Interventions/Outcomes Involving Providing Classroom Release Time for Teacher Leaders


Springfield’s mathematics teacher leaders, curriculum leaders and superintendent decided in the fall of 1997 to adopt TERC’s Investigations to strengthen their district’s elementary mathematics program and align the elementary curriculum with the district’s previously implemented standards-based middle school mathematics curriculum. Until 1998-99, this school district’s elementary school teachers were given considerable autonomy over their classrooms’ mathematical content and instructional practice. The mathematics curriculums specialists advocated for the use of Marilyn Burns’ replacement units (Correspondence, June 1999) but teachers only requirement was to cover a given number of topics by the end of the school year with whatever text materials they wanted to use. In the fall of 1997 this district, which has a reputation for strong academic achievement, received disappointingly low test scores on the state’s new mathematical assessment of student learning, otherwise known as the WASL. To improve their test scores, the superintendent mandated that the whole district move to one coherent mathematics curricular program that reflected the state’s Essential Academic Learning Requirements (EALRs). The Springfield district employed teacher leaders at each school to support elementary teachers during the implementation of TERC’s Investigations. In 1998, the district created teacher leadership teams in order to provide staff development in a cost efficient manner and get important information about the curriculum to the teachers. Three teacher leaders and their principal from each school participated in professional development programs offered over the course of the academic school year. Teacher leaders were chosen by their principals or volunteered for the position. Each teacher represented a K-1, 2-3, or 4-5 grade cluster.

The school district also provided optional summer and after school workshops for all the elementary school teachers. Attendance at these workshops is by choice and teachers received reimbursement pay for their time. However, the district required that teachers spend 28 hours participating in compensated professional development programs each academic school year, so many teachers use these mathematics workshop opportunities to fulfill the district’s professional development requirements. For those elementary school teachers who do not attend these mathematics workshops, the main avenue for staff development on TERC’s Investigations was through their teacher leaders or at the all day grade level mathematics staff development meetings offered twice a year. According to the curriculum specialists at Springfield district, teacher leaders were seen as communicators between district leaders and classroom teachers. They were also seen as facilitators of in-house professional development experiences related to TERC’s Investigations material.

**Teacher Leaders Providing Administrative Support**
Providing administrative support for classroom teachers was the predominant role teacher leaders employed. Teacher leaders gathered and organized manipulative materials and curriculum texts for teachers, and they collected assessment pieces from each curriculum unit for the district’s executive directors. They also gathered other needed supplies such as Lieberman, Saxl, and Miles (1988) found in their study.
One potential district-level remedy for decreasing teacher isolation and improving support is establishing mechanisms for teacher leaders to network across schools, share their experiences and collectively develop their personal and professional efficacy in their roles. A recent early years literacy project within the Toronto District School Board in Toronto, Canada presents an interesting case study of an effort to provide teacher leaders with opportunities to connect with peers to support their own school-level implementation of the reform initiative. Teacher leader networking was initiated during the third year of the Early Years Literacy Project (EYLP) when the Project’s Management Team began to acknowledge a disturbing trend in teacher leader retention. There was one key factor that appeared to lead to teacher leader retention: informal networking.

At the time of this research, the Toronto District School Board (TDSB) was the fourth largest school District in North America, educating over 200,000 elementary students in its 451 elementary schools. Some 41% of TDSB elementary students speak English as their second, or third, language. The EYLP targets kindergarten to grade three classrooms. During data collection for this research, the fourth year of implementation, 93 schools were in the project.

**Literacy Coordinators**
At the beginning of the initiative, the decision was made to fund a half-time teacher leader, the Literacy Coordinator, within each school. These in-school teacher leaders work with teachers to support the development of their literacy teaching expertise. Throughout all 93 schools, Literacy Coordinators provide in-school needs-based professional development to all teachers. As such, LCs act as in-school literacy experts providing professional development to their peers via coaching, modeling of teaching strategies, and maintaining their school’s EYLP library. Most Literacy Coordinators work in regular classes or positions within the schools in the afternoons.

**LC Networks**
EYLP leadership mandates that each Literacy Coordinator participate in a cross-school LC network. The project had managed to maintain the flexible parameters of the informal LC Networks by allowing LCs to select membership in existing LC networks of their choice or create new LC Networks. Within the new more formalized system, LC Networks were to meet once a month, at a time and location of their own choosing and set their own agenda and structure.

**Methodology**
In support of sample selection, the Project leadership provided us with a list of all active LC Networks, from which we randomly selected two of the eight active LC Networks to participate in our research study.
In the first phase of our research we engaged all 15 members of LC Network A in semi-structured individual interviews. Phase 2 involved attending a regular meeting of LC Network B and observing the process, focus and structure of their session. In Phase 3, we conducted a focus group with eight members of LC Network B, exploring their perceptions of their LC Network participation and its impact on their work, professional development and engagement within the EYLP. All interviews and groups were recorded and transcribed. Analysis of the transcriptions provided the framework for the analysis we are reporting of this research.
This paper aims to explore how teacher leaders help teachers improve mathematics and science teaching. Research focused on a purposive sample of seven teacher leaders selected to vary in their time allocated to teacher leader work and their content knowledge. Each teacher leader was interviewed, as were two teachers and at least one administrator working with that teacher leader. Each interview was first subjected to a mix of deductive and inductive coding before a case study was written for each teacher leader. Teacher leaders conducted two sets of leadership tasks. The paper finds that support tasks helped teachers do their work but did not contribute to teacher learning. Developmental tasks did facilitate learning. All teacher leaders engaged in support tasks, but only four did developmental tasks as well. Teacher leaders who engaged in developmental tasks had access to one material resource and three social resources not available to other teacher leaders: time to work with teachers, administrative support, more positive relations with teachers and opportunities to work with teachers on professional development.

Methods
This study is part of a larger study of teacher leadership undertaken in the context of the implementation of the New Jersey Math Science Partnership. The New Jersey Math Science Partnership (NJ MSP) was a collaboration among two universities and 11 school districts to improve students’ achievement in mathematics and science across all grade levels. An important theme of the partnership was to strengthen organizational support of inquiry-oriented instruction. One way to do that was to conduct summer institutes for teacher leaders. In conjunction with these institutes, the NJ MSP encouraged partner districts both to integrate teacher leaders into their school improvement planning and to provide teacher leaders with the support needed to effectively sustain such improvement.

This study was conducted in a qualitative research tradition, specifically as a comparative case study using a naturalistic approach (Marshall and Rossman, 1999). Information about teacher leaders’ work and the organizational factors influencing teacher leaders’ roles was collected from teacher leaders and other informants in the setting. Interaction with these participants in their naturalistic settings helped to better understand the situational factors at play within these contexts (Spillane et al., 2001).

Sample
The population from whom the sample was taken was the group of teacher leaders who participated in the 2004 Teacher Leader Institute (TLI). Purposeful sampling (Patton, 1990) was used to select the teacher leaders who would be “information rich” in terms of this particular study, three colleagues of each, and both the district administrator and building administrator of each. The teacher leader’s description of whom he/she most closely worked with determined the persons contacted for
interviews at each level. Each teacher leader provided names of his/her colleagues, three of whom were contacted for interviews.

This study was part of a larger investigation of teacher leadership by the NJ MSP. The larger study called for selecting teacher leaders who vary on two dimensions. The first was the amount of time teacher leaders are formally released to work with their colleagues. In previous studies, release time has been a substantial influence on the success or failure of a teacher leadership initiative (Lord and Miller, 2002). Release time affected teacher leaders’ opportunity to interact with their colleagues as part of their teacher leadership work. The other dimension on which teacher leaders were sampled was their content expertise (see Table I).

Seven teacher leaders from the 11 NJ MSP school districts who participated the TLIs during the summer of 2004 were chosen for this study. Three of these seven participated in the 2003 TLI and a pilot study conducted that year; therefore, in these three cases, longitudinal data were utilized. All the teacher leaders worked with teachers in kindergarten through grade eight. Six teacher leaders came from school districts that were among the poorest in the state. Five of these districts had student bodies that were predominantly Hispanic. The seventh teacher leader came from a district that was in the middle of the state’s income distribution and was predominantly white.

In addition to the teacher leaders, information was obtained from 19 colleagues of the teacher leaders (one to three for each of the seven teacher leaders) and 13 administrators with whom the teacher leaders worked (one was the district administrator for two of the seven teacher leaders). Some colleagues and administrators whose names teacher leaders provided to the researchers did not return calls and/or e-mails requesting their participation. In addition, one teacher leader in the non-content expert/no release time category requested that the researcher not speak to her building administrator.
The present study sought to understand how a peer coach for teachers may influence teachers’ understandings and abilities to facilitate differentiated lessons for high-ability students. In the current study, the researchers sought to explore the feasibility of a peer-coaching program, with the aim of enabling teachers to enhance their knowledge and application of differentiation in a mixed ability classroom. Specifically, the research questions guiding the study were (1) “What were the mentors’ perceptions of their participation in a peer coaching program design to enhance teacher understanding of differentiation in a mixed ability classroom?” and (2) “What were the teachers’ perceptions of their participation?”

Project CLUE (Clustering Learners Unlocks Equity) is a partnership between Ball State University and Indianapolis Public Schools. [Mentoring in Project CLUE is a strategy to] meet goal three, to provide teachers with a knowledge base with regards to best instructional practices for GT (Gifted and Talented) students and differentiation strategies, mentoring relationships were created between IPS teachers and qualified peer coaches. During the spring terms of 2004, 2005, 2006, mentors conducted in-class observations with third-, fourth-, and fifth- grade teachers on three separate occasions. Groups of teachers receiving the CLUE curriculum were provided lesson plans and training on curriculum implementation. Mentors were assigned a small number of teachers from a particular group. The mentors served not only as observers but also as colleagues or peer coaches. Each mentor/teacher duo kept in touch via phone or e-mail in order to schedule visits and discuss ideas, strategies or differentiation techniques.

Teacher professional development was the primary mission of the mentoring program. The fact that the program was non-evaluative in nature was made clear to all mentors and mentored teachers. A total of 46 IPS teachers were mentored for 1 to 3 years by nine mentors. Mentors served several teachers simultaneously.

Caucasian women represented 95.2% of teachers participating, all teachers had at least 1 year of teaching experience. Mentors were recruited and selected based on affiliation with IPS schools, GT consulting experience, BSU affiliations and geographic proximity. All mentors had at least 15 years of teaching experience, ranging from 15-33 years. Each mentor received a stipend as well as travel reimbursement. Caucasian women represented 78% of mentors.

Methodology
During the spring terms of 2004, 2005, 2006 mentors conducted three in-class observations per term with each of their assigned teachers. Observations were recorded using an instrument designed specifically for this purpose: The Project CLUE Mentor Log (CML). Each pair used e-mail as a primary communication tool. A content analysis of the CML and email correspondence between teachers and mentors was conducted. The nine mentors and 46 mentored teachers were provided surveys in the spring of 2007 regarding their impressions of the program. Seven of the nine mentors returned a survey.
(response rate 78%) and 30 of 46 teachers (65%). A content analysis was conducted on the survey data. Grounded theory was the basis for analysis. An outside note packet was generated in order to code data accordingly. After the coding was complete, coded data were transcribed into an electronic format and organized into thematic categories.

This inquiry examines the personal attribute and environmental factors that contribute to and impede science teacher-leader development. Using a narrative approach, the inquiry focuses on the experiences of three teachers in three different New Zealand primary schools (Years 1-6) as they develop their capabilities as science teacher-leaders during sustained school-wide science delivery improvement projects. Bronfenbrenner’s bioecological model and Rutter’s views on resiliency are used as a foundation for interpreting the science teacher-leader development process. Teachers identify a variety of personal attribute and environmental factors and the interplay between these factors as a risk and supportive factors contributing to and impeding their development as science teacher-leaders. Teachers also identify that their development is influenced by several proximal processes that are context and time dependent.

This study focused on eight teacher leaders who participated in a professional development program for teacher leaders—the Teacher Leader Institute—presented by the New Jersey math Science Partnership (NJ MSP). The NJ MSP was a consortium of two universities and 11 school districts working together to improve student achievement in mathematics and science through a variety of means. One strategy was to strengthen leadership for change, in part by helping districts to identify and prepare teacher leaders to support other changes being supported by the MSP. TLIs were held in the summers of 2003 and 2004 with follow-up activities during the year and the following summers. Districts sent cohorts of teacher leaders to develop a vision for improved math and science instruction, improve their content knowledge, and learn how to work with their peers.

A two-person team observed the 2003 TLI for two days and interviewed 18 participants. These observations were repeated during the 2004 TLI. More important, a sample of eight teacher leaders was identified to follow during the upcoming academic year to learn about a variety of issues, including how their content knowledge influenced their work as teacher leaders. Here we briefly describe the sample, methods of data collection, and data analysis strategies.

**Sample**

A purposive sample was selected among participants in the 2004 TLI to obtain variation on two dimensions. The most important was content expertise. A *content expert* was defined to have a minimum of an undergraduate major in the teacher leader’s content area and teaching certification in that area. A non-content expert was defined to be a teacher leader without a major and certification in the content area, either mathematics or science.
The Teacher Leadership Project was started in the summer of 1997 with a core of 27 teachers from schools across the state. Initial participants developed a vision, mission, and model for creating technology-rich classrooms and integrating technology into curriculum. Since that time, program funding has increased and the project has expanded considerably, adding 185 teachers during the 1998-99 school year, and 215 more teachers during the 1999-2000 school year. An additional 1,000 grade K-12 teachers from public and private schools in Washington were selected to participate in the program for the 2000-2001 school year, and it is anticipated that 2,000 more teachers will be added over the next two years.

Each TLP grant recipient receives, through their district, $9,000 worth of hardware and software, including a laptop computer, printer, and presentation device. Computers are provided at a 4:1 student to computer ratio, and recipients receive Office software, as well as Encarta Reference and Africana, Publisher, Front Page, and access to SchoolKit. Teachers are also provided with 11 days of training over the course of their first year in the program, attending a 5-day summer session, and three 2-day sessions during the school year. Training sessions are intended to help teachers (1) develop technical skills, (2) design curriculum that utilizes technology and is aligned with the state’s Essential Academic Learning Requirements, and (3) identify leadership opportunities for sharing their knowledge and skills.

TLP participants are grouped geographically for training sessions, and each “regional” group typically consists of 25-30 teachers. Regional coordinators, each of whom is supported by several other trainers, as well as a technical support person, lead the sessions. Coordinators and trainers come from within the TLP, having participated in the program for at least a year prior to taking on this leadership position. Teachers bring their laptops to training sessions, enabling them to share materials and experiment with software during their time together. Training sessions, which are held in hotel conference rooms across the state, are intense and include instructional time (philosophy, research, curriculum design and alignment, software and skills, etc.), help desks (short sessions which are focused on specific technical issues), sharing, and goal setting. In addition to attending all training sessions, teachers also agree to participate in the evaluation of the project.

Each participant’s school district must meet certain requirements to support their TLP teachers. Most importantly, the district must (1) agree to provide release time and classroom coverage so that teachers can attend training sessions, and (2) agree to provide technical support to maintain the equipment.

**ILTs.** At the start of participating in Cohort I or II, schools were required to establish ILTs, structures through which schools would have teacher and administrator representation in identifying an instructional focus and selecting ways to address that focus through professional development and other activities. The idea was that ILT members, who ideally a) had a solid and growing understanding of the reform, and b) represented each team, cluster, department, and/or grade level, would get input from teachers on instructional issues that they would share in focused discussions at the ILT meetings. ILT meeting agendas would be shaped by teachers’ and administrators’ concerns and questions with respect to the school’s instructional focus. ILT members would have input into the reform and would shape its particular incarnation at their school. The theory posits that a school with a well-functioning ILT would be in a strong position to develop focused informal professional development programs that included collegial work groups focusing on improving instruction, for example LASW groups.

**LASW Groups.** All Cohort I schools were required to establish grade-level, team, or cluster LASW groups during the first year of reform and most were provided with at least some professional development on how to do this work. Cohort II schools were asked to implement LASW during the first year, but did not necessarily have professional development related to this component of their work. LASW is intended to help teachers use work produced by their own students to make informed decisions about their instruction. Its implementation is structured by the use of a protocol that directs teachers’ attention to a) the students’ work (rather than the students themselves), b) the standards to be addressed by the assignment, c) the quality of the students’ work considered against a rubric reflecting those standards, and d) what needs to happen next in the classroom if the work is to improve. In our July 15, 1998, evaluation report we wrote:

> The BPE has consistently made clear that they expect looking at student work (LASW) to be a central component of schools’ professional development. The purpose has also been clear: to stimulate instructional improvement by using discoveries made when looking at work to plan instruction, choose professional development, and establish annual goals. (p. 30)

The focus of this study is the concept of leadership as influence processes (Yukl, 1989). The first report of this study (Leithwood, Jantzi, Ryan & Steinbach, 1997; Ryan, 1998), describes who the peer nominated non-administrative leaders are, their leadership practices and their sources of power. This paper reports on a second analysis of the data and has two main purposes:

• The perceived impact of teacher leadership
• The conditions in the school that support or constrain teacher leadership

The findings are based on these phenomena as seen through the eyes of the peer nominated teacher leaders, their colleagues and the principal.

Qualitative research methodology, based on the interpretive paradigm (Burrell & Morgan, 1979) was used in this study of leadership. Within this paradigm was the use of the multi site case study method. The case study approach is an “intensive, holistic description and analysis of a single entity, phenomenon, or social unit” (Merriam, 1988, p.16). In this study, the unit of analysis was the school and the phenomenon was teacher leadership.

The Sample.
This study was an extension of an earlier study (See Leithwood et al., 1997) in seven secondary schools where the staff were undergoing various change initiatives as a result of current government policies and were willing to participate in various data collections. More than 400 teachers in all seven schools were asked to nominate teachers they regarded as leaders exclusive of the principal or vice principal. Nominees were rank ordered according to the number of nominations received., For the purposes of this study three schools were purposively selected from this group of six., in order to have variety n the size of the schools and the context. Each school was located in a different school district, two of which were Catholic school districts and one was a Public school district. One school was in a small, urban community, on school was located in the heart of a major urban center, and one was located in a small rural community but was the largest of the tree schools serving a widely spread area. Another reason these three schools were chosen was that there had been little change in the teaching staff since the beginning of the study therefore providing stability to the information gathered as all teacher leaders were available for interviews over the three year period of the original and this study. The schools varied in size with populations of 550 to 1600 students. The schools also varied in their student population being representative of both diverse and homogeneous student background in terms of ethnicity and socio economic status.

The top four teacher leader nominees in each school(12 in total), along with the eighteen nominators (some of whom were nominees) and the three principals were the research
subjects for this study. Of the twelve teacher leader, six were male and six were female. Ten were department head, one was an assistant department head and one was a guidance counselor who was chair of an important committee in the school. Four of those nominated as leaders were currently, or had been in the past, the school representative to the teachers’ union. Although teachers not in positions of responsibility were often mentioned, they were not among those most frequently nominated.

The principals were all male. Two of them had had terms as vice principal in the school in which they became principal.

Data Collection
For the purposes of this study, data were collected primarily through on-site interviews of the participants mentioned above., Direct observation during onsite visits, and documentation such as report, newsletters, newspaper accounts, meeting agendas., and in one case, a previous study, were collected and analyzed.

Semi-structured Interviews. An interview protocol was used to guide the interviews which provided data from three different points of view: the nominators, the nominees and the principal.

Interviews were carried out on site and were tape recorded. They lasted from 45 minutes (for nominees who had not been nominators) to an hour and a half (for teacher leaders who were also nominators and for the principals of the schools). The interviews were transcribed following each round.
The past decade has witnessed considerable efforts to improve the quality of science instruction in America’s schools, with school reformers arguing that all students should do more intellectually rigorous science work. Raised expectations for students’ academic work have increased the expectations for teachers’ instructional practice, expectations that imply substantial changes for existing classroom pedagogy. National and state standards along with new assessment systems press teachers to revise their teaching. Because of the nature and magnitude of the reforms, most teachers struggle to understand their substance and their implications for practice (Cohen, 1988; EEPA, 1990; Schifter & Fosnot, 1993; Spillane, 1999). Transforming reformers’ proposals for instruction into sustained daily practice is difficult and depends largely on local circumstances, especially school conditions that support teacher learning (Newmann & Wehlage, 1995). The challenge of going to scale and to substance with recent science reforms also depends in important measure on the local school, especially the school’s resources for leading reform of science education. Absent the mobilization of these resources in the cause of science education, recent reforms are likely to have only marginal effects on instructional practice.

Yet it is part of the folklore in education circles that science education falls through the cracks in most elementary schools, failing to make it onto schools’ innovation agendas, let alone into most classrooms. In elementary schools science is largely a fringe subject, taken up when time allows, but mostly forgotten or treated intermittently and unsystematically (McCutcheon, 1980; Smith & Neale, 1991; Stake & Easley, 1978). Our research on urban school leadership for mathematics, science, and literacy supports these impressions—science tends to get short shrift. We suspect that science is devalued in urban elementary schools for two reasons. First, teachers often believe that children from low-income families, concentrated in urban school districts are incapable of handling instruction beyond basic skills (Amony, 1981). Teachers commonly assume that these students need to master the basics—particularly mathematics and language-arts skills—before engaging in more intellectually challenging materials (Spillane, 2001). This view was pervasive among the teachers in the schools we studied. Their perspective was that a large percentage of their low-income, African American, and Latino and Latina students needed to hone their basic literacy and mathematics skills before engaging in more challenging work. Hence, mathematics and language arts occupy the bulk of the elementary school day. Second, recent policy initiatives that hold schools accountable for student performance in language arts and mathematics, especially common in large urban school districts, have accentuated the inattention to science instruction. Accountability measures create considerable instructional pressure for teachers in urban schools where the gap is great between performance goals and students’ actual performance. Bridging this gap in language arts and mathematics can exhaust schools’ resources, and subjects not targeted by accountability mechanisms, such as science fall through the cracks.
As one might expect, urban schools in our study worried less or not at all about those subjects for which no tangible rewards or sanctions existed under accountability regimes. As a result, elementary-school science teaching was left largely to teacher discretion and to resources outside the school that individual teachers might tap. Our goal in this article, however, is not to dwell on the unequal distribution of resources for leading reform across school subjects. Our central aim is to analyze the resources for leading innovation in urban elementary schools in order to understanding how resources are identified and activated in the cause of science education. More specifically, we examine how school leaders bring resources together to enhance science instruction when other subjects, by virtue of tradition and formal policy, command the bulk of the resources. We begin by outlining the theoretical frame for our research and describe our study of leadership for instruction in 13 Chicago elementary (K-8) schools. We then consider how the subject matters when it comes to resources for leading instruction in urban elementary schools by comparing resources for leadership in mathematics, science, and literacy in these schools. After describing the between-school variation in the resources for leading science education, we analyze a case of one urban elementary school that successfully identified and activated resources for leading change in science education.
A case study approach was used to examine the perspectives of three high school department chairs and their work at providing instructional supervision to the teachers in their departments: math, science, and social studies. We sought to discover the beliefs and practices of three department chairs in one high school, located in a southeastern state. From interview data, three primary findings emerged: 1) The high school department chairs experienced role conflict and ambiguity relative to providing instructional supervision; 2) the meaning of instructional supervision for the department chairs was intuitive and reflected in differentiated approaches; and 3) The constraints of instructional supervision include time and lack of emphasis. The findings indicate that the department chairs were not prepared for the practice of instructional supervision in that the participants received little instruction to enact the role of instructional supervisor, and the participants were compelled to create their own roles given the lack of direction by the principal. The participants indicated instructional supervision was not a “priority” of either system or local school administrators. The participants did evidence some important knowledge concerning instructional supervision, albeit intuitively concluded rather than formally learned.

This study examines the perspectives of three high school department chairs and their work at providing instructional supervision to the teachers within their departments: math, science, and social studies. With the chair’s prevalence in the American high school, it is logical to examine specifically the high school department chair’s role as instructional leader related to instructional supervision. Past research indicates that the department chair’s role lies somewhere between a teacher and an administrator or what Wettersten (1992) refers to as “neither fish nor fowl.”

The researchers were familiar with the school system through prior research studies regarding block scheduling and the work of the administrative team at this site. It was natural to return to Lincoln North High School to explore leadership, this time focusing on the work of the department chairs. Using a case study approach, we sought to discover the beliefs and practices of the department chairs related to instructional supervision. The sampling approach was that of convenience in that we had entrée into the site and familiarity with the context of Lincoln North High School.

Given the lack of research on high school department chairs and instructional supervision, we sought to answer the following questions:

1. What does instructional supervision mean to the department chairs?
2. What does instructional supervision look like in practice?
3. What organizational constraints get in the way of department chairs supervising teachers?
Three open-ended interviews were conducted with three department chairs in a single school to gain an “authentic understanding” of their perspectives and experiences with instructional supervision (Silverman, 1993, p. 10). In addition to interview data, artifacts such as the system policies concerning supervision, the job description for high school department chairs, and field notes were analyzed.