan the first symposium. This symposium brought together participants from 26 newly formed ITQ school-university partnerships funded by IBHE. Staff members at IBHE outlined their expectations for this symposium. Their agenda for the IBHE Symposium included the following goal: "To support the development of authentic sustainable partnerships that share the goal of improving education for all students in the state." I had the assignment to study the school-university partnership literature and design focus group sessions that would help school and university leaders address the task of developing "authentic sustainable partnerships" capable of "improving education for all students." I also began my quest to find literature that could help shape a new generation of school-university partnerships in Illinois that promised greater learning opportunities for teachers and students.

The literature search quickly led to an appreciation for John Goodlad's longstanding record as a leading advocate of school-university partnerships. He published a series of articles and books about regional and national collaboratives for nearly fifty years (Goodlad & Jordon, 1950; Sirotnik & Goodlad, 1988). Goodlad's visionary perspective is complemented by numerous small scale case studies of a college or university that established a successful partnership with a nearby school district that needed assistance on some aspect of school improvement, in-service teacher training, or strengthening town-gown relations (Maeroff, Usdan, & Callan, 2001; Firestone & Fisler, 2002). The publication of *Tomorrow's Schools* by the Holmes Group (1990) sharply increased interest in professional development schools. I soon discovered that the literature is overwhelming; I struggled to synthesize various theories and empirical findings that could produce guidance on developing robust and sustainable partnerships in Illinois.

My first effort to make sense of the literature involved the creation of a two-page handout that presented a cluster of eight attributes frequently identified with successful partnerships. At the June 2004 Symposium for IBHE school-university partners, I introduced the eight topics and invited focus group participants to criticize the list and consider additional topics that are essential for understanding successful partnerships. My list closely

matches similar lists found in the literature. The eight attributes on the original list can be clustered as the following actions: (a) finding a clear focus on the common purpose of teacher and student learning; (b) avoiding top-down arrangements in favor of greater mutuality; (c) developing boundary spanning roles that assure continuity and sustain commitment; (d) creating a climate of mutual accountability for all partners; (e) fostering trustworthy relationships between and among all actors; and (f) making sound plans for critical support of key resources—fiscal, space, and personnel (Peel, Peel, & Baker, 2002; Ohio State University, 2007). This collection of topics provoked thoughtful discussion in the focus groups about lessons learned from successful partnerships. Many of the participants had years of experience in various partnerships, and they validated the importance of issues raised by these topics. But stimulating dialogue in focus groups does not yield a coherent framework for gaining needed insight on the structural arrangements that bring schools and universities together to pursue common goals. In fact, the focus groups took the CSEP team in the opposite direction; they added additional topics to my original laundry list.

The list proved to be a dead-end. A list of topics determined to be essential for successful partnerships does not lead to a coherent framework for understanding the organizational structures that connect schools and universities in collaborative endeavors. The search for knowledge available and knowledge needed (KAKN) would continue for the CSEP team. In 2007 IBHE issued a new RFP (Request for Proposals) to fund another set of school-university partnerships. At this time staff members at IBHE also saw the need for new criteria to evaluate the strengths and weaknesses of ITQ partnerships. Some members of the IBHE staff were convinced that professional development schools represented the gold standard for the ideal school-university relationship. They determined that the best term to represent this standard was "collaboration." They released a white paper, "Understanding Collaboration" (IBHE, 2007), which borrows many of its ideas from the writings of Rebecca Gajda (2004) and others (Frey, Lohmeier, Lee, & Tollefson, 2006). Gajda sees collaboration as a term that applies to "any relationship between two entities, whether it is between two people to host a bake sale, five multinational corporations that seek to combine into a single organizational unit, or three high schools who look to make schools safer" (2004, p. 68). The CSEP team reviewed the white paper and various writings in the collaboration literature.

Gajda's collaboration theory is used to construct a one-dimensional continuum that evaluates levels of integration between and among partners. Lower levels of integration are constructed as networking, cooperation, and coordination. Collaboration, on the other hand, "is identified as the most highly developed level of integration" (p. 69). Gajda's collaborative theory is highly attractive because it can be applied to multiple settings for groups or individuals inside organizations as well as settings between organizations such as schools and universities. She also developed a strategic alliance for-

mative assessment rubric (SAFAR) to be used by evaluation teams working with various business firms and non-profit agencies. Space does not allow a critique of Gajda's highly attractive model, which seems to solve many of the problems the CSEP team addresses in ITQ partnerships. In some situations, collaborative theory and the SAFAR rubric may prove highly beneficial, but it did not seem appropriate or sufficient for many of the critical problems found in the formation and development of Illinois school-university partnerships that CSEP encountered during its site visits and conversations with ITQ project directors and evaluators.

In 2007 IBHE (2007) staff began to consider new ways to envision and promote school-university partnerships in ways that made Gajda's framework appealing. First, a one-dimensional collaboration continuum is envisioned. Second, professional development schools are stipulated to be "the far end of the collaboration continuum" (p. 9). The CSEP team recognized the appeal for a relatively simple scale that could place all school-university partnerships on a continuum. The team further recognized the appeal of professional development schools as an ideal model for school-university collaboration. But our familiarity with the complexities of partnerships created serious concerns about the capacity of any single dimensional construct that claims to measure degrees of integration about inter-personal, intra-organizational, and inter-organizational relationships. While words like networking, cooperation, coordination, and collaboration can be used for inter-personal and inter-organizational relationships, this one-dimensional scale fails to take account of a whole of host of critical factors found in school-university partnerships.

A key challenge for the CSEP team was the construction of various models of collaboration that may or may not fall along an imaginary continuum. It was time to return to basic questions about structures found in schools and universities. What are the basic structures of schools and universities? How do these structures function in a school-university partnership? These questions led the CSEP team to the writings of Henry Mintzberg and his five part framework that will be presented in greater detail in this paper.

Limits of Global Terms in the Study of School-University Partnerships

As the team pondered various aspects of school-university partnerships, we arrived at a central question: How do schools and universities in these ITQ partnerships design and execute relationships that serve common educational interests? We realized that this question cannot be answered using global terms that claim to capture the complexity of multiple interactions taking place among numerous participants who meet to carry out the work of the partnership.

The terms *partner* and *partnership* are words commonly used to

describe people who have chosen to work together (e.g., law or business partners). For the past several decades these words have become metaphors borrowed by policymakers and educators to define a special kind of inter-organizational relationship between schools (almost always a public school or school district) and universities. The language is poetic and provides a positive image of a cooperative arrangement among equals that advances the interests of all concerned. But a study of the literature among school-university partnerships during the past half century suggests that the rhetoric for productive collaboration often seems to exceed the promised results. We argue that part of the problem lies with vague and confusing terminology that somehow assumes that if two people can work out a successful partnership, then surely social entities such as a school district and a university can do the same.

Authors sometimes describe school-university relationships with terms like *mutual trust, collaboration,* and *simultaneous renewal* (Sirotnik & Goodlad, 1988; Osguthorpe, Harris & Black, 1995; Gajda, 2004; Stephens & Bolt, 2004; Burton & Greher, 2007). These words have intuitive appeal because they are similar to personal virtues that everyone can approve. We see value in strong school-university relationships, but global language does not offer insight or clarity about what is actually happening in the ongoing relationships among people who must negotiate their differences, allocate resources, set goals, coordinate tasks, measure outcomes, and revise plans that did not work out as originally anticipated. We see school-university partnerships as complex and multi-dimensional settings requiring careful scrutiny of the many roles and relationships that bring the two institutions together.

We explore the complexity of school-university partnerships by studying structural arrangements that describe positions and roles that educators occupy as they come together in joint endeavors. There are three points of inquiry in the search for school-university partnership organizational arrangements: (a) schools/districts; (b) universities/colleges; and (c) the joint entity recognized as the partnership. This joint entity (the partnership) is almost always a small piece of the school district and the university. In some cases a few dozen people are involved in a partnership that represents thousands of professional educators in the two respective institutions.

We recognize that there are many types of school-university partnerships that have flourished during the past half century. This study does not pretend to cover the full range of partnerships found in the United States or other nations. Rather, we limit our field of inquiry to the partnerships that have been part of the work of the IBHE-ITQ program during the past seven years. The IBHE-ITQ partnerships focus primarily on in-service professional development of teachers and other P-12 staff and school improvement projects about some aspect of curriculum, instruction, and assessment, mostly in Science, Technology, Engineering, and Math (STEM) for these partnerships. Other aspects of school reform that receive secondary treatment are educational improvements in universities

and attempts to create new leadership structures in schools.

The first step in studying the structure of ITQ partnerships was to examine the RFP that was sent to colleges and universities. The federal guidelines and the IBHE refinements in the RFP, then as now, are based on some basic assumptions about universities and schools that set the conditions for a formal relationship worthy of government support. The first assumption is about "Improving Teacher Quality." The phrase suggests that deficits exist in local schools, and that there is a need to further develop the knowledge and skills of teachers and administrators who have underperforming students. The second assumption is that universities have expertise to provide needed on-the-job training for P-12 educators. These assumptions create an asymmetrical relationship between P-12 educators with certain deficits and university experts who can address these deficits.

Images of "partners" and "partnership" often assume egalitarian norms, and we affirm these values. Clearly, there is an imperative for mutual respect and high regard for the contributions of all participants in the partnership. It is also important to create working environments in which P-12 educators can teach university trainers new insights about the complex work of educating young people. Both partners have valuable knowledge and skills to share as they learn together. The ITQ partnerships are not intended to be simple top-down delivery systems, but equalitarian norms for professionals doing various tasks should not conceal the fundamental asymmetry of the ITQ agenda. These partnerships rest on a clearly defined premise about school reform: Expertise found in universities can be used to improve the quality of work performed by educators in schools. ITQ grants establish a special relationship between university educators who are the primary experts and P-12 educators who learn to use this expertise in their daily work. Ideally, the transfer of expertise from the university to the school will lead to greater learning opportunities for both teachers and their students.

Structural Properties of Schools and Universities: Adapting Mintzberg's Framework

For the past century, scholars have been examining the structural properties of all kinds of organizations, from private corporations to government bureaucracies. Much attention has also been given to the organizational analysis of schools and universities. One of the most creative and illuminating scholars in this field is Henry Mintzberg. We have adapted his classic framework of five basic parts of an organization—(a) strategic apex; (b) middle line; (c) technical operating core; (d) technostructure; and (e) support system—to analyze school-university partnerships. (Mintzberg, 1983, 1989). Figure 1 represents Mintzberg's basic five-part framework applied to schools and districts, colleges, and universities.

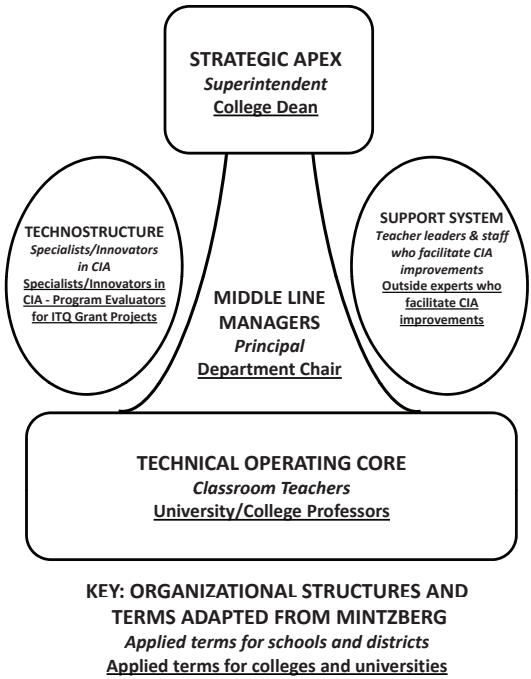

Figure 1. Mintzberg's 5-part framework adapted for schools and universities

The five parts of Mintzberg's framework represent structures and functions that work together in endless combinations in organizations that range in size from a small grocery store to Wal-Mart. In small organizations, many parts are combined into one consolidated position. For example, a grocer with two part-time workers shrinks the strategic apex, middle line, and operational core into one simple line of authority and operations. The grocer also manages the functions of the technostructure and support system from the same consolidated position—owner, manager, operator, technician, and supporter of part-time help. Wal-Mart, on the other hand, has a cluster of positions and roles associated with each of the five parts. In Mintzberg's framework, parts are structures and functions—not people. The five parts do not require five different persons.

According to Mintzberg, an organization's technical system has an operational core to transform inputs into outputs. In schools and universities, the technical core deals with the educational tasks of curriculum, instruction, and assessment (CIA) which are carried out in classrooms at the lowest levels of line authority. This is the essential work of college professors and school teachers. Managers in the middle line (e.g., principals, department heads, and partnership liaison facilitators) coordinate tasks and allocate resources under the leadership of executives (e.g., district superintendents and college deans) who are at the strategic apex. For the purposes

of this study, we adapt Mintzberg's model by presenting line authority in universities and schools as a three-level system: top level executives, middle level managers, and operatives of the technical core.

The technostructure includes the expert work of specialists and innovators who improve instruction, curriculum, and assessment. Positions in the technostructure include researchers and specialists who create new curricular materials, design new instructional strategies, and develop new assessment instruments. In both school district and university, specialists carry out such tasks as collecting and analyzing test data, critically selecting innovations that claim to improve curriculum, instruction, and assessment, and studying the technical requirements found in various federal and state mandates for school reform. The tasks of the technostructure take place outside the classrooms of the university and the school. This work is reserved for specialists who are attempting to keep abreast of new developments that promise greater learning achievement for students.

The expertise of the technical specialists is intended to improve the performance of teachers in the school's technical core (classrooms). But this expertise does not flow automatically to teachers as a newly minted "best practice." Teachers need more than technical training about new instructional techniques and better curricular materials. Another critical component is needed: a support system that provides consultation and feedback to local educators (teachers and administrators) who are expected to master new innovations that promise significant improvement. In the past two decades many reform programs have included support personnel who work on-site to provide needed follow-through and assistance to anxious teachers who are expected to change their teaching routines. New roles supported by grant funds have been created—such as "site coordinators," "instructional coaches," and "project facilitators"—to assure continuity between initial training sessions and the day-to-day experiences of teachers who must use the new classroom practices with confidence and a sense of efficacy.

Roles and work responsibilities of the technostructure and the support system are in the middle zone of Mintzberg's framework. These are not tasks performed at the strategic apex or in the operating core. Superintendents and classroom teachers do not spend their time each day preoccupied with the latest technical advancements in math education or new technologies of assessment for special education students. Superintendents are too busy with "big picture" strategic issues that keep the district in good standing with the community and the state. In like fashion, teachers working at the operating core are concerned with the "little picture" immediacy of helping 27 students learn their math skills for the next classroom test.

School improvement will take more than a principal who is a skilled middle manager. A more complex middle zone is needed that includes two critical roles: (a) specialists with technical assistance and (b) support staff who can facilitate meaningful changes resulting in learning for both teachers and students. Unfortunately, school improvement has

often been implemented without consideration of the human resources needed for all three parts of the middle zone. Principals are expected to continue to perform their management functions and take on the additional roles of technical experts and support staff. This appears easy and obvious to outsiders who redefine the principal as an "instructional leader" without full consideration of what that means. For principals inside the schools, it is a constant juggling act in a three ring circus.

Mintzberg's framework moves the understanding of schools and universities beyond conventional organizational charts with simplified distinctions between "line positions" and "staff positions." His framework starts with the technical core (CIA) and crucial acts of teaching, learning, and monitoring results. The focus now is on classroom teachers and the capacity of the technical core to enhance learning opportunities for students. School improvement is about the enhancement of the technical operating core (Baker et al., 2007; Vogel, 2010). The improvement of teacher quality through ITQ is directly related to the enhancement of the core.

Mintzberg's five part framework opens up several points of inquiry about ITQ partnerships. The first topic concerns the technical core. How does the partnership address critical issues of curriculum, instruction, and assessment? How are these core elements interrelated as a new set of tools to improve student learning? What was the status quo condition of the school at the time the project started? How has the grant brought needed changes in the school? Is the technical core owned and controlled by individual teachers in privatized and isolated classrooms? Or is the core common property for instructional teams or collaborative groups of university and school participants? These questions redefine improvement in teacher quality (ITQ) as more than the individualized attributes of solo practitioners in the classroom.

Other topics of inquiry include consideration of the other parts of Mintzberg's framework. The concept of partners is now broken down into a cluster of specific positions and roles occupied by persons representing schools and universities. What is the position of the executives who represent their respective organizations? What is the role of middle managers in this partnership? The two other structures in the middle zone also need to be identified. Who represents the technostructure, and what kinds of technical tasks are being conducted in the project? Has the support system been identified as an area of responsibility with specific people and specific duties? If no, is it because partners assume that continuous support is not needed? If yes, what kinds of facilitation roles have been created by the university and the school? Are the support positions temporary arrangements that will evaporate when the grant money ends? These questions and many more give specificity to studying the structural arrangements that connect schools and universities.

Applying Mintzberg to Systemic Reform in an Emerging P-20 Illinois System

During the past decade hundreds of school-university partnerships have been formed by NCLB-ITQ funds to advance the academic achievements of low performing, high needs schools. The IBHE-ITQ grant program attempts to break new ground by proposing additional guidelines that require professional development activities to become sustainable commitments that continue after the grant funds expire. University leaders are also expected to use knowledge gained in the field to make improvements for both schools and universities. In 2008, this ambitious goal was set for Illinois ITQ partnerships with the publication of the *Illinois Public Agenda for College and Career Success.* Within this new IBHE (2008) strategic plan, "Improving Teacher Quality Grant projects…serve to advance the Board's policy agenda of strengthening P-20 educational opportunities and collaboration across the entire state educational system" (p. 115).

The ITQ partners are expected to go beyond the simple tasks of inservice training of teachers and principals. They must work together on a much more ambitious collaborative agenda: design and implement systemic improvements in schools and simultaneously improve the quality of education in the universities. Few policymakers or educators can disagree with the visionary aspirations of the IBHE policy agenda. Many state leaders are currently working on a P-20 system for Illinois. But the question remains: How will ITQ partnerships reach new standards of systemic reform set by the state? We respond to this question with a brief comment on systemic reform and a typology of structural configurations of school-university partnerships we have studied in recent years. This paper presents an array of structural configurations that invite new considerations of the necessary conditions for developing systemic school reform. Before these configurations are presented we offer a brief summary of current ideas about systemic school improvement.

Systemic school improvement rests on a synthesis of scholarship conducted during the past three decades by imminent scholars and researchers (Bryk, Rollow, & Pinnell, 1996; Bryk & Schneider, 2002; Cohen & Hill, 2001; Elmore, 2004, 2008; Fullan, Hill, & Crevola, 2006; Smylie & Evans, 2006; Marzano, 2003; Newmann, King, & Youngs, 2000; Newmann, Smith, Allensworth, & Bryk, 2001; Bryk, Sebring, Kerbrow, Rollow, & Easton, 1998; Payne, 2008; Sebring & Bryk, 2000; Senge, 1990, 2000). These authors and others have helped to shape a new understanding of school improvement as a complex learning-centered enterprise that incorporates strong internal relationships as well as external supports (Baker et al., 2007). The systemic development of a learning-centered school avoids the simplistic strategy of improving isolated programs in the naïve hope that a collection of partial solutions will be sufficient (Fullan, 2010).

Systemic school improvement is not the narrow agenda of adopting the latest instructional techniques that claim superiority as "best practices." Systemic improvement is deeper and more complex. School leaders are expected to address an integrated set of critical tasks that include the following key components: (a) enhancement of the technical core; (b) coherent and embedded professional development; (c) internal networks of collegial support; and (d) external networks of reciprocal support from parents and other stakeholders. These collaborative work environments must be designed as open systems that undergo continuous review as school leaders monitor outcomes and develop sustainable arrangements that assure ongoing adaptations (Fullan, 2005). Some reformers define these organizational arrangements that bring educators together to work on highly complex tasks in a spirit of open and critical reflection as professional learning communities (DuFour, Eaker, & DuFour, 2005; McLaughlin & Talbert, 2006; Wenger, McDermott, & Snyder, 2002). The systemic approach is not a prescriptive formula or a linear plan for quick success. There are no quick fixes. Advocates of systemic improvement are not naïve about the challenges that confront school reformers (Payne, 2008; Smylie & Evans, 2006). The exploratory typology we offer here is one effort to look at partnerships as structural configurations capable of distinguishing systemic approaches.

Structural Configurations of ITQ Partnerships: An Exploratory Typology

An analysis of ITQ partnerships suggests that there are numerous strategies for organizing relationships among educators who represent the university and the school. We have used Mintzberg's framework to identify three structural configurations that are presented as "pure types" (McKinney, 1967). In our study of 36 school-university partnerships during the past seven years, we have identified multiple ITQ partnerships that have adopted the salient features found in each of these three types. We recognize unique features in many partnerships that are more complex than the graphic presentation of Mintzberg's model can offer. The three partnership configurations in the typology are: (a) s*ingle-tier;* (b) m*ulti-tier;* and (c) c*omplex-brokered.* We consider each below.

The Single-Tier Partnership Configuration

The first configuration is the most simple and straightforward. It is a single-tier partnership in which university professors work directly with classroom teachers in the school (see Figure 2). The partnership is formed at the lowest levels of Mintzberg's pyramid, operative to operative as professors work with teachers. The responsibility for technical expertise is kept at the classroom level by professors who claim sufficient understanding of cur-

riculum, instruction, and assessment to make needed improvements in P-12 classrooms. In successful partnerships, teachers are receptive to these claims and are willing to work with the professors in areas of needed improvement. Executives and middle managers sometimes provide material resources, but they have minimal involvement in planning, implementing, and evaluating the project. Schools are defined as an aggregation of classrooms, and the primary target for university trainers is the classroom teacher. It is all about improving classroom instruction; little consideration is given to the school or school-wide educational improvements.

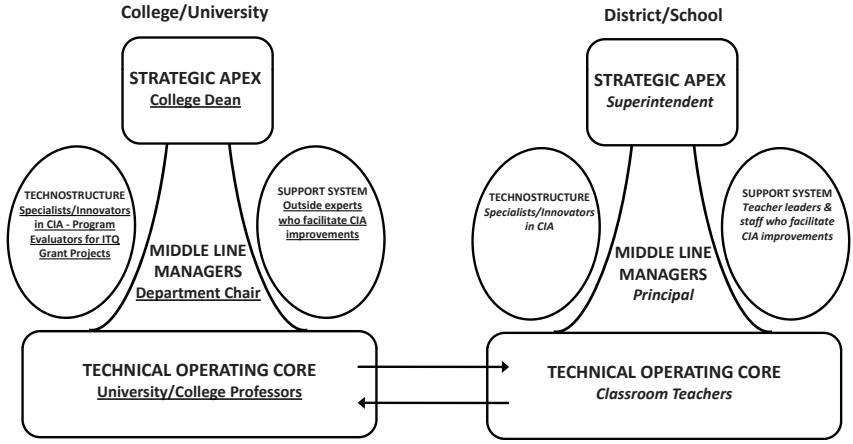

Figure 2. Single-Tier Partnership: Professors-to-Teachers Configuration

Some of the longest standing single-tier ITQ partnerships were launched many years ago. Sometimes the partnerships consist of professors who continue to work with former students who live in the geographical region of the university. Through the support of the grant these former students return as classroom teachers eager to establish an ongoing professional relationship that is of genuine value. Training sessions occur in many formats (e.g., summer workshops and university courses). Follow-up consultations occur through on-site visits to the school, weekend or evening consultations at the university, e-mail, web-based, and telephone communications. These relationships of training and follow-up consultations extend for the full cycle of grant support, typically three years. If grants are renewed, then these professor-teacher partnerships are extended for additional years.

One of the most successful single-tier partnerships in Illinois is the Hands-On Science program at Southern Illinois University-Edwardsville. Professor Sadegh Khazaeli began to work with high school science teachers under the auspices of the Title II Eisenhower professional development state grants. In recent years this collaborative project has been further developed and expanded with support from the IBHE-ITQ program,

adding Professor Eric Voss as co-director. According to project records, in the past three years 200 high school chemistry teachers, 105 high school physics teachers, and 143 middle school teachers from 55 public schools and 13 private schools have enrolled in professional development workshops at SIU-E funded by the [ITQ] NCLB program. This extensive network of middle and high school teachers has the potential to reach 60,000 students. The Hands-On Science program is highly focused; Professors Khazaeli and Voss and their colleagues work directly with school teachers to increase their content knowledge of the sciences (i.e., biology, chemistry, earth and environmental sciences, and physics) and their pedagogical skills in the classroom and laboratory. This project is explored in greater detail in this volume in the case study, "Improving Science Instruction in Southwestern Illinois and Metro East St. Louis: Students Learning Science through a Sustained Network of Teachers" (Voss, Khazaeli, Eder, Gardner, 2011).

For many years the SIU-E project focused exclusively on the classroom teacher, but more recently looked beyond the classroom for a more systemic approach. Principals are now consulted about the quality of the science program in their schools, and they are asked to examine such critical issues as the adequacy of science laboratories and the quality of the curricular resources. A regional board has also been formed for leadership, planning, monitoring progress, and improving outcomes. These accommodations are initial steps towards developing a multi-tier partnership configuration that addresses the mid-level structures of the partnership, discussed below.

The Multi-Tier Partnership Configuration

The second type of partnership is more complex. The multi-tier partnership involves active participation by many actors at various levels of authority and decision-making (see Figure 3). Professors and teachers are still involved, but many others have joined the partnership. The focus has shifted away from primary interest in the classroom to a more complex consideration of both the classroom and the whole school, or perhaps a network of schools. The instructional program typically addresses a curricular area that includes several grade levels (e.g., a mathematics program for elementary schools; the infusion of new technologies in middle schools science programs; or the formation of leadership teams addressing instructional improvement). Sometimes the P-12 partners include district officers with clear ideas about professional development and expected best practices in the schools. Greater interest from the district quickly translates into new responsibilities for the principal. In the proposals of ITQ grants, leaders of multi-level partnerships often describe a strong link between professional development and school improvement planning. This linkage, however, is relatively easy to write about, but very challenging to actually implement. Program facilitators and coaches from the uni-

versity often spend time in schools working with instructional teams (e.g., grade level teams; interdisciplinary teams; freshman academies; and departments) and consulting with the principal and other school leaders.

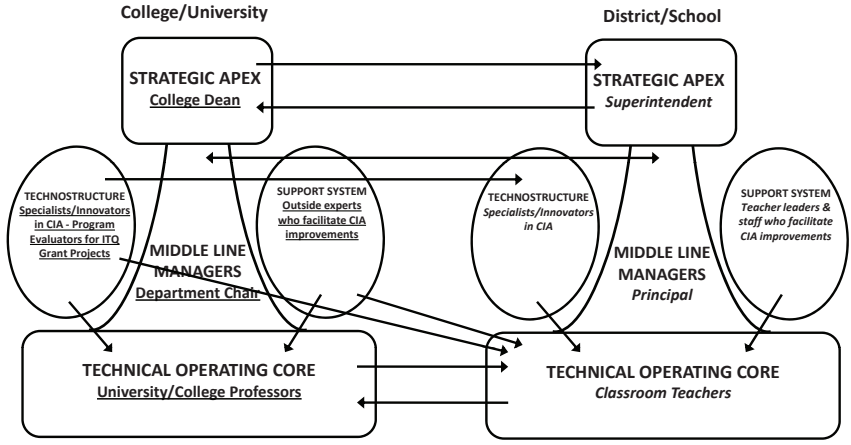

Figure 3. Multi-Tier Partnership: Coordinated Arrangements among Groups

The most elaborate multi-tier partnership we have studied in the IBHE-ITQ projects is an outreach program in elementary math and science found at the University of Chicago. The Center for Elementary Mathematics and Science Education (CEMSE) is the hub organizational unit for most of the ITQ professional development work. But this unit is also tightly embedded in a network of internal agencies at U of C, and it works closely with the University's two charter schools—North Kenwood Oakland and Donoghue—and seven partner schools from the Chicago Public School system. The University of Chicago does not have a College of Education or a Department of Education, yet it has established a comprehensive educational program entitled the Urban Education Institute (UEI) with a strong mandate to develop a robust partnership with the Chicago Public Schools (CPS). UEI works closely with the University's teacher preparation program—Urban Teacher Education Program (UTEP), the Charter Schools, the Consortium for Chicago School Reform (CCSR), and CEMSE. All of these internal partners are also connected to an external network that includes CPS agencies such as Area 14, the instructional support office proximal to the university, and the Office of Mathematics and Science (OMS). At the outset of the IBHE-ITQ grant the University of Chicago leaders established two goals for their project: (a) to serve teachers and students in local schools by improving curriculum, instruction, and assessment in mathematics and science, and (b) to further develop their newly emerging multi-tiered system. University leaders were fully aware that they were both inventing new structures for a long-term CPS partnership and providing immediate assistance to local educators working in Chicago neighborhood schools. Debbie Leslie's account

of these two goals in this issue "Seeking Symmetry in School-University Partnership: University of Chicago and Chicago Public Schools—A Collaborative Approach to Developing Models and Tools" provides ample evidence of the challenges facing educators who build new systems of collaboration in unchartered waters (Leslie, 2011).

A hybrid of the single-tier and the multi-tier configuration is an arrangement in which a university professor (or small group of professors) works with teachers, principals, and district administrators to carry out relatively complex tasks at all three levels of the P-12 system. On various occasions these professors are working in classrooms with individual teachers, in school improvement sessions with the principal and others, and consulting with the superintendent about various district level agendas of school reform. In this hybrid configuration the university professor claims a wide range of expertise that applies to several functions found in Mintzberg's model. But these professors do not consult with administrators or other staff at the university. They work as solo practitioners who work in many settings in the P-12 world of school improvements and educational change. The third and final partnership configuration shares elements with this hybrid, but the expertise intended to enhance the technical core does not emanate from the university partner. This is the complex-brokered partnership configuration.

The Complex Brokered Partnership Configuration

In the first two configurations (and the hybrid configuration) the expertise for professional development is located squarely inside the university. But in the third type—the complex-brokered partnership—university leaders go outside their institutions to hire experts who bring their expertise to both university and P-12 educators. The complex-brokered configuration begins with university leaders who select specialists with state of the art knowledge about best practices. In these partnerships executives and middle managers in the university hire outside experts to enhance the technical core of P-12 schools. A wide variety of arrangements are used to employ the services of outside experts. In some cases the hired scholar or reformer might come for a brief series of formal presentations. In other cases, the outsider assumes a special role of trainer for a series of workshops and consultations that occur throughout the three year cycle of the ITQ grant. In either case, the expertise essential for the improvement of teacher quality is brokered from an external source.

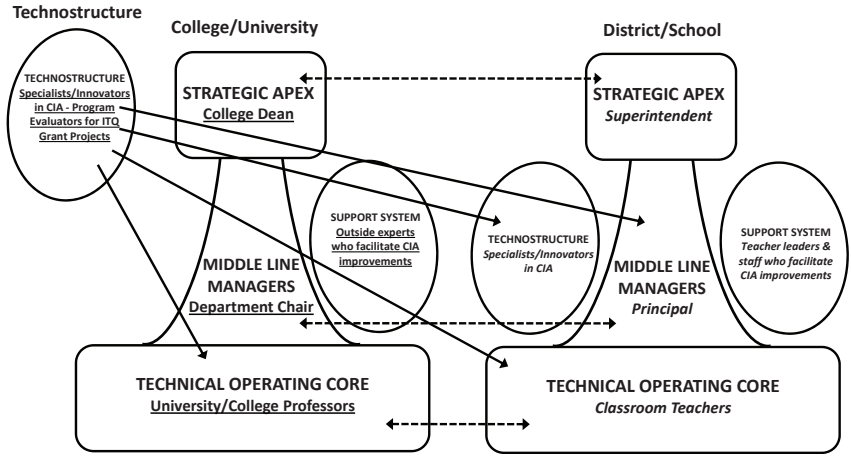

Figure 4. Complex Brokered Partnership: External Experts in Ad Hoc Arrangements

It is relatively easy to plan these partnerships with external funds from IBHE and outside experts who gladly come for a fee to deliver the latest knowledge about instructional improvement. Developing and coordinating ongoing tasks that assure an impact on classrooms and schools is another matter. This challenge is especially acute for outside speakers who come for large audience "sit and get" training sessions. Basic questions face leaders who broker 60-minute Power Point presentations. Who will assume responsibility for cultivating and sustaining further interest in developing the latest ideas that were just presented? How will the "next steps" be designed and executed to enable local implementation of the "best practices" that were given center stage for one or two days? The expert has spoken, but how is local expertise developed inside the universities and inside the schools and school districts? Some partners in the Illinois ITQ projects have struggled to find answers to these questions.

Complex-brokered partnerships face serious problems in creating structures that assure sustainability and ongoing commitment from local educators. In 2007 Southern Illinois University-Carbondale (SIUC) submitted a proposal—*Rural Access to Mathematics Professional Development* (RAMPD)—that was a prototypical brokered partnership. The Assistant Dean of the College of Education and the Superintendent of the Carbondale Elementary School District had designed a professional development program in mathematics. But the Assistant Dean could not locate a professor from SIUC willing to serve as the principal trainer in mathematics. While the Assistant Dean provided leadership in coordinating many aspects of the project, the key role of providing new expertise about the pedagogical content knowledge in elementary mathematics was filled by an outsider—a retired professor from another university who had no affiliation with SIUC.

The project began with some real concerns about the accessibility and sustainability of the outside trainer. These concerns proved to be unfounded. In fact, the outside expert had retired to a nearby city and was eagerly interested in spending a great deal of time with SIUC staff as well as educators in the schools participating in the RAMPD program. Unlike some other brokered partnerships funded by IBHE-ITQ, the interest and enthusiasm for the professional development opportunities grew with each year for the vast majority of the teachers who joined the project. The complexity of this brokered arrangement is presented in this issue of *Planning and Changing* in a case study co-authored with RAMPD math coach Jennifer Prusaczyk, "Structural Configurations and Implementation Processes and Improving Teacher Quality in Southern Illinois: Rural Access to Mathematics Professional Development" (Prusaczyk & Baker, 2011).

The Three Configurations: Other Partners and the Emerging Multi-Tier Model

The three configurations derived from Mintzberg's framework are necessarily simplifications of real world arrangements. For example, no mention has been given to other partners that often join the school-university partnership. The state has a system of Regional Offices of Education (ROE's) that provide professional development programs to schools in their respective regions. Many university partners work with the Chicago Public Schools, which have various specialized curricular departments and area offices that supervise and support an array of improvement programs. Other university partners extend their collaborative networks to private foundations, professional development schools, and consortia of private colleges. Another aspect of oversimplification is the graphic presentation of the "district/school" as a single entity. Several partnerships are more loosely constructed than this image would suggest. The university might be reaching out to a wide network of schools, and districts with varying degrees of commitment to the professional development program in each of the schools (and districts). In the same partnership, the variability can range from a single teacher in a school to more than a dozen teachers and administrators who work together as a team in another school.

We see the three typologies as heuristic tools (McKinney, 1967) to be used as guides to further examine the complexities of structural configurations found in school-university partnerships. In October 2008 at a symposium convening ITQ partners, a position paper on the three types was sent to all participants prior to the symposium for study. We then examined various issues raised by Mintzberg's framework and the three configurations. The 2008 focus groups were most productive. Many partners were able to identify crucial features of their partnership that deserved critical reflection. It became apparent to some participants that there were serious limitations in the single-tier and complex-brokered types. Most of the participants recognized

the need to move toward multi-tiered arrangements, but numerous challenges and complexities were mentioned in the effort to develop more elaborate and sustainable connections between various functions and roles in the university and the schools. These complex challenges offer no easy answers.

Conclusion and Lingering Questions

The ITQ school-university partnership program is part of the No Child Left Behind (NCLB) reform which passed with near unanimity in Congress and was signed by George W. Bush in 2001. Like many of the policy initiatives in NCLB, the ideas of ITQ partnerships pass the common sense test of rational policymaking that should be relatively straightforward and doable by state agencies, school districts, and universities. American universities are among the best in the world. They have leading experts in every imaginable field of study, including the technical knowledge needed to improve the public schools. Low performing schools in high needs communities desperately need access to these world class experts. Given the abundance of human resources in the university and the ongoing struggles in P-12 schools, it makes good sense to create partnerships between these two institutions. The IBHE-ITQ proposals were often quite elaborate, but the critical issues of partnership can be stated as two stipulated conditions that must be met: (a) the university must design a credible professional development program that improves teacher quality and (b) leaders in the school districts must verify their receptivity (and that of their teachers) to the expert guidance and training from the university's faculty and staff members. Our study of 36 school-university partnerships indicates that meeting these two conditions can occur under a range of structural configurations.

On the surface the ITQ program looks like a sound investment in successful school-university partnerships that yield high returns on school betterment. A closer look at school-university partnerships suggests that efforts to bring schools and universities together in a productive and stable relationship are much more complex than policymakers imagine. This paper has looked at one aspect of this complexity: the structural arrangements that bring university and P-12 educators together to develop a common agenda for school improvement. We have explored this complexity by adapting Mintzberg's structural framework and constructing three configurations of school-university collaboration under conditions of grant-funding. In the study of Illinois school-university partnerships, several ITQ projects exist for each of the configurations. Each configuration raises serious challenges for partners who attempt to move the reform agenda beyond improving the quality of isolated classroom teachers.

The IBHE-ITQ program is about improving teacher quality, but this objective must also incorporate the larger goal of systemic school improvement. None of the three structural configurations offer a guaranteed formula for the unfinished agenda of connecting ITQ to systemic school

improvement. But the single-tier configuration often addresses educational reform as the improvement of one classroom at a time. We have ample evidence in our field studies of teachers (and their students) benefitting from single-tier partnerships, but we also see little meaningful change occurring in some of the schools where other teachers seem not to benefit from the improvements of their colleagues. We also know the complex-brokered partnerships generate temporary interest in innovation that seems difficult to sustain. It is increasingly clear to the CSEP Evaluation and Support Team that context-sensitive configurations of multi-tier partnerships are needed to develop and sustain professional development programs that can lead to systemic school reform.

One of the most important topics for further study is the role of principals in working with university and district leaders in the coordination of professional development commitments that offer promise of systemic school reform. In this explorative study, we have not addressed this important topic, and our preliminary findings from fieldwork indicate that there are no easy answers.

The most important aspect of the Mintzberg framework and the various configurations that typify several Illinois ITQ partnerships is the identification of the university's claim of expertise that can somehow be transferred to K–12 settings in such a manner as to generate serious and credible improvements for both teachers and cohesive groups of teachers. However simple or complex the structural arrangements of the school-university partnership, the partners are expected to enhance the technical core of the local school. Improving teacher quality and strengthening the technical core are integrally related. The central question for all structural configurations is the same: Has the ITQ partnership enhanced the school's technical operating core (CIA)? This question requires rigorous inquiry about the technical expertise the university is offering to the schools and the receptivity of school leaders and teachers to take advantage of the professional development opportunities that promise to "make a difference" in the instructional practices of the school. The basic question about the core enhancement of schools generates a list of new questions worth asking. What was the status of the CIA in the school prior to the ITQ partnership? What evidence exists that the technical capacity of the school has improved? Where does the technical expertise originate, and how does it move to its final point of impact with teachers and students? How do middle managers coordinate the efforts of specialists in the technostructure and facilitators in the support system? What evidence exists that connects increased technical capacity to greater student learning? These questions are intended to open new ways to think about the structures of school-university partnerships designed to advance the common agenda of improving teacher quality and increasing student learning.

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