A Case Study of Academic Growth in Schools for the Deaf: The Convergence of Educational Policy and Organizational Theory

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Dedication

This dissertation is dedicated to my wife, Anna, and our children, Abigail and Ethan.

Abstract

In this age of educational accountability, public schools are presumed to have the innate organizational capability to meet academic achievement benchmarks. Fair or not, this presumption also extends to schools serving students who are deaf, a population whose academic achievement continues to be unsatisfactory. This dissertation investigated how schools for the deaf have organized to achieve academic growth, which is generally defined as the measure of a student's progress between two or more points in time. Three schools for the deaf that demonstrated the most evident academic growth were selected through a purposive sampling of a computer-based adaptive assessment that represented 28 schools for the deaf. Interview data were collected from the three schools using semi-structured protocols that were then analyzed using the constant comparative method. The following organizational actions were taken by these schools: (1) owning the national problem of unsatisfactory academic achievement of students who are deaf, (2) responding to the problem with an academic growth model, (3) striving for academic growth through data-driven engagement among teachers and students and (4) shifting internal resources to support academic growth. Emergent patterns of goals, data and growth each reinforced and then expanded the guiding framework of this dissertation, routinized action theory. This dissertation may provide a template for schools for the deaf and any other schools operating in a turbulent policy environment to organize toward a more satisfactory student academic achievement.

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CHAPTER ONE – Introduction

In this age of educational accountability, public schools are presumed to have the innate organizational capability to adapt to meet academic achievement benchmarks. Fair or not, this presumption also extends to schools serving students who are deaf, a population whose academic achievement generally continues to be unsatisfactory. The purpose of this dissertation was to investigate the overarching question of how schools for the deaf organize to attain academic growth. Since the youth who are deaf and hard of hearing represent less than one percent of the total K-12 population (Mitchell & Karchmer, 2006), the organizational model of schools for the deaf is an invaluable means to centralize the limited resources essential for educating the deaf. The unified model of such schools and the expertise they offer are impossible to replicate through any other education delivery models for students who are deaf. This presents schools for the deaf as an ideal model for school organizations serving low-incidence youth populations and continuing to do so despite the increasingly turbulent environment created by volatile and oftentimes polarized educational policy settings. The adaptation and alignment of limited resources and organizational actions toward academic growth are thus even more crucial for the continued viability of schools for the deaf.

School Reform and Schools for the Deaf

The *No Child Left Behind Act* of 2001 (NCLB) clearly requires that all public schools, including schools for the deaf, set educational goals, monitor and measure student progress and expect punitive measures for failure to meet any of these federal directives (Cawthon, 2007). The education of the deaf and other students with disabilities has already been under the stringent regulation of the *Individuals with Disabilities Education Act* (IDEA) and the directives of NCLB add considerably to the demands placed on schools. The IDEA safeguards a free and appropriate public education for all students with disabilities; however, the advent of NCLB has since shifted the focus on educational accessibility to an emphasis on academic accountability for all.

As successful as some schools for the deaf are, there remains the challenge of reconciling the demands of both the IDEA and the NCLB and the realities of schools for the deaf or, for that matter, any

public schools serving students with disabilities. The bureaucracy of such procedural compliance usually associated with federal mandates may isolate classroom teachers, effectively insulating them from reform (Elmore, 1986; Weick, 1976). Yet, schools for the deaf and their classroom teachers have been subject to federal scrutiny since the passage of the IDEA more than 40 years ago. This makes these particular school organizations that also serve as special education entities more attuned than many other public schools to federal regulatory mechanisms.

Unlike the top-down regulatory oversight of the NCLB, the bottom-up oversight of the IDEA, which is sustained by parents and advocates, may contribute to the resultant attunement of schools for the deaf (Hehir, 1992). This affirms the bottom-up organizational capability of schools for the deaf to comply with federal mandates; however, the top-down, punitive nature of NCLB provisions renders it even more challenging for these schools among others to comply as they contend with chronic limitations to their budgets and thus an increasingly restricted organizational capacity (Mathis, 2005; Kim & Sunderman, 2005). To illustrate, limited funding may affect the organizational knowledge of regulatory requirements for compliance with NCLB, and as a result, the academic growth in schools for the deaf (Cohn, 2005; O'Day, 2002). The general premise of the compliance-based laws for accountability such as the IDEA and the NCLB is that all schools will engage in routine procedures in order to comply with an array of requirements set forth by these laws (Wolf & Hassel, 2001). To that end, the coupling of compliance routines and expanded educational accountability can—and should—align with the theory of organizational learning.

New Theoretical Approaches in Deaf Education

Collinson, Cook and Conley (2006) characterized organizational learning as "embedding new knowledge and practices in organizational…routines" (2006, p. 19). These authors contended that school organizations like schools for the deaf have the ability to engage in such learning because they have, apparently, been learning this way since the congressional enactment of the IDEA in 1975. And although accountability imposed on schools for the deaf by both the IDEA and the NCLB may negatively affect the organizational learning of these school organizations (Morris & Moore, 2000), when such learning is

associated with accountability, schools for the deaf may be better positioned for competition in securing the resources needed to attain academic growth (Garratt, 1987). When schools for the deaf assess their own capacities to reach academic growth, for example, such organizational learning may result in hiring teachers who sign more fluently and align curricular materials to make them more visually conducive.

Schools for the deaf, like most organizations, tend to frame their organizational future through the codification of either defensive or adaptive behaviors, primarily in the form of routines (Levitt & March, 1988). Routines are the essence of organizational learning: they continue to enable schools for the deaf to develop and then implement strategies to defend themselves, adapt or more likely both (Bapuji & Crossan, 2004). The environments under which schools for the deaf operate ultimately determine the availability of resources required for the routine operational, administrative and pedagogical activities (Luo & Peng, 1999 as cited in Bapuji & Crossan, 2004), and thus the choice of a defensive or adaptive posture.

According to Sorenson and Sorenson (2001 as cited in Bapuji & Crossan, 2004), the structural bureaucracy—both the federal government and either the governing agency or board that oversees these schools—are major structural components of the environment that may greatly influence schools for the deaf and their capacity for organizational learning through adaptations in routines. Routines, whether established by external groups or generated internally in response to environments, serve an important role in maintaining the memory, the longevity and the identity of organizations like those of schools for the deaf (Cohen, 1991; Walsh & Ungson, 1991; and Levitt and March, 1988), and are thus a vital component of determining organizational learning. Nelson and Winter (1982 as cited in Pentland & Rueter, 1994) defined an organizational routine as "a collective capacity to perform recognizable patterns of action." Organizational routines undoubtedly enable schools for the deaf to maintain stability in their core mission and function to educate the deaf.

Such stability also enables governing bodies—namely the federal government and either the state educational agency and/or board—to sustain their expertise and power (Feldman & Pentland, 2003). Stability, in the form of routines, may allow these governing bodies, especially the federal government, to harness the power to change, which creates turbulence in the policy environment. This factor has created

variability within the organizational population that comprises schools for the deaf. Some of these school organizations have adapted, learned and delivered their missions in the increasingly turbulent environments created by the volatile educational policy environment.

Reciprocal legitimation occurs as schools for the deaf and their governing bodies develop agreed upon adaptations in routines, such as the hiring of teachers who sign fluently and the alignment of curricular materials for visual language learning, as an interplay of strategic choices made by these schools in response to their external environments (Hrebiniak & Joyce, 1985). This interplay relies on the leadership of schools for the deaf and their external governing bodies that dictates not only how to adapt, but also when to adapt, in response to changing policies requiring increased accountability for academic growth (Carley & Lee, 1998). This is particularly the case for schools for the deaf in the postmodern era, a period that stresses processes and relationships over structures and rules (Mitchell, 1996). To undergo an organizational adaptation to improve the education of the deaf, schools for the deaf rely on discussion at the organizational level, which requires the use of time as a resource to realize organizational efficiency (Lee & Liebenau, 1999; Bluedorn & Denhardt, 1988).

In long-standing organizations like schools for the deaf, which date back to the 19th century, leaders place a premium on the ability to remember the past, imagine the future and respond to present circumstances (Emirbayers & Mische, 1998 as cited in Feldman & Pentland, 2003). To provide stability in the education of students who are deaf, whose academic achievement continues to be unsatisfactory, the leadership of schools for the deaf must be inherently dynamic, with the capability of maintaining temporal orientations toward both the present and the future (Eisenhardt & Brown, 1998). This is especially true in the case of recent academic growth at several schools for the deaf (Cawthon, 2007), but not necessarily all other schools for the deaf or any other public schools for that matter. To that end, the schools for the deaf with academic growth assure the applicability of the sorts of temporal leadership discussed above, which in turn gives these schools the innate organizational capability to adapt in a way that ensures academic growth.

Compared to public schools with programs and services for students who are deaf, schools for the deaf, with their central control over acquiring, articulating and enhancing their core knowledge and experience bases, are entirely capable of attaining the academic growth of their students (Prahalad & Hamel, 1994 as cited in Crossan et al., 2005). These schools can adapt toward this end through measurements of changes, decisions and resources (Fiol & Lyles, 1985). Focusing on organization, or the action of organizing, to improve the academic achievement of students who are deaf, rather than on the collision of policy and pedagogy with regard to the federal government and the classroom, respectively, requires a novel approach to research in the field of deaf education. This convergence of educational policy and organizational theory may also result in new research methods, thus new perspectives in special education, educational policy and organizational studies.

New Methodological Approach and Overview

The purpose of this dissertation was to approach school accountability through the lens of organizational theory. In particular, the focus was on how organizational theory may help to explain the way in which schools serving deaf students have responded to the accountability movement. Specifically, this dissertation investigated the overarching question of how schools for the deaf organize to attain academic growth, which is generally defined as the measure of a student's progress between two or more points in time.

To that end, three schools for the deaf that demonstrated evident academic growth were selected through a purposive sampling of a computer-based adaptive assessment that represented 28 schools for the deaf. Interview data were collected in two phases from the three schools using semi-structured protocols that were then analyzed using the constant comparative method. The results identified organizational actions taken by these three schools to attain academic growth. This methodological approach employed the guiding framework of this dissertation, routinized action theory, which was reinforced and then expanded with these results.

The results of this dissertation were intended to delineate how schools for the deaf may attain academic growth through adaptations in organizational routines. To that end, this dissertation began with a

comprehensive literature review of the expanded accountability in special education, the effects of federal mandates on special education, the navigation of high-stakes accountability in deaf education, the theoretical perspectives of schools as organizations, the challenges within deaf education and the study of schools for the deaf as a case of point. The following chapter on design and methodology outlines a novel approach to identifying schools for the deaf that demonstrated academic growth and then collecting and analyzing data on how these schools organized to attain such growth. The results of this dissertation aligned with its guiding framework and offered emergent patterns of how schools for the deaf and all public schools may attain the academic growth of students who are deaf. This focus may be instrumental in addressing the very challenges that require schools for the deaf, and ultimately all public schools operating in a rapidly changing policy environment, to converge educational policy with organizational theory and thereby survive the accountability regime.

CHAPTER TWO – Literature Review

Accountability in education has been a major policy thrust affecting public schools, including those serving the deaf; it requires schools to improve academic achievement by reallocating resources to achieve the benchmarks for which they are accountable. The emphasis on accountability has a particular resonance in assessing the academic progress of students who are deaf because the overall academic achievement of these students continues to be unsatisfactory. The aim of this chapter is to approach school accountability through the lens of organizational theory. In particular, the focus will be on how organizational theory may help to explain the ways in which schools serving deaf students have responded to the accountability movement.

This review begins with an explication of how the increased governmental mandates for high-stakes accountability in special education affect educational outcomes for deaf students and other students with disabilities. An exploration of these prevalent organizational theories follows to explain how school organizations respond to turbulent environments through learning, adaptation, routinization and temporality. Finally, the review approaches schools for the deaf as a noteworthy case in point operating in volatile policy settings. All this presents the very challenges that may require schools for the deaf —and ultimately all schools—to apply organizational theory and hence survive accountability.

Expanded Accountability in Special Education

The review of the IDEA by Katsiyannis, Yell and Bradley (2001) proposed that the future of special education would transition from providing educational access to achieving academic excellence. The current political landscape stresses the academic growth of students with disabilities by means of unprecedented accountability measures such as progress monitoring programs and assessments. These accountability measures represent the culmination of efforts begun several decades ago by parents and advocacy groups to sue for a free and appropriate public education (FAPE) for students with disabilities. However, inconsistency in providing such education across the country required a federal law to ensure a more uniform educational standard for a FAPE for all students with disabilities. Modeled after the *Elementary and Secondary Education Act* (ESEA) of 1965, the resulting *Education for All Handicapped*

Children Act of 1975 established special education with federal funding and an educational bill of rights. This landmark Public Law (PL) 94-142, renamed as IDEA in 1990, increasingly strengthened the guarantee for each and every of the 6 million students with disabilities in the U.S., including students attending schools for the deaf, to receive a FAPE. Notwithstanding the guarantee, the U.S. Congress has periodically reauthorized the IDEA for funding and rulemaking, which has continually created environmental turbulence for all schools serving students with disabilities.

Turnbull's analysis (2005) expounded on the multidimensional role of the IDEA that encompasses this federal law within the domains of educational accountability, civil rights protection and welfare reform. The IDEA has continued to actively retain (and expand) this role in the form of iterative social engineering by regulating the financial, educational and civil aspects to a varying extent over the past several decades. This has undoubtedly created policy turbulence in the environment that schools must contend with as organizations. To illustrate, Turnbull provided a brief history of how the IDEA has transformed over time. Throughout its history, the IDEA managed to converge with the ESEA of 1965, the *Americans with Disabilities Act* of 1990 and a number of welfare and disability policies relating to personal responsibility and the social contract. Recently, the retention and expansion of the IDEA continues to gain traction by converging with the federal NCLB, both of which stress shared-accountability for students, parents, schools and the government. However, Turnbull concluded this analysis by stating that the long-standing emphasis on rights now gives importance and attention to responsibilities, particularly for schools that provide special education.

Yell, Shriner and Katsiyannis (2006) reviewed and analyzed the influences on, and changes of, the reauthorization of the IDEA and, hence, schools providing special education programs and services. The NCLB has required schools to improve the academic achievement of 48 million students in public schools nationwide through various incentives and measures, as well as requiring schools to submit major reports to the U.S. Congress and requiring courts and states to clarify special education provisions and change regulations, respectively. For more than 30 years, the periodic reauthorization of federal funding for the IDEA enabled Congress to amend or change this law, as was deemed necessary, every 4 or 5 years since

1975. In 1990 and the subsequent years, Congress changed the name of the law, added disability categories and specifications regarding the individualized education program (IEP), enhanced the role and responsibility of parents and stressed progress monitoring to provide access to the general education curriculum and participate in assessments. In 2001, two major reports by the titles of *A New Era: Revitalizing Special Education for Children and Their Families* and *Rethinking Special Education for a New Century* each analyzed the special education system and strongly recommended what amounted to a paradigm shift toward student achievement and, in all likelihood, organizational flexibility in schools. This undoubtedly increased the demand for schools as organizations to simultaneously monitor all these external clarifications and changes actively while maintaining internal special education programs and services, including those for the deaf.

Increased accountability for special education outcomes reviewed by McLaughlin and Thurlow (2003) showed the benefits of such accountability. These authors also contributed to the discussion of the implementation challenges at all levels, from the classroom to the statehouse. Both the IDEA and the NCLB had required every state to include students with disabilities in large-scale assessments and report results publicly. This new approach has singlehandedly shifted special education accountability from a model of procedural compliance to a model of assessing student performance and making accommodations to encourage academic proficiency. As expected, the required adaptations in policies and procedures ensured fairness in granting high school diplomas to students with disabilities. Adaptation in instruction and assessment is now inevitable because special education teachers who are trained to provide IEPs now have to align with the general education curriculum and assessment. On the other hand, general education teachers who lack a background in special education now have to cater to the individualized needs of students with disabilities. In conclusion, McLaughlin and Thurlow noted how all this still did not result in accountability toward students with disabilities but rather focused on processes at the organizational level in schools.

With regard to students with disabilities, the increased educational accountability at the federal level may very well equate to increased organizational accountability at the school level. This is the likely

result of continuing to expand the federal role in regulating the quality of special education programs and services in the classroom; quality therefore must be perceptible not only in academic but also in organizational terms. This evidently leaves schools with the challenge of first attaining organizational achievement in order to attain academic achievement. The effect of the federal role on the organizational aspects of schools is therefore undeniable.

The Effects of Federal Mandates on Special Education

Ramanthan's comparative policy analysis (2008) discussed the paradoxical public responses to the federal implementation of both the IDEA and the NCLB in the way that these laws do not concern pedagogy. This ironic situation resulted from the coupling of continued public approval of federal support for equitable educational opportunities and a simultaneous resentment of the federal government's intrusion in the classroom. Through an exhaustive review and analysis of various documents from the government, special interest groups, academia and the media, the author determined that the accountability model enacted by NCLB was not congruent with the original intention to attain academic achievement through improved capacity for instruction; rather, Ramanthan concluded that NCLB has become a means of punishing schools for their failure to meet federal mandates. Ever since the initial passage of the IDEA, this particular approach by the federal government has yet to improve the organizational capacity of schools to enhance instruction and, hence, it has failed to improve academic achievement. In summary, Ramanthan noted how the recent reauthorization of the IDEA in 2004 magnified such assertions made repeatedly by schools and states. The 2004 reauthorization may have made this not only a policy problem, but also an organizational problem caused by the federal government's failure to take into account the organizational attributes of schools.

In response to a handful of empirical studies on the perceived incongruity between the NCLB and the IDEA, Eckes and Swando (2009) used quantitative methods to examine the effect of NCLB on students with disabilities. The authors acknowledged the difficult challenges among schools in maintaining the requirements set forth by NCLB, which has required adequate yearly progress (AYP) of each public school for all four subgroups: race/ethnicity, socioeconomic status, limited English proficiency and students with

disabilities. However, NCLB has not taken into consideration the pace of learning for students with disabilities, which is likely to differ from other sub-groups. The authors found that this temporal factor imposes an undue burden in requiring grade-level proficiency of these students with cognitive, physical, and behavioral disabilities, and requires an individualized approach to educational programs and services so as to make them consistent with the mandates of the IDEA. To verify this policy paradox with the IDEA and NCLB, Eckes and Swando used large data sets from three states and used legal research techniques. Their findings confirmed that schools failed AYP primarily because of the students with disabilities subgroup. The authors also found that there were several non-judicial routes to effect changes and improvements at the organizational and systematic levels, respectively. The most promising route has been the collaboration between the U.S. Department of Education and several states to develop and implement growth models to demonstrate and maintain incremental academic progress for students with disabilities at their own pace.

The multiple-methodology analysis of Ysseldyke et al. (2004) examined how high-stakes testing both raised expectations and caused consequences for students with disabilities. In asking, "Whether or not these consequences are truly occurring for students with disabilities," Ysseldyke and his co-authors identified and summarized over 3,000 articles from major newspapers through the Lexis-Nexis electronic database. This process included identifying both positive and negative consequences of high-stakes testing that have occurred as a consequence of the recent efforts to align IEPs developed for students with disabilities with the general education curriculum, upon which every state government bases its high-stakes assessment. The report concluded that the policy intersection of the IDEA and the NCLB increased the emphasis on the academic achievement of students with disabilities—even if it did not improve accommodations for these students so that they might participate in high-stakes assessment toward a high school diploma or its equivalent. The authors stressed that accountability for instruction is paramount in ensuring the alignment of curriculum and assessment. However, this may cause unintended consequences for the school, the teacher and the student with a disability, who will usually require accommodations and in some cases modifications of the assessment, thus instruction throughout the school year.

The synthesis study of Vanerwood, McGrew and Ysseldyke (1998) highlighted the need for availability, inclusion and identification of students with disabilities in state and national data collection programs. More specifically, these authors noted the glaring omission of students who received education in schools for the deaf among other schools with a similar organizational model. This magnified the lack of understanding of student achievement within different disability groups. Data collection would help explain how special education fares in America where it has been difficult to examine the academic performance of millions of school-age students with disabilities and, hence, to justify the expenses of educating them. Justifying expenses is especially necessary given that cost-reduction strategies on such expenses have been the focus as of late; moreover, students and their parents also need to know the outcomes of the educational services being provided. The authors noted inconsistencies in educational outcome data intended for improving instruction and learning as well as what was available through the state for this purpose. The inconsistencies may be attributable to the fact that most state and national data collection programs used for policy development, for example, did not include students with disabilities. As a result, the leading national databases included only 40 to 50% of these students. Identification of students with disabilities is also problematic, if not lacking, even in those data collection programs funded by the U.S. Department of Education. These exclusions and inconsistencies tracking students with disabilities nationwide have rendered it impossible to monitor their academic progress, especially in data-driven initiatives for education reform that rely on the data collection programs in reference. More specifically, the existing accountability legislation combined with the IDEA does not address this problem.

The inconsistent and oftentimes erratic involvement of the federal government in special education causes increasingly varied policies to achieve academic excellence through either punitive or rehabilitative means. However, the hierarchical nature of the organizational process through which schools implement such policies remains intact irrespective of these means. This may, in effect, prevent the accurate accounting of all students with disabilities nationwide and prevent schools from effectively mobilizing resources toward specific policy actions. This undoubtedly exacerbates extensive organizational problems in special education, including deaf education.

Navigating High-Stakes Accountability in Deaf Education

Moores (2005) discussed the repercussions of the NCLB in the field of deaf education with regard to the IDEA. Since the passage of NCLB, most—if not all—deaf students have been subject to problematic metrics of evaluation such as the outcomes of statewide assessments, annual yearly progress and mandates for highly qualified teachers. Moores pointed out that both NCLB and the IDEA still do not address the cognitive, physical and behavioral needs of this particular student population, especially those with additional disabilities. The author asserted that this might be attributable to the political process of developing, then implementing the NCLB and the IDEA, the laws that were supposed to support all students. The author noted that, after over 200 years of autonomy that saw the founding of the first school for the deaf in America, the first and only liberal arts university for the deaf in Washington D.C., and the subsequent schools for the deaf, the field of deaf education underwent a major identity change after the passage of the IDEA under the auspices of the U.S. Department of Education. Since then, the IDEA and subsequently NCLB have been influential in amalgamating deaf education and special education and, in several respects, general education. For the 50,000 deaf students, or less than 1% of the total special education population, this has been problematic because NCLB requires 10 to 40 students per school building for a subgroup to become significant for reporting. This has effectively prevented school districts from attaining a critical mass of students who are considered deaf for the purpose of progress monitoring their academic growth, rendering it impossible for these districts to track them for accountability. The NCLB, as it is, essentially leaves deaf children behind.

Concurring with many in the field of deaf education, Steffan (2004) contended that NCLB, like other initiatives by the federal government that have affected the education of the deaf over the past three decades, has been deeply problematic. As was the case with the IDEA at its implementation over forty years ago, the field of deaf education did not anticipate the far-reaching effects that NCLB would have on students who are deaf: none of the 814 requirements set forth by NCLB concerned deaf students, yet they applied to schools for the deaf. For numerous reasons, the field of deaf education has continued to struggle with teaching deaf students how to read; still, NCLB failed to take this into account. One of many examples

is how NCLB has emphasized teaching reading through sound in all of its "essential" components; hence, test accommodations in this regard could not validate the assessments or the results. Moreover, NCLB has required students to be able to read at the third grade level, which is historically the grade level at which a large majority of deaf students graduated from high school. In sum, NCLB with its punitive model has failed to cater to the realities of engaging, educating and assessing the deaf.

Cawthon (2007) examined the positive and negative effects of the assessment requirements of NCLB on students who are deaf. Given the inherent complexities of this student population, NCLB has undoubtedly created potentially negative—and lasting—effects on this particular population of which the majority, like many special education students, have had limited communication and language development, usually due to factors beyond their control. The author acknowledged that the deaf students placed in the regular public school system apparently fared better academically; however, the reporting system that was in place for this particular placement, so prevalent in the education of the deaf these days, had yet to accurately reflect the presumed level of performance as a result of access to the general education curriculum in the supposedly least restrictive environment. This further magnified the systematic and organizational inconsistencies in implementing NCLB, especially with regard to the deaf student population. To that end, the author asserted that NCLB needed to concentrate on growth models for students with disabilities and those with academic challenges. This approach would also result in temporally sensitive accommodations such as additional time for both students and schools to attain academic proficiency for the deaf. Moreover, Cawthon argued that growth models would align with individual levels of proficiency and access to content area curriculums. This then would allow schools to gain the organizational capacity for both individualized learning and school-wide accountability for measuring the academic growth of deaf students.

Cawthon (2004) used multiple data sources to gain a better understanding of the complex implementation of the NCLB on schools for the deaf. The author designed this study in response to research questions on the participation of schools for the deaf in reporting frameworks as well as maintaining benchmarks and academic proficiency levels for students attending these schools. Based upon

NCLB, these parameters would benefit from data aggregation policies in most states; however, the author described difficulties in gathering the data needed with regard to the research questions for three specific reasons: state policies, school report cards and data availability. There should have been no unnecessary obstacles to gathering data, for schools for the deaf offer highly centralized resources and expertise to serve deaf students. These schools have also traditionally served multidimensional roles in promoting and safeguarding equitable educational opportunities for the deaf nationwide. The incompatibility of the federal government's policies with individualized special education and its inclusionary intentions with the NCLB undoubtedly illuminates the organizational challenges of educating the deaf. The comparatively heterogeneous etiology of this low-incidence population requires a wide-ranging continuum of services and programs, including residential and day schools serving only the deaf. Still, Cawthon found that some schools for the deaf recently attained adequate yearly progress benchmarks as set forth by NCLB.

This raises questions about the organizational effects (or lack thereof) of the federal special education mandates on these schools for the deaf. The lack of empirical attention to the organizational characteristics of successful schools for the deaf prompted an exploration of the prevalent organizational theories below that attempt to explain how school organizations serving the deaf might respond to turbulent policy settings.

Theoretical Perspectives of Schools as Organizations

The fundamental argument of this dissertation is that to understand how some schools for the deaf demonstrate academic growth requires an organizational perspective, especially if they are to use metrics designed for the general population. This section will cover organizational learning, adaptation, routinization and temporality, the theoretical perspectives so chosen because of their potential to illuminate the issues facing schools for the deaf as they transition to a new era, an era in which they use the same academic growth indicators as neighborhood public schools. The perspective in this dissertation is that schools for the deaf need to make fundamental changes if they are to adapt successfully to the external policy environment described above. Taken very broadly, this chapter focuses on organizational change. However, the organizational change literature does not present a unified theory, but constitutes many

different lenses for thinking about how and why change occurs. To that end, the remainder of this dissertation reviews organizational learning, adaptation, routinization and temporality, the perspectives chosen for their complementary perspectives on organizational change in schools:

- Organizational learning research attends to the ways in which groups generate and manage new information and knowledge;
- Organizational adaptation research focuses on the more subtle adjustments that are made between the group and feedback that they receive either internally or from their environment;
- Routinization research focuses on the development of strategies for maintaining stability over time; and
- The temporality perspective offers an insight into how organizations behave in relation to time as both a concept and a resource.

The extant literature on schools as organizations affirms that these perspectives are invaluable for understanding the organizational qualities of schools. Research shows that such qualities are intrinsic in many other organizations and that they can be applied to schools, including schools for the deaf, since they too are full-fledged organizations that depend on learning, routinization, adaptation and temporality. To illustrate, in order to develop a greater capacity to attain academic growth, schools learn as organizations through conscious and conscientious activities and behaviors. This shows organizational learning to be a process similar to human learning since organizational learning can also lead to improvements in thinking and acting. When a school changes its routines, for example, it may learn desirable qualities as an organization. To that end, the research on adaptation has clear applicability to school organizations, which constantly adapt routines to enhance the quality of teaching and learning for accountability purposes. Schools have always been thought of as places where organizational routines prevail via a grammar of actions (Pentland & Rueter, 1994).

Tyack and Tobin's (1994) famous complaint about the difficulty of changing the grammar of schooling still resonates today, in spite of all of the pressures for change. Like all other organizations, school organizations comprise both cognitive and behavioral activities that require implementation for

reliability and predictability in organizational activities. Although the organizational studies literature has yet to establish the apparent interaction between cognitive and behavioral activities, the implementation of organizational routines provides the requisite consistency in both the structures and the behaviors of school organizations operating on the annual school calendar. The cyclic nature of this calendar offers an important insight into the temporal nature of routines within school organizations. The theory of organizational temporality may offer an invaluable analytical framework for predicting through implementation an organizational reliability and consistency—attaining academic growth, for instance. To a large extent, these traits are desirable for learning and adapting through changes in routines driven by temporality within school organizations.

The relationship with time in schools is critical to understanding change in schools governed by precise calendars and hours. Education is a human enterprise that also reflects the human propensity for incorporating temporal patterns for all members of school organizations, from students to center office administrators. School organizations are the embodiment of such a propensity for entrainment, effectively establishing legitimacy as an integral component that complements the cyclical process of organizational action within schools. This situates the role of time in schools as undisputable, especially with regard to organizational learning and adaptation through changes in routines, which, again, are temporal in nature.

The inclusion of organizational temporality in this dissertation therefore affords a greater capacity for the temporal depth of the dynamic capabilities of school organizations. Given the human (hence temporal) nature of organizations, it would be imprudent for schools to learn and adapt without regard to organizational temporality. As with most, if not all other public schools, schools for the deaf operate in increasingly turbulent environments with consequently limited resources. This makes it even more challenging for these schools to maintain the temporal depth crucial for allocating and maintaining resources. This may in turn affect organizational learning and hence adaptation and routines within schools for the deaf toward the academic growth of their students.

Organizational Learning

The empirical work of Leithwood, Leonard and Sharratt (1998) identified a set of circumstances for attaining organizational learning in schools. The contemporary role of schools as highly centralized and hierarchical organizations with unpredictable external realities necessitates organizational learning for greater control of planning and direction, or self-organization. This would maximize the human resources of schools, which have usually contended with increasingly limited organizational resources; unfortunately, the empirical evidence to support organizational learning in schools is scant. As a result, the authors conducted a qualitative study of three districts that underwent restructuring of instructional processes, school management or the use of technology for curriculum development. These various organizational contexts enabled the authors to identify similar qualities for organizational learning based on data collected from 111 teachers in 14 school buildings. Through this study, the authors found that school leadership is the most important factor for organizational learning, which promotes the learning of both the individual and the collective essential to organizational learning.

Silins, Mulford and Zarins (2002) used surveys of Australian educators to examine the significance of organizational learning and leadership for school change. In approaching this study, the authors asserted that school leadership in organizational learning did not necessarily create a condition for improved student participation and engagement, the key factors for school success. There had been various school reform efforts that promoted collaborative learning among school staff at all organizational levels in response to the changing external environment (societal demands, for example); however, the concept of organizational learning may be more structured, if not more elegant, for responding to the increasing demands for satisfactory school outcomes. In the contexts of organizational learning and school leadership, the authors used a path model to assess the relationships between organizational factors and school outcome measures of student participation and engagement at the building level. The questionnaires developed for this study resulted in data sets with a high reliability, which implied consistency among the sample of 96 public secondary schools in South Australia and Tasmania. The data sets revealed that the following factors promote successful organizational learning in schools: creating a trusting and

collaborative climate, taking initiatives and risks, having a shared and monitored mission and encouraging professional development. The data sets also showed that these factors align with those of school leadership. With this model, the authors suggested that schools should actively restructure—rather than struggle—to foster these conditions for organizational learning toward successful pedagogy for greater student participation and engagement and hence academic success.

A review of the literature by Collinson, Cook and Conley (2006) identified interrelated conditions for organizational learning in schools. In recognition of the relentless challenge before schools to innovate and change, these authors examined organizational learning as a viable approach to the following collective efforts in order to stimulate such learning in schools: "prioritizing learning for all members; facilitating dissemination of learning; attending to human relationships; fostering inquiry and its collateral learning; enhancing democratic governance; and providing for members' self-fulfillment" (Collinson, Cook & Conley, 2006). The authors substantiated conditions for organizational learning by creating a fictional school, with the understanding that these conditions as a whole were necessary for schools to become proactive, not reactive. This may be a challenge for schools as deeply routinized organizations that typically respond only to external demands, usually in the forms of mandates and incentives. Therein is the challenge of organizational learning: to do less with reactive behavioral change and to do more with proactive cognitive and behavioral change.

Organizational learning has been perhaps the most influential of the organizational perspectives on change in schools. Following the widely received notion forwarded by March and Olsen (1975) that organizations can learn like people, the work of Fiol and Lyles (1985) reinforced the expectation that organizations may learn to be more efficient. In response to various definitions and no single theory of organizational learning, these authors analyzed fifteen substantial works and other pertinent studies in the strategic management literature. The authors then defined organizational learning as "the process of improving actions through better knowledge and understanding" (p. 803). They also suggested that organizational learning is "the development of insights, knowledge and associations between past actions, the effectiveness of those actions and future actions" (p. 811). In delineating the theory, Fiol and Lyles

affirmed the presence of lower and higher levels of learning within organizations. The lower, behavioral level consists of structure and rules whereas the higher, cognitive level comprises process and relationship. To learn, organizations need to align these levels to the cyclic contextual pattern that includes culture, strategy, structure and environment. With regard to these theoretical refinements, the authors concluded by asking how organizations distinguish the outcomes of their learning.

The literature review by Levitt and March (1988) noted the learning capability of organizations to distinguish changes in structure, behavior and environment. This lent credence to the classical observations that organizational learning is predominantly structured by routine, with a basis in both organizational history and orientation. Based on the information that Levitt and March gleaned from behavioral studies of organizations, they described routines as procedural behaviors embedded with lessons shaped by the experiences of the organizations. Routines are also congruent with the culture in which organizations base their expectations and activities; routines perpetuate within organizations irrespective of which of the members of the organization performed them. This enables them to maintain organizational memory, which in turn allows their members to distinguish changes in structure, behavior and environment. The authors characterized such mnemonic encoding as an innate capacity of organizations to learn. With regard to this capacity, they argued that routines essentially facilitate organizational learning.

An often-cited article by Dodgson (1993) posited that learning is prevalent in all aspects of organizational activities. His literature review depicted learning as instrumental in the outcomes of these activities as well as in the manners through which organizations managed changes. Moreover, Dodgson noted that such management was multidimensional in nature, requiring a similarly multidimensional approach to assimilate the intricacies of learning processes within organizations. The branches of disciplines pertinent to the study of learning—as outlined in the review—offered analytical concepts to better understand organizational learning. These concepts served as the basis of the author's systematic evaluation of the following factors of organizational learning: goal, process and manner. The goal of organizational learning is to become adaptable and efficient when faced with change. This process necessitates the alignment of structural and systematic components toward this end. Once aligned,

organizations then require both internal and external analyses of all activities aimed toward organizational learning and change; Dodgson noted that this did not necessarily limit the outcomes of managed changes. The symbiosis of all these factors reflects the intrinsic nature of the learning process, which is both stimulating and recurring.

Largely theoretical in its early phases, organizational learning initially suggested few strategies or practices to improve organizational performance (March, 1991). However, starting in the 1990s, a stronger line of empirical and applied work began to emerge. Crossan, Lane and White (1999) developed a framework of organizational learning to make this versatile theory more tangible for practical applications. The purpose of this seminal study was also to advance the reciprocal attribution of organizational learning as "a principal means of achieving the strategic renewal of an enterprise" (p. 522). The authors argued that learning is cyclical, and is constantly balancing exploration of new ideas and exploitation of ideas that have become more familiar. This supported the authors' assertion that organizational renewal entails a balance of exploration and exploitation. In this regard, organizations renew by exploration through a feedforward process as well as by exploitation through a feedback process. This reciprocity provides the basis for the following four aspects of the learning process: intuition, interpretation, integration and institutionalization. The practical contribution of this framework is that it indicates which groups and individuals need to be deeply engaged in learning at each point in the process. Individual learning clearly has a more critical place in the early phases of change (initial exploration); groups become important as does the need to understand the implications of new ideas for internal practices (early exploitation), while the organization as a whole—presumably those who have the ability to make organization-wide decisions—becomes more important at the institutionalization phase (full exploitation for organizational purposes).

In this framework, the individual, group and organizational levels provide the structure of organizational learning. The processes of intuiting, interpreting, integrating and institutionalizing link these respective levels in a process of strategic renewal. Intuiting and interpreting processes occur at the individual level where organization members initiate and distinguish renewal activities. Both interpreting and integrating at the group level then allow the members to make sense of such activities in order to

communicate thoughts and partake in strategic actions. These actions become routines through the processes of integrating and institutionalizing at the organizational level. Although purely theoretical, this framework comprehensively illustrates the conceptual foundation of learning at all organizational levels. That being so, the framework offers a practical guide for developing, implementing or maintaining organizational learning activities and orienting them toward adaptation through individual contribution, group activities and organizational planning—all of which require reciprocity among all organizational levels.

Realizing that understanding where and how knowledge moves within an organization is critical, Schulz (2001) examined how organizational learning influenced vertical and horizontal flows of knowledge between organizational units in several hundred subsidiaries of American and Danish companies. Defined as "the aggregate of volume of know-how and information transmitted per unit of time" (p. 662), knowledge flows entail the collection and codification of new knowledge and its combination with old knowledge. The author found that horizontal flows transmitted old knowledge among units and that vertical flows relayed new knowledge to the managerial level—findings that supported Crossan, Lane and White's (1999) earlier framework. This also extends to the codification of knowledge that assists with both flows. The study noted how new knowledge from both external and internal sources may intensify knowledge flows; however, the exceptionality of such knowledge determines the intensity of knowledge flows. These findings contribute to a better understanding of how knowledge production and distribution enabled organizations to distinguish and then determine the relevance of knowledge for organizational learning.

A more recent review of the empirical literature by Bapuji and Crossan (2004) also pointed to the emergence of a solid base underpinning the concept and potential applications of organizational learning. The review consisted of 95 articles specifically on organizational learning selected from 707 publications from 1990 through 2002. The authors suggested that the maturation of research on organizational learning points to the interdependence of learning and performance within organizations. Specifically, that such interdependence is contingent upon three key variables in organizational learning: strategy, structure and environment. The strategy employed by an organization is the lens through which its members detect the

environment; the structure provides a means for organizational action; and the environment determines the extent of the environmental detection and subsequent organizational action. The authors noted that this particular perspective captured learning effectiveness in relation to recent experiences in certain situations. This, in turn, has prompted the need to study both management and temporality to better address research issues in organizational learning.

Organizational Adaptation

Focused on the more subtle adjustments between the group and the feedback received, either internally or from their environment, organizational adaptation can be instrumental in effecting changes in schools through organizational learning. To illustrate, Conley and Enomoto's case study (2009) showed that adaptations of routines enhanced student attendance in schools. These authors noted inherent contradictions in schools where administrators simultaneously stabilized and changed routines to implement school-wide goals. Opposing such an implementation may have been detrimental to attaining academic growth; for example, the authors reiterated the key role routines like daily attendance and tardy reporting played in school organizations. Although the study did not show these daily requirements as factors in the performance of schools as organizations, Conley and Enomoto asked the research question, "What is the ideal that a change in routine might highlight or develop in the organization?" They observed that school organization members usually pursued efficiency, an ideal that has impelled change in routines; this referred to routinized action theory, which states that organizations alter routines toward ideal efficiency. The authors then interviewed members of school organizations as well as analyzed school documents and found that, as per the theory of routinized action, changes may alter routines, roles and responsibilities for increased efficiency in schools.

The importance of organizational adaptation emerged in the mid-1980s, when increasing attention was being paid to the importance of environmental change as a factor affecting organizational change and, ultimately, performance. According to Hrebiniak and Joyce's (1985) widely cited work, organizational adaptation requires reciprocity between the older emphasis on strategic choice and an increasing emphasis on environmental determinism and mimetic behavior among groups of similar organizations.

Organizational adaptation cannot do without either; however, this does not indicate a dichotomy but rather a continuum between determinism and voluntarism irrespective of managerial or environmental orientation. Furthermore, the authors stressed that the adaptation process is essentially about reciprocity between the organization and the environment, not the organization or the environment per se. To that end, organizational choice is a critical element in determining strategic relationships with the environment to achieve organizational adaptation. Hrebiniak and Joyce arrived at their findings through typological analysis and by analyzing literature reviews on organizational adaptation. They combined determinism and voluntarism as two independent variables in treating and then classified organizational adaptation into four types: natural selection, differentiation, strategic choice and undifferentiated choice. These types represent a range of choice and adaptation in making strategic options, decisions and examinations of the environment. This typology of organizational adaptation shows that organizations are capable of making strategic choices contingent upon the context to which the organizations adapt.

The research of Jennings and Seaman (1994) followed up on Hrebiniak and Snow's challenge to provide empirical evidence that organizations adapt to environmental change. With regard to this widely embraced perception, the authors acknowledged that organizations are expected to conform to external change through internal alignments of both strategy and structure, and that these alignments predict improved performance. Jennings and Seaman conducted empirical research to test this assertion by analyzing published data on the Texas savings and loan industry. The analysis and measurement of performance and adaptation in this industry yielded results that supported all research hypotheses, which essentially postulated that, "organizations with optimum strategy-structure match tend to have a higher performance than those without an optimum strategy-structure alignment" (p. 470). Interestingly, more adaptive organizations with responsive structures performed the same as less adaptive organizations with defensive strategies. In conclusion, the authors noted that the extent of organizational adaptation correlated with strategy-structure alignment and thus organizational performance.

Although organizational learning is clearly related to organizational adaptation according to Carley and Lee (1998), it also provides a distinctive way of thinking about organizational change. And

though the research literature to date has indicated that adaptation to the environment is an ongoing process in all organizations, the purpose of their simulation study was to investigate variable organizational traits (structure, strategy and performance) that promoted adaptation for improvement in performance. Based on their findings, they concluded that three traps affect the capability of organizations to strategize and adapt: the structural trap results from ineffective organizational design, the mechanical trap occurs when organizations make recurring changes without discernible outcomes, and the cognitive trap occurs when learning within organizations is not congruous with their capacity to adapt.

Rather than examining adaptations by looking only at organizational characteristics, Miller and Friesen (1980) examined how 26 organizations adapted to internal and external conditions by aligning themselves with their respective frames of reference. Their study also showed that an inclination to preserve internal alignments discouraged stable organizations from responding immediately to signals from the environment. These findings led the authors to infer that adaptation difficulties within organizations may reveal their proclivity not to adapt to external changes. The results also showed that organizations generally opposed changes in strategy and structure; these variables changed during significant moments if the survival of the organization was threatened. Either way, organizational momentum determines the extent and feasibility of organizational adaptation. This continuity reflects the impulse of organizations to align toward familiarity regardless of its efficacy. Miller and Friesen noted that cognitive limitations caused by hesitation or incompetency within organizations prevented them from adapting successful internal strategies and structures that aligned with the external environment.

Organizational Routines

The empirical case study of Conley and Enomoto (2005) introduced routinized action theory for analyzing the organizational capacities of schools. This theoretical lens may aid the study of such highly routinized organizations that face an ongoing demand to balance stability and change. Routinized action theory suggests that routines in schools change when schools cannot achieve desired outcomes or fulfill goals. The theory also has it that schools change routines to develop and then work toward new goals. In studying the theory, Conley and Eonomoto described three sites with qualitatively distinctive

characteristics: a K-12 public school, a private international school and a center office in an educational system. All these sites showed the same sequence through which schools alter routines in response to the need to rectify problems and develop new goals. This finding confirmed that routines were the binding agent of the school as an organization; however, these routines were found to be primarily reflexive, not reflective, in schools. In response, the authors stressed the role of school leadership to capitalize on the inherent qualities of routines for a greater likelihood of achieving institutional change in relation to governmental reform.

Routines are the features of internal organizational processes that, according to the adaptation lens, cause defensive routines and the inability to adapt to environmental challenges. Thus, it is important to understand defensive routines as part of the process of collective resistance to change. Pentland is one of the most frequently quoted authors who have conducted empirical research on this topic. Through a case study of a single computer software firm, Pentland and Rueter (1994) proposed organizational routine theory as the foundational theory of organizational learning and adaptation. Routines in organizations establish viable patterns of specific social actions that organizational members perform consistently. Routines also serve as a key element of organizational structure and operation. In recognizing the inherent difficulty of studying organizational routines in general, the authors adopted a grammatical analogy, likening organizational routines to grammatical rules, which are stable but gradually changing. Their case attempted to answer this specific research question: "How can apparently non-routine work display such a high degree of regularity?" (p. 484). Outcomes of the study confirmed these authors' observation that routines play a decisive role in linking organizational structure and action. Routines as such also enable differentiation and then apply patterns of organizational actions. In conclusion, the authors maintained that routines require commitment and consistency because they vary in nature and scope. In that regard, the process of organizational adaptation might originate in changing routines.

Additional case study work by Feldman (2000) highlighted organizational routines as a source of organizational change. Routines are not inherently rigid in the way they may complement changes in organizations. Feldman studied a single organizational unit for four years to assess the capability of

routines to bring about organizational change. During the course of this grounded theory study, Feldman identified five routines, with structuration theory as the basis of theory building. A finding of this study indicated that organizational members change routines to attain desired organizational behaviors and outcomes. To illustrate, these members engaged in behavioral and cognitive activities that ultimately influenced changes in routines, which were essentially embodiments of such engagement. However, as Feldman noted, there were factors beyond members' control, such as the organizational and temporal restrictions that prevented them from changing routines. This study concluded that changes in organizational routines are continuous because of the behavioral and cognitive orientations of organizational members in fulfilling their routines.

In a later literature review, Feldman and Pentland (2003) extended the proposition that routines have a dual role in establishing stability but also in enabling adaptability within organizations. This analysis strengthened the prevailing notion that organizational routines may be the impetus for change within an organization. The authors defined an organizational routine as "a repetitive, recognizable pattern of interdependent actions, involving multiple actors" (p. 22) that has a dual character as ostensive and performative. The ostensive aspect of an organizational routine is conceptual and defines the structure and function of a particular routine; the performative aspect embodies this routine in the actions, peoples, times and places involved. This interrelationship constitutes organizational routines as integral components of all organizations and most organizational theories. Feldman and Pentland noted that the prominence of the ostensive aspect in most research studies led inadvertently to descriptions of routines as being static, as opposed to being inherently adaptable. To that end, two of the questions these authors raised in their conclusion pertained to effects on the interrelationship of the dual property of organizational routines, and more notably, when routines stabilized or adapted.

The theoretical work of Zollo and Winter (2002) focused on the concept and process of dynamic capability in developing and adapting routines for organizational activities, integrating the study of routines with organizational learning. Specifically, organizational activities entail a continuous interrelationship between dynamic capabilities and operating routines, with the former acting as the adaptive agent of the

latter. By definition, a dynamic capability is "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness" (p. 340). They viewed routines in this instance as behavioral patterns that enable organizations to monitor and respond to fluctuations in internal and external environments. The authors proposed an integrative theoretical framework of how organizational knowledge is produced in conjunction with both operating routines and dynamic capabilities. The domains that underpin an organization's dynamic capabilities include experience accumulation, knowledge articulation and knowledge codification. These three developmental mechanisms of dynamic capabilities affirm the role of organizational learning in developing organizational knowledge for the purpose of beneficial adaptation.

In a recent review, however, Becker (2004) uncovered two distinctive interpretations of routines embedded in a literature that is both less developed empirically and less coherent theoretically. He explained that there have been variations in the concept, definition and role of routines in the literature because there was a disjuncture between studies that viewed routines as based in behavior and those that emphasized routines as cognitive patterns. Becker argued that both aspects of routines allow organizations to implement a multitude of essential organizational functions to promote systemic congruity. In identifying routines as both cognitive and behavioral regularities, Becker posed several questions for future research, one of which being whether or not there is a symbiotic relationship between these regularities, pointing out that the relatively weak research base needed to begin by investigating this foundational question.

Organizational Temporality

One cannot study change without thinking about time, a key element to harnessing the essentials of organizational functions: cognitive and behavioral regularities. Change is gradual between one organizational state and something quite different; change in organizations may be fast or slow, but it is never instant. The classification study of Lee and Liebenau (1999) further substantiated the significance of temporal research on organizations. In analyzing the role of time, these authors identified money and the clock as the most prevalent notions of time that effectively restrained the far-reaching potential of time as a

key variable to studying and understanding organizational phenomena. Alongside space, time is a determining factor in the individual, situational and environmental factors in organizational activities. Lee and Liebenau developed several frames of temporality for the purpose of studying various aspects of time in organizations not as a constant but rather as a variable shaped by societal and cultural factors. Time as a variable in the context of these factors may assess social and cultural effects on clock time and social time, two primary concepts of time in organizational temporality. With regard to social time, the authors suggested that the concept of time is a socially constructed phenomenon that may change and needs to be studied empirically.

Ancona and Chong (1996) pointed to the importance of external responsiveness and learning and adaptation in their study. According to these authors, organizations adjust the pace of their activities that in turn develop cycles and maintain rhythms within organizations. Ancona and Chong emphasized that such entrainment is contingent upon external rather than internal events and argued that more responsive organizations entrain to their environments for adaptability whereas hermetic organizations do not adapt and hence do not entrain. But the timing of internal adaptations is also important. Insulated organizations may be equally responsive and hence adaptive by making sense of external events that would require those organizations to realign their internal events without comprising their hermetic orientation.

The multiple-case study of Staudenmayer, Tyre and Perlow (2002) found that alterations in daily rhythms may induce organizational change. Although timing does influence the extent of organizational activities, this study investigated how these activities might define time in such a way that they alter routines in accordance with daily rhythms. These authors inductively validated this interconnection of event- and time-based change (p. 13) by using data gleaned from interviews, notes, surveys and archival records. This process started with a basic research question: “What role, if any, does time play in the change process?” (p. 15). The constant comparative method employed by the authors resulted in a descriptive saturation of the three sites studied. All these sites experienced significant event-based temporal alterations that effectively changed temporal perception and discretion among organizational members. The authors denoted these alterations as temporal shifts, or “changes in a collective’s experience of time…to

facilitate organizational change" (p. 2). The fact that all research sites varied considerably in organizational characteristics showed temporal shifts to be potentially empowering—not burdensome—as triggers, resources, mechanisms and symbols for change (p. 18). In addition to the common notion that changes are a response to the environment, the authors noted that the shifting of temporal sense amongst organizational members was what prompted recognition and realization of problems that ultimately spurred their adaptation toward change.

With time being central to organizational theory, Ancona, Okhuysen and Perlow (2001) identified categories of variables for consistency in the research of temporality in organizations. These categories highlight the conceptions, delineations and relationships to time, which the authors defined as "a non-spatial continuum in which events occur in apparently irreversible succession from the past through the present to the future" (p. 514). The process of this study was comparable to a factor analysis of a specific set of variables that characterizes, maps and explores the continuum of time in organizations. With this set, the authors developed theoretical propositions with regard to the interrelationship between tasks and time in organizations. Each proposition reflects a strong cultural influence on temporality that may be cyclical, spiral, parametric or facilitative. These elements of the propositions provide a structure for designing and conducting organizational temporality research that aims toward a more unified research on time and timing in organizations.

The research of Ancona, Goodman, Lawrence and Tushman (2001) enhanced the temporal lens as a practical approach to organizational research. Through a series of analyses and explorations, these authors identified opportunities and means to prevail over institutional barriers: they used the temporal lens as a framework for developing newer theoretical understandings. This study is also applicable to the need for refining methodological approaches for the use of temporal variables. These approaches may evolve into more substantial research into the interplay of temporal, strategic, interpersonal and cultural aspects of organizational temporality. In that regard, organizational culture is one instance of how time defines the pace, cycle, rhythm, flow and orientation of an organization. More importantly, this approach may partake of temporal leadership, a largely unexplored organizational phenomenon that would involve the concept of

entrainment. To that end, the authors affirmed that the temporal lens might lead researchers to a more refined concept of leadership and management.

Bluedorn and Standifer (2006) introduced the concept of temporal depth to illustrate organizational behavior in the context of time. Based on the premise that time is a social construct, temporal depth is the extent to which organization members think about both the past and the future without consideration of the significance of either dimension. Temporal depth also illustrates how the depth of thinking about the past may equate to that of the future. Unlike time horizons, the temporal depths of the past and the future are complementary and are alterable through purposeful planning at the organizational level. Such alternation may be desirable, since the concept of fungible time is commonplace through the use of clocks and watches. These mechanisms of fungible times are constant and do not respond to the realities of organizational behavior. On the contrary, epochal time is a content-based temporal dimension that defines events shaped by such behavior. This particular dimension offers a more varied perspective of time as to temporal depth through what Bluedorn and Standifer called temporal imagination. The concepts of temporal depth and temporal imagination may be fundamental to the recognition and realization of problems that ultimately spur adaptation toward organizational change for academic growth in schools for the deaf.

Tying Organizational Theory to Challenges within Deaf Education

A number of inherent variables such as etiology, additional disability and language access exist within the population of deaf children. This presents a continuous challenge to design and deliver the federally mandated IEP for each child in public school. From an organizational perspective, schools for the deaf embody a sound approach to fulfilling the mandate by centralizing specialized resources specific to educating this low-incidence youth population. Even with the critical mass of both students who are deaf and teachers and administrators who are credentialed to serve them, schools for the deaf have been typically perceived as the last resort for deaf students who failed to succeed in the regular classroom, which is not conducive to the visual learning style of the deaf.

Notwithstanding the perception of schools for the deaf as the last resort for deaf children, such schools may increasingly contend with the structural, mechanical and/or cognitive organizational traps as identified in the abovementioned study on organizational traits. Given the need for schools for the deaf to survive through strategy and adaptation in a turbulent policy environment with high demands for accountability for academic achievement, these schools may benefit from organizational theory, for they are essentially school organizations with structure and strategy that are not unlike those of public schools, albeit with a greater requirement for a more discernible academic achievement outcome. From a historical perspective, schools for the deaf have yet to attain such discernment at the national level; however, there has been no discussion in the literature on these schools as organizations for the explicit purpose of improving the academic achievement of the deaf. This void leaves room to apply organizational theory to the challenges within deaf education.

In keeping with temporal depth and imagination in recognizing and realizing problems in deaf education and hence the school organizations that educate students who are deaf, through an extensive review and a meta-analysis of a 40-year literature in the education of the deaf, Luckner, Sebald, Conney, Young and Muir (2005) presented severe shortcomings in literacy research in this field. These authors identified 964 articles for the review and accepted only 22 articles that met the following stringent selection criteria: description of the intervention, a control group, statistical independence and data related to literacy. Despite the criteria, all 22 articles were inconsistent with each other in regard to aspects of literacy. There were also inadequate group studies, a lack of systematic replication and limited data to support evidence-based practices. This study asserted that most, if not all, practices of literacy pedagogy in deaf education reflected the underlying, lingering tendencies of educators and researchers in this field to rely on data coming from committee reports, consensus conferences and expert opinions. The authors acknowledged that it was challenging in several respects to research for improved literacy of students who are deaf.

Schirmer and McGough (2005) illustrated the problem of weak organizational learning through a synthesis of literature reviews on reading research in deaf education, showing how this field evidently did not align itself with current reading-education research. The authors discussed how the results gleaned from

the review differed from those of the research conducted by the National Reading Panel (NRP), particularly in the areas of reading development and reading instruction for young readers of all levels. This discussion also observed how the scientific research methodologies based on the medical research endorsed by the NRP in the areas of alphabetics, fluency and comprehension, as well as computer technology and reading instruction, may have inadvertently marginalized the field of deaf education with a qualitatively different student population through the prioritization of federal funding and policy activities. Schirmer and McGough described how the reading research literature in deaf education had comparatively minimal activity on fluency, vocabulary instruction and textual comprehension. In conclusion, these authors asserted that the reading research in deaf education is not in alignment with the contemporary academic and political pursuits of improved reading.

The literature review of Luckner and Handley (2008) on reading comprehension of deaf students revealed inadequate research on evidence-based pedagogy in the field of deaf education, which may limit learning and adaptation, but also suggested a constrained knowledge environment for professionals working in these schools. These authors amassed and then reviewed 52 pertinent articles selected from all types of peer-reviewed research articles published between 1963 and 2005. The authors concluded that deaf education would benefit from a more concentrated effort to ensure both the quantity and the quality of research into enhanced, evidence-based pedagogy for reading comprehension. Luckner and Handley also concluded that the field of deaf education does not have a large enough research base to improve the reading performance of deaf students through evidence-based practices (EBPs). These authors recommended a further examination of the EBPs currently in use, which are still exploratory in nature.

The literature review of Moores, Jatho and Creech (2001) showed some progress in the field of deaf education, yet it also revealed indications of struggle in an increasingly unpredictable environment. The review consisted of about half of the 130 articles published in the *American Annals of the Deaf* from 1996 to 2000. The authors selected those articles for their focus on pedagogy, not literacy, which was the topic for a separate review. In reviewing the selected articles received from 11 different countries, the authors established six categories: Teacher/Professional Preparation, Teacher Characteristics, Modes of

Instruction/Communication, Content/Curriculum, Placement, and Student Characteristics. The review indicated that these categories were not geographically specific and were fairly common throughout the world. Finding only three articles, the authors noted that the Content/Curriculum category was one of the least progressive domains in the review, if not the field, with these three articles addressing math alone. Further, this category had not addressed other content areas or access to the general curriculum. This is troubling, especially with the advent of increased federal mandates for educational accountability on both schools and students. Another troubling statistic they found was the shortage of highly qualified school administrators and faculty in the field of deaf education. The latter expressed more interest in teaching than in research, generating very few publications, if any. The most troubling aspect of all is that although deaf students have normal intellectual capacity, they continue to struggle with access to communication in certain educational settings where the unfair underestimation of their academic aptitude continues to be a barrier as well.

It is probable that the inchoate state of research in the field of deaf education has affected its interrelationship with the traditional role of schools for the deaf in the education of the deaf. It is also probable that the absence of temporal depth, and thus legitimacy, in deaf education research has also compromised the legitimacy of schools for the deaf. This may then cause schools for the deaf to struggle with their established routines and their ability to adapt due to the lack of relevant research directly pertinent to the long-standing pedagogy and policy practices of schools for the deaf. Ultimately this affects essential knowledge in the education of the deaf as a basis of resources among schools for the deaf integral to organizational learning. However, all this may be a result of the policy direction of the federal government's increased involvement with special education, which effectively subsumed deaf education approximately forty years ago.

Schools for the Deaf as a Case in Point of Organizational Theory in Deaf Education

Stinson and Kulwin (2003) positioned schools for the deaf as strongly congruent with the premise of free and appropriate public education that caters to the individual educational needs of students who are deaf. They found that a body of anywhere from 50 to 600 or more students attend each of these particular

schools nationwide to use sign language to communicate directly in the classroom and elsewhere throughout the school campuses. The authors also found that such a critical mass of students who are deaf with full access to communication, and thus education, typically entice students who are deaf to transfer to these schools from neighborhood public schools while they are in high school.

The authors cited a study by Allen and Karchmer (1990) that reported at least 20% of the teachers in schools for deaf students were deaf while only 1% of teachers in general education were deaf. This further reinforced the fact that schools for the deaf are an embodiment of their own students and afford a more natural, stable and predictable learning environment, especially for young children. This study thereby positioned schools for the deaf as significant for responding to turbulent environments created by polarized educational policy settings.

Schools for the deaf generally offer a full array of support services provided by credentialed educational professionals who are fluent in sign language. Social, athletic and leadership opportunities are also readily accessible with sponsors, coaches and advisors who too sign fluently. This type and level of support usually offers a wider array of educational, social and athletic opportunities. Teachers and staff at schools for the deaf, many who are deaf themselves, sign at all times, creating unlimited opportunities for the incidental learning crucial to continued academic and social development for every student.

Many schools for the deaf date back to the 19th century and are some of the oldest continuously operating public schools in their respective states. In this capacity alone, these schools offer a combination of long-standing, full-fledged school organizations with the same mission to educate a low-incidence youth population with disabilities. Throughout the years of autonomy from federal involvement and from other educational fields of competing interests, schools for the deaf have served as salient points of entry and sources of expertise in the field of deaf education to such an extent that these organizations defined the very field in which they operated. To that end, the organizational theories discussed above suggest that these school organizations may retain such expertise even in the face of shifting policy settings. This presents schools for the deaf as a noteworthy case in point for school organizations operating in such settings that

are realigning their resources and actions toward attaining the academic achievement benchmarks for which they are accountable.

Research Questions

Focusing on both growth models for students who are deaf by means of (1) accountability measures to demonstrate and maintain individual levels of academic proficiency (Eckes & Swando, 2009; Cawthon, 2007; and Katsiyannis et al., 2001) and (2) the significance of leadership for increased capacities for change in school organizations (Conley & Enomoto, 2005; Silin et al., 2002; and Leithwood et al., 1998), the research questions below attempt to address what the organizational effects of the federal special education mandates were upon the leadership of schools for the deaf that attained academic growth. This phenomenon among several schools for the deaf (Cawthon, 2007) lends itself to an investigation of how schools for the deaf—and all other school organizations for that matter—may respond to turbulent policy settings.

To reiterate, the organizational learning framework suggests the ways in which schools generate and manage new information and knowledge. This study positions schools for the deaf as significant actors in responding to turbulent educational policy environments that perpetuate turbulence and focuses on how they organize themselves to generate and use knowledge in order to better attune to this setting. Thus, the central research question of this dissertation asks: how do schools for the deaf organize to attain academic growth?

In conjunction with organizational learning, organizational adaptation may enable the more subtle adjustments that schools for the deaf make in response to signals that they receive either internally or from their environments. Thus, the first of three research sub-questions asks: how did these schools respond to the federal mandate for academic growth?

Learning and adaptive organizing requires adjustments in organizational routines. Since routines exist as a strategy that enables schools to maintain stability over time, the second research sub-question asks: how did adjustments in organizational routines complement the academic growth of these schools?

Finally, organizational temporality offers an insight into how schools for the deaf behave in relation to time, both as a concept and as a resource for learning, adapting and developing stable, productive routines. To this end, the third research sub-question asks: how do the temporal characteristics of these schools influence academic growth?

CHAPTER THREE – Methods

The aim of this dissertation was to approach school accountability through the lens of organizational theory, with specific applications for students who are deaf. In particular, the focus was on how organizational theory can help to explain how some schools for the deaf have successfully responded to the accountability movement. The research question of how schools for the deaf organize to achieve academic growth focuses on both growth models for these students; that is, (1) by means of accountability measures to demonstrate and maintain individual levels of academic proficiency and (2) via the significance of leadership for increased capacities for change in school organizations. In particular, the question attempts to address the organizational effects (or lack thereof) of the federal special education mandates upon the leadership of schools for the deaf that achieved academic growth.

Research Design and Methodology

With the presumption of this dissertation being that schools for the deaf attain academic growth through adaptations in organizational routines, as indicated by routinized action theory, this multiple-case study (Yin, 2009) was designed to explain how schools for the deaf realize academic growth in an age of accountability. Case studies are generally a preferable research model for establishing causal relationships and are particularly useful when the object of study includes "important explanatory variables [with] boundaries between phenomenon and context [that] are not clearly evident" (Yin, 1993, p. 31). This particular study context is appropriate when its variables are extensive and divergent, as is usually the case in educational situations in which "no single survey or [other] data collection approach can be used to collect the information about these variables" (Yin, 1993, p. 32).

Following Yin's (1993) rationales for more compelling and robust evidence through the multiple-case design, which was applicable to this study of academic growth in schools for the deaf, the research focus was on organizational adaptation specific to organizational learning, routinization and temporality. The principal purpose of this research design was to examine the organizational phenomenon of academic growth at schools for the deaf, which have been, generally, a sector that has had weaker academic performance than other schools that serve the general population. To that end, this explanatory multiple-

case study investigated organizational learning, adaptation, routinization and temporality as theoretical bases for identifying and explaining how schools for the deaf may successfully adapt, within local constraints, to federal expectations aimed at the academic growth of students who are deaf.

In order to be robust and compelling, the approach to case studies that was used in this dissertation incorporated several key design features characteristic of a multiple-case study, including mixed methods data collection, data source triangulation, semi-structured interviews and the constant comparative analysis method (Yin, 2009; Yin, 1993). These attributes ensured both the rigor and the flexibility of this dissertation, which begins with a case selection and data collection protocol. This was then followed with preparation, collection and analysis of data collected from three participating schools for the deaf. This process then followed with another collection and analysis of confirmatory data from one of these schools for the purpose of reaching and then verifying cross-case conclusions. The aim was to develop a theoretical framework that explained organizational attributes in relation to achieving academic growth at schools for the deaf.

The abovementioned research design ensured reliability and validity by adhering to the study protocol below. The decision to use the purposive mode of case selection reflected a smaller number of case samples and a desire to improve the selection of these cases and the inferential process of arriving at results. The use of a multiple-case design addressed the particular requirement for external validity, for this design better enabled the generalizations of the results that stemmed from this dissertation (Ellinger, et al., 2005 as cited in Swanson & Holton, 2005). Such results originated from both quantitative and qualitative databases, both of which strengthened case selection, particularly with regard to the former, which used purposive sampling, a standard statistical technique (Seawright & Gerring, 2008). Moreover, this mixed-methods approach to designing the study further reinforced the validity of its results by employing statistical results in the first phase of the study and then accompanying the results with qualitative data collection. That connection has afforded this dissertation a sequential explanatory design (Creswell & Creswell, 2005 as cited in Swanson & Holton, 2005).

Sampling

The data sampling of this study started with a quantitative dataset on schools for the deaf (n = 28), representing approximately half of all schools for the deaf in America, that currently use the Measures of Academic Progress (MAP) Reading assessment. The MAP is a set of measures created by the Northwest Evaluation Association (NWEA), a non-profit organization that works with school districts nationwide to develop and maintain data-driven culture and instruction in schools. Designed for the general student population, the MAP is a standardized computer-based, adaptive assessment aligned to the state curricular standards and state performance standards that tracks student progress and academic growth with combined scores from an entire class. Unlike fixed-form assessments, the MAP is an adaptive-testing assessment that originated in the military (Sands, Waters, & McBridge, 1998 as cited in Kingsbury & Hauser, 2004), was further developed in professional certification and licensure (Zara, 1992 as cited in Kingsbury & Hauser, 2004) and finally emerged in elementary and secondary education (Kingsbury, 1986 as cited in Kingsbury & Hauser, 2004).

As an adaptive test, the MAP Reading assessment is based on achievement rather than grades, and was designed to measure growth for each and every student regardless of the current level of academic achievement based on a standard. This particular reading assessment was created to measure the following goal strands established by NWEA: Word Recognition, Analysis, Vocabulary Expansion, Narrative and Informational Comprehension and Literature. Scores from this assessment were prepared in percentile form for comparisons among individual students and larger groups of students of similar age or grade, for instance.

This adaptive-testing paradigm has allowed the MAP to determine the difficulty of test items upon the student's performance in responding to previous test items at the time of test taking. This has allowed precision in assessing the level of the student's academic achievement, ensuring a greater validity and reliability in identifying proficiency categories, identifying achievement growth and informing instruction, all for the explicit purpose of attaining educational accountability. According to Kingsbury and Hauser (2004), the adaptive testing paradigm allows schools and their students to be informed of their performance

based on the MAP, which was designed to challenge the test takers without inducing the frustration and discontentment that is often associated with fixed-form assessments. MAP scores also provide teachers with a more current measure of how well the students grow academically toward various goals within a subject area and help teachers translate raw MAP data into instructional plans with the use of DesCartes, a resource designed for teachers (NWEA, 2012). All this has enabled schools to monitor and identify the academic needs of each individual student over time.

While MAP is an adaptive test, it was used because its scores have been associated with standards-based tests. For example, Silberglitt (2008) correlated target scores of the MAP and a state standards-based assessment, and observed "a strong concurrent and predictive relationship between the two assessments" (p. 2). This affirms the use of the MAP results to correlate the academic growth of schools for the deaf with standards-based assessments as required by the NCLB (although at the time of this study, NCLB required a standards-based state assessment).

To facilitate sampling for this study, a dataset of the MAP Reading data points (n = 9,503) derived from the national's largest repository of student growth data maintained by the NWEA: Growth Research Database guided a statistical purposive sampling to identify three schools for the deaf that had implemented the MAP throughout their academic departments in elementary, middle and high schools. A password-protected quantitative dataset, without names of any kind, obtained from the Kingsbury Data Center at NWEA, was analyzed using the SPSS (Statistical Package for the Social Studies), a popular computer program for statistical analysis in social studies, to identify the 28 participating schools for the deaf. Three schools for the deaf were then selected for the most perceptible academic growth and performance based on the growth of the Rasch Unit, or RIT Scale. Developed by NWEA, this scale was designed to assess student progress according to the difficulty of test items designed for the general student population.

To illustrate, NWEA showed the average growth of 6.65 points for grades K through 11 in the general population based on "at least 20,000 students per grade…drawn from a test records pool of 5.1 million students, from over 13,000 schools in more than 2,700 school districts in 50 states" (NWEA, 2011). In the same vein, the dataset on the 28 participating schools for the deaf from NWEA abovementioned

showed an average growth of 7.89 points. Based on this dataset, the three schools for the deaf with the most perceptible growth had an average growth of 8.74 points. This table illustrates these growth points:

NWEA Reading Dataset	*Average MAP Growth Points*
K-11 General Population Schools (n = over 13,000)	6.65
Schools for the Deaf (n = 28)	7.89
Selected Schools for the Deaf (n = 3)	8.74

Upon identification of the top growth schools for the deaf for this study, NWEA informed the researcher of the names of these schools with top growth rates. NWEA then contacted the top-growth schools to inform them of their selection and this study, and then provided the researcher with contact information for these schools to start the process of conducting research with them.

The identification of three top-growth schools for the deaf that use the MAP for this study took place via correspondences among the NWEA, the schools and the researcher. Through communication between the schools and the researcher—for the purpose of securing approvals and establishing protocols—interviewees were selected for their leadership positions (e.g., as Superintendents or Principals), and this selection eventually also included other school personnel directly involved with attaining academic growth, such as teachers and specialists. For the second phase of this interview process, the Superintendent of one of the three schools that had been selected for further interviewing included additional administrators, teachers and specialists in further interviewing.

All these personnel were invited to participate in this study and were emailed by the researcher. These interviewees signed a consent form, acknowledging that they were aware of the purpose of the study, of any risks that were involved, of the study's adherence to the anonymity, of the confidentiality of information they shared and of their right to withdraw at any time.

Data Collection

Following Denzin's (1997) data source triangulation, which was used because it seeks consistency in data within different contexts, evidence came from a MAP dataset and two-phase interviews with school personnel. Interview data were collected using semi-structured protocols derived from a Matrix of Questions Options (Patton, 2002) that consisted of deductive and inductive questions about (1) the school

for the deaf from an organizational perspective, (2) the rationales to use the MAP and (3) the decisions and activities leading to academic growth.

Patterned after the Matrix as in Appendix A, these temporally-based sequencing interview questions were developed in accordance with routinized action theory. This framework was employed because it offered the researchers theoretical bases aimed at making changes and achieving stability for the organizational survival of a school, for example, by (1) repairing what did not work by altering routines within the school; (2) striving toward new goals to be achieved by the school and its students, personnel and other stakeholders; and (3) shifting resources accordingly through administrative means that support the alteration of routines and the establishment of new school-wide goals in this instance. The theoretical framework was also useful because it included both addressing problems and contending with resistance to alterations in routines, which have been largely instrumental in bringing about such changes. Moreover, all these components of the framework aligned with a spiral design of interview questions in relation to the organizational theories of this dissertation, in this order: learning, adaptation, routines and temporality, as in Appendixes B and C.

Interviewees were provided with these questions in advance so they could think about the questions before participating in a scheduled interview via videophone either directly with the researcher or through a certified American Sign Language interpreter. All interviews were recorded digitally for translation where applicable and transcription by certified interpreters and transcribers, respectively, who were bounded by professional confidentiality. The researcher then reviewed all transcripts in their entirety for accuracy and referred to video files when necessary for verification. Corrections of any contents were made at the discretion of the researcher.

Data Analysis

Immediately after interviewing school personnel at the three schools, analysis of the interview data in its entirety was conducted by the researcher in accordance with the following qualitative analysis sequence (Ruona, 2005 as cited in Swanson & Holton, 2005):

- Transcribe all interview data for reference and verification;

- Familiarize with data through active engagement with it; that is, through viewing and reviewing videos and transcriptions, as well as through noting and reflecting, respectively;
- Categorize data based on the theoretical bases of this study with the purpose of constructing meaning through pattern matching for the purpose of analytic generalization;
- Compare data constantly with the routinized action framework as the guiding framework;
- Cross-compare data from the first phase of interviewing with all three schools;
- Review data by analyzing and verifying emerging patterns;
- Compare data from a second phase of interviewing with the selected school;
- Deduce patterns that complement the theory of routinized action;
- Categorize data for their patterned relationships with the theory in reference; and
- Delineate a theory of academic growth in schools for the deaf.

Although seemingly linear, this data analysis process was cyclical and reflexive through the constant comparative method until theoretical saturation was evident (Glaser & Strauss, 1967 as cited in Green, et al., 2006). The issue of internal validity deserved closer scrutiny because this study was explanatory in nature and relied on evidence for conclusions. This design addressed such concerns by relying on the constant comparative analysis method and the guiding theoretical framework that was selected prior to the study; this framework established the parameters for comparing evidence toward theoretical saturation through emergent complementary patterns.

The theoretical bases and the research questions of this dissertation determined saturation to avoid excess data (Miles & Huberman, 1994; Lincoln & Guba, 1985 as cited in Swanson & Holton, 2005). This aligns with the constant comparative method, which was chosen because it calls for constant comparisons among patterns that later match propositions toward theorization (Merriam, 1998 as cited in Swanson & Holton, 2005). Such theorization established relationships between pattern categories that described, explained and represented the schools under study (Gioia & Pitre, 1990 as cited in Swanson & Holton, 2005). Finally, reporting was concise and consisted of separate interview phases as per the data collected,

analyzed and presented for analytic generalization that aimed toward both theory and the population represented by the cases.

Protection

To protect the utmost privacy and confidentiality of all interviewees, this study consistently employed a series of practices as per established protocols of both the Institutional Review Board and the NWEA. During the data collection, these protocols required securing informed consent of interviewees by using a permission form along with a statement of confidentiality assuring them of their anonymity. This also included keeping electronic files and digital video and audio clips in a secure location where only the researcher would have access to them. When reporting results, anonymity of interviewees was maintained by not identifying them.

CHAPTER FOUR – Results

The aim of this dissertation was to investigate and identify how three schools for the deaf organized to attain academic growth. In delineating the results of two interview phases that were outlined in Chapter Three, this chapter will be organized around the following topics: (1) addressing the problem of unsatisfactory academic achievement of students who are deaf, (2) responding to the problem with an academic growth model, (3) striving for academic growth in schools for the deaf and (4) shifting internal resources to support academic growth. An initial comparison of the interview transcripts showed that the three schools addressed the national problem of unsatisfactory academic achievement at the organizational level. This, of course, was not unexpected since they were sampled because they had demonstrated evident academic growth on an adaptive test. Thus, the analysis focused on examining how these schools went about achieving these results.

The three schools responded to the achievement problem directly, not by exhortations but by promptly making organizational changes that addressed the problem through evident academic growth. Striving for new goals was then followed by shifting internal resources in a way that directed them most obviously toward achieving academic growth; this action of shifting resources was in line with the theories outlined in Chapter Two because it signaled that the routines embodied in the previous use of resources were going to change. The following results ascertain a sequence of these organizational actions through which the three schools for the deaf studied attained academic growth, and the remainder of this chapter will explicate the specific actions and changes that occurred, along with the logic of decision-making and faculty and staff responses.

Addressing the Problem of Unsatisfactory Academic Achievement

There have been continued efforts, particularly at a national level, among schools for the deaf and organizations advocating these schools, to solve the problems of including deaf students in the state testing programs. However, the three schools for the deaf studied did not see that as their primary goal. Rather, they focused on creating a set of internal strategies to demonstrate academic growth, and thus increased academic achievement as outlined by the external state education agencies. This reciprocal legitimation has

a pragmatic component in mutually influencing both the continued national efforts by the organized advocates for schools for the deaf and the local legitimacy of schools for the deaf. To that end, the overall view of the problem of unsatisfactory academic achievement in the three schools was that the problem, while not entirely new, was increasingly urgent. This sense of urgency prompted the three Superintendents and their staff to eventually acknowledge the problem as their own. Although the government continues to designate schools for the deaf as the last resort for children who are deaf, these schools are responsible for raising achievement:

> [STA17] We are always getting kids who have failed in other programs; so, after transferring here, they're already behind; so we have to go and play catch-up with those students. Many times we do this.

Respondents agreed that student achievement was a problem and that it required monitoring external measures of achievement rather than relying on internal assessments. One of them commented as follows:

> [STA15] So the school here emphasizes the importance of the state standardized tests, [and] especially school-wide, how we can track and improve growth, not only on one test but all the tests, including the statewide test, our in-school test and the MAP assessment.

Other respondents acknowledged the urgency by also recognizing the other external factors that contributed to the overall situation facing schools for the deaf. However, they also pointed to the political and practical reasons why they felt pressure to increase achievement using external measures. In particular, they regarded current and future funding for schools for the deaf to be dependent on showing that they could improve student outcomes:

> [STA15] It's critical more than ever, because we are facing very serious budget cuts and also some programs we might be competing against, with our philosophy and our beliefs.

This respondent also remarked:

> [STA15] We want to preserve our funding by looking at the data.

As with all other public schools, schools for the deaf included, the three schools are required to give the state test to their students because they too fall under the federal requirements of the NCLB.

However, all three schools indicated that the state tests are not particularly useful with their student populations because these tests occur only annually and do not measure progress at the student level. Administrators stressed that individualized and regular information about student progress is particularly important when working with a student population that has a wide diversity of needs and capacities. This is especially true when most students at schools for the deaf are delayed socially, academically or both when they enroll in these schools. All this prompted the three schools for the deaf to further emphasize meeting academic achievement benchmarks in addition to their long-standing emphasis on social-emotional development.

The increased attention to problems of achievement has also inclined these three schools to address the national problem of unsatisfactory academic achievement of the deaf by addressing this problem largely at the organizational level. Rather than blaming the accountability regime or the inappropriateness of tests, they looked inside for problems and solutions. As one principal said,

> [ADM14] We, like all states, have a state NCLB test, which really was highlighting what our students weren't able to do . . . Certainly our schools and [the] existence of our schools are contingent upon academic success. We can talk about social success and you and I know why schools for the deaf are important for social success, social development. But outside stakeholders . . . care little about that. They care about academic success. So we have to come up and always be creating ways to measure authentic academic success that will help us—well, quite candidly, keep getting funded, keep being able to exist.

The pragmatism so evident among the three schools for the deaf in adapting to the required state testing was framed in terms of organizational survival of their schools, not necessarily to improve the academic achievement of the deaf nationwide. Their adaptability was not immediately apparent though.

This bind of compulsory compliance and organizational survival caused what may be construed as an initial organizational paralysis within these schools because it was contrary to the institutional deemphasizing of tested achievement that had previously characterized schools for the deaf:

> [ADM07] When the state test came, it wasn't fair to our students; the students hated taking it. We never really emphasized this [as] an important issue with our children. You don't see results until they take—no, they take the exam and then six months later, they see the results . . . Students felt that [they] themselves are failing [when the state tests came], so parents were getting angry and staff members were getting upset.

But teachers also agreed that they paid limited attention to overall academic growth measures:

> [STA20] In the past, they were basically [giving] a test and that test would go into the file. You'd show it to the parent or actually the administrator would lightly cover it at the meeting and that was it. Really no analyzing the data, no looking at what it was or what it means. We were really stuck in a rut and assessment was of no value really.

A school administrator likewise agreed that teachers previously paid little attention to data—but also that they rarely shared their insights about what worked with students:

> [ADM01] Everyone was on an island. And teachers didn't have any way of knowing student progress. That's it. It was all internal—everyone stayed in their classroom, they would pass out tests. If you fail, you failed then. If you didn't, you didn't . . . Everything was just based on instincts and you got the reaction of the students, and for many years this has happened . . . We just taught everyday as usual . . . But we as administrators didn't have an idea what happened inside the classroom . . . It was just a score. It was just a number, and I filed it away.

Another teacher complained that even people who looked at data had no opportunities to discuss what to do with it, which caused frustration coupled with a tendency to "file it away":

> [STA13] We have data; we have it, but now what? What will we do with it, you know? Do we just take data here? I don't like all these results. They're great, but now what? . . . We need to have further work done to apply . . . What do we do? Where's the application?

Teachers also expressed previous frustration at not seeing results, and seeing no improvement because of lack of coordination and strategic thinking in spite of the efforts on the part of teachers to support their

students. The following teacher pointed to a sense that is common to many deaf schools that are in a cycle of constant change in practice and no change in results:

> [STA10] Students are really struggling, and they're feeling deflated because they're reading, they're reading a children's book or a kid's book (when they are older). There's time when we're trying too many things. We're trying to change so many things, everything across the board. We develop material. Throw it out. Start over again. Throw it out. Start over again. Throw it out. We were like, whoa . . . one department's doing one thing, one department's doing another thing, another department's doing another thing. And a lot of the kids are falling through.

Responding to the Problem with an Academic Growth Model

Interview data showed that the Superintendents of all three schools for the deaf undertook several organizational actions in response to both the external turbulence caused by compulsory testing and the cycle of constant change in practice without results. One of the first actions was to find an alternative approach to testing other than the annual norm-referenced state tests that demonstrated, year after year, that schools for the deaf were an underperforming group. Specifically, the selection and then the implementation of the MAP was a response to the turbulence. Because the MAP was an adaptive test rather than a norm-referenced test, it provided a different way of looking internally at student achievement, as well as a way of demonstrating to all relevant audiences that students were growing and learning when they were enrolled, often as a last resort, in schools for the deaf. This action was essentially a managerial response to an internal problem—lack of academic achievement—rather than an effort to redefine the problem, ignore it or fight against it.

The three Superintendents were explicit about the fact that weak academic achievement may be attributed to the unchanged routines of the principals and the teachers. By choosing an alternative test whose results could not be easily ignored, the Superintendents effectively, if not forcefully, encouraged their schools away from paralysis regarding organizational change through self-examination. Implementing a regular testing routine that brought new information about student learning into the school had the

practical effect of changing the routines of the principals, and thus those of the teachers, and brought some immediate relief, both internally and to key external constituencies:

> [ADM14] It was an administrative decision. We have the authority given to us by our board to make those decisions and just report on the data outcomes of whatever instrument we chose to use. When we were not using the MAP, our turbulence was far [more] severe. It was a severe storm and now the waters are much calmer. And we are able to show—because the students know they're being measured against themselves, so even the testing window—[that] the data seems to show meeting expectations, to show growth and students don't feel it's high stakes, and, of course, it isn't. Once we were able to provide another data point that showed growth, and it highlighted the growth as opposed to highlighting the shortcomings that may or may not exist because of a test that wasn't accessible has really improved the climate. So there is some turbulence, but it is greatly, greatly decreased in the last three years.

Another respondent remarked on the ready applicability of the alternative testing in response to the turbulence of compulsory testing:

> [STA17] The MAP is a better program, because it actually has something to look at, there's a number, the number correlates with a skill that's listed there and then you can see actual improvement, and then using that data, you can port that to the state exam, or transpose it onto the state exam, and in general, teachers here on campus feel better about the tests, on what tests really can show, where in the past, test scores really meant nothing.

The problem, however, remained in deciding what to do with growth data generated by the MAP that was key in navigating the uncharted waters of measurable academic growth at the three schools for the deaf:

> [STA16] Once the assessment department acquires the student data based on the MAP scores, then the curriculum department can match the goals to find appropriate materials for the English and math teachers. This should be an on-going process, so that once the teacher completes a unit . . .

> the curriculum department will be able to provide the next level of materials based on the MAP scores.

Using New Information to Alter Routines

This was the point at which all three schools for the deaf started to address the national problem of unsatisfactory achievement of deaf students —but at the organizational level. More specifically, the three schools altered their routines in such a way that their academic growth data parlayed into a commonly understood focal point for virtually all organizational activities. This included both the new information sources on student learning, particularly the MAP and the new structures such as Professional Learning Communities (PLC) for the purpose of discussing MAP data, for example. These new routines disrupted the old routines and caused some internal turbulence. One respondent began to describe the broad implications of the new emphasis on the MAP:

> [STA15] The data will help us determine where we want to address and identify and prioritize, and we also need to show the students the data; we need to do that in order to determine our programs, our curriculums, our planning instructions . . . Next is the school departments, elementary, middle school, high school, special needs, and they set their PLC. There's a variety of topics, including testing, [that are] part of the topics, planning and procedure, teaching strategies and discussing data.

This focus on new structures developed to take advantage of new sources of information led to identification of culture as an area of needed change at all three schools. Culture, the strategic element that complements the other two key organizational elements, environment and structure, was the final problem (or rather solution) facing the three schools for the deaf as they engaged in altering their routines. Data use began to permeate the conceptual thinking among the administrators and spread to the teachers at these schools. They used MAP data to monitor academic growth, to develop learning goals, to determine classroom placement, to guide discussions among teachers and in parent meetings, to motivate students, to share with school stakeholders, board members and state legislators and to compare with other schools for the deaf, to mention several uses.

Culture change at the schools for the deaf occurred within an assumption that the goals set for their students might be different than those set for other students. This is, of course, in contrast to the goal established in the NCLB, which emphasizes closing achievement gaps (equity of outcomes between groups) rather than within-group growth. The organizational language at all three schools for the deaf was adapted to fit the established culture of schools for the deaf: student growth, not student achievement, against a norm established for the general non-disabled population. It was this key belief—that students would be best served by looking at growth—that made the role of the MAP tests so important: it was the most easily available test that supported the adapted goals with academic growth data, even though classroom assessment, however lacking in the current policy environment, would yield equally legitimate data. Within the school for the deaf, the goal of growth in student learning was deeply embedded, but the ideal of measured academic growth on an externally developed instrument was revolutionary. The three schools for the deaf thus married the old with the new.

This data-driven cultural reformation served a pivotal role in channeling the strategic aspirations that all three Superintendents described as their reasons for introducing the MAP as a new information source to promote academic growth. This also extended to the adjustments of organizational routines that involved planning and implementing within the three schools. Culture at each school was essentially changed to make it more data-driven. This culture change was particularly evident among the teachers and other school-based staff. As one teacher noted:

> [STA15] The data action plan forced us to refocus on our needs. For so long we've been sleeping. And so now the data kind of woke us up, and a lot of us understand that the data is important. For so long we've been talking about what we need to do, and now we are putting that into daily practice, and also there's a time well used, as well, and it's not just people. We now have goals, and we have data, we have purpose. That has to have a process in order to help us monitor the data and the growth and the interpretation, so we need to have that PLC meeting. Without that we would be lost.

There were many types of responses to adjustments in organizational routines and the resulting availability of new information about student learning that provided useful insights into student progress and needs. It is important to note that most of these responses were positive because the schools also changed routines to foster use of such information:

> [ADM04] There was [a] new curriculum and it became more forward thinking. You know, I can't even explain the change with Mathematics because my MAP scores, from the fall until now, have went up 78%. That's unbelievable, a 78% improvement! That's a huge change, and so at the same time that happened, we all were wanting more, and so everyone wanted to work together. Everyone was more collaborative. You know, all these changes were taking place, something happened for people who weren't seeing changes, and so it wasn't just one person, it was everybody working collaboratively.

One teacher stressed active involvement of students as an influential factor in attaining academic growth. Many other respondents too stressed commitment and consistency in engaging students to ensure that they understood the value of their active involvement toward accomplishing academic growth. The following quote suggests that giving control to students was seen as a strategy for such engagement:

> [STA10] The kids are starting to be more involved—they have a feeling of control. They can help decide to make the difference and how the scores work because it's really very important. Sometimes kids think that, "Oh, you know what, I have no control." Well, I'm saying, "What do you do? Are you motivated? Are you working hard? Look at what's happening here."

But the students needed more than a sense of control: they needed to be rewarded, regularly, for progress, and this could be provided easily with the MAP scores:

> [STA03] Students' attitudes were, "I don't care about tests, it doesn't really matter." Then we trained them how to take a test, and showed them how to get motivated and feel good about their scores, and now their self-esteem is kind of going up, and their attitudes are changing, and they're more positive . . . I notice the change there, them wanting to do better.

Alternations in routines spilled outside of classrooms and teacher's work with students. Another respondent made a comment about parental involvement that was also frequently mentioned by many other respondents:

> [STA11] The parents are very involved and very concerned . . . I give workshops for parents on how they can help with students' growth and achievement, from the parent's perspective—you know, how they can read and interpret results without overdoing it. They are very good at that. And then teachers can get parent feedback and then make sure everything's in order. We can help parents with MAP data and then discuss that among the community on how we can do better, how we can get the message across the parents, how we can work collaboratively with parents, and how we can talk about it with principals and teachers. It's a shared learning community.

Striving for Academic Growth in Schools for the Deaf

The results from the three schools for the deaf at this point suggested that their Superintendents, at least, were unequivocally focused on goal setting as a mechanism for altering organizational routines. The results below showed how setting goals may be instrumental for organizational learning toward cultural change. For example, engaging students in this process and prioritizing staff development that promoted overall academic growth showed the importance of setting goals, as one of three Superintendents interviewed for this study suggested:

> [ADM14] Our number one goal setting is to make sure we're giving the students the most that they can succeed and be—reach their fullest potential, not their neighbor's fullest potential. Not what we think their potential should be, but we're going to push them to reach outside of their comfort zone.

The following comment by the same Superintendent was consistent with the revolutionary ideal of measured academic growth on an externally developed instrument at schools for the deaf mentioned above:

> [ADM14] Our goal is to make sure assessment stays there and that we are using assessment to develop future instruction and future goals, then hopefully we'll open doors to our students to really achieve their highest potential. We're really excited, and what is really flip-setting our goals

> is we're—if now that we're measuring what's student growth instead of student inability, I think the sky is the limit.

Interview data showed that setting ambitious goals—one aspect of striving—may be an effective mechanism for changing organizational attitude through cultural means, and that communicating frequently about them is critical. Cultural norms of communicating and observing expectations within a school organization proved effective among the three schools for the deaf. This change in organizational attitude about the need for frequent communication was particularly evident between the administrators and the teachers, with positive outcomes in the office, the meeting room and the classroom alike. Teachers and administrators began to see themselves as a more cohesive team. One administrator noted that:

> [ADM11] I had heard from Principals that the teachers now, they are more accepting and looking at that sort of progress, assessment and monitoring . . . It does affect their instruction as well. The teachers are more willing to apply some of the practices that we have been trying to teach them through MAP assessments. And as they learn that, they prepare their lesson plans accordingly, which reflects how they teach now.

A teacher at the same school commented that there was a sense of pressure coupled with excitement about the opportunities:

> [STA20] The administration is very involved. They keep our feet to the fire. They are allowing a lot of individual talents and individual interests, but they are definitely holding us accountable . . . It should be that way . . . They have given us freedom to run but they are holding us to the goals for school improvement and team settings. We know that we are accountable, and we know that we have to answer to them for what we are offering students and what we are expecting from our students and ourselves as well.

In other words, both administrators and teachers sensed the challenge, but saw it as coupled with support and the license to experiment with the new goals in mind.

As mentioned above, student engagement was one of the most influential factors in attaining academic growth at all three schools for the deaf. Data showed that each of these schools demonstrated

commitment and consistency in engaging students to ensure that they understood the value of their active involvement toward accomplishing academic growth. Having created the conditions needed for student engagement through changes in organizational attitude, all three schools were able to translate the use of data and new accountability for academic growth into programs that involved students, as one teacher noted:

> [STA18] Students become involved in setting their own goals. I know my students enjoy looking at their MAP scores and at the end of the school year, setting their goals where they like to be. Take winter scores and spring scores for example, where they want to be by the end of the school year. The students are motivated by their successes.

The same teacher was clear about how her own routines had changed in order to focus on guiding students toward clearer responsibility for their own growth:

> [STA18] I sit down with them—those who will be taking the MAP test. We'll . . . go through looking at their scores and talking about where they want to be, what kind of things they want to work on. A lot of that is just from, you know, knowing where each one of my students is at and what their particular needs are, and then as if we're into looking at where they need to be going next.

Consistent with routinized action theory, the three schools for the deaf did not rely exclusively on teacher creativity, but altered organizational routines through goal-setting activities that were congruent to the changing culture at these schools. This organizational learning involved engaging students in this process and prioritizing staff development, both of which promoted overall academic growth, primarily through staff meetings in the form of PLC or a similar format and regular meetings with students to go over their MAP scores, particularly as they approached testing windows.

This is especially important because the previous quotes emphasized the importance of individual actions and not routines, as well as how routines or organizational expectations were changed. For example, in the case of the teacher quoted above, her practice was routinized in other classrooms; it was not an isolated practice. To this end, again, goal setting appeared to be an effective mechanism for

communicating expectations toward change in organizational attitude, particularly engaging students to attain academic growth. Such student engagement is the key factor in creating an ideal school climate for a school organization that is more responsive toward academic growth.

Challenging Old Routines and Structures by Creating New Ones

The results for this section on striving toward new goals affirmed that all three schools for the deaf challenged old routines and structures by creating new ones. This pragmatism became evident during the interview process, that the goal to achieve academic growth fostered a more concentrated effort amongst teachers to guide their students, with special regard to the PLC, the IEP, school-wide communication and finally the periodic school accreditation process. The following quote illustrates how the nature of conversations (and challenges) had evolved in one school:

> [ADM03] The PLC need to work to address the student's needs, what works, what doesn't work, how can we improve. In the past, it wasn't run that way. It was more of a general discussion but as of late, we started to really gear our discussions and shift to student-centered discussions . . .

The shift away from the traditional reliance on IEPs, part of the special education requirements for students with disabilities, as a means of making decisions about students was mentioned by a number of respondents as a seismic shift in how some schools were talking about students in their PLC sessions:

> [ADM03] For example we are having a PLC this Friday, and we are talking about the groupings for the fall. Should we base that on literacy scores or should we use the MAP scores? Do we want to have a combination of thereof, and what would that look like?

But even when the teachers were relying on IEPs, the way in which they were using them was radically altered by the need to discuss student learning in the context of the MAP data, which was leading them to greater individualization of goals:

> [ADM02] In the past, teachers would write the same IEP goals for all of their students in one class. We cannot do that. The IEP is based on that individual. So they're getting better. They're getting a lot better. If you're noticing the change, that could be permanent because of attitude and ownership also.

Another change noted by teachers was that the chasm between the instructional program and the other programs with responsibilities for students was changing in order to carry out the increased responsibility for growth. A teacher mentioned that there was an imperative for coordinating all of the members of the school community to support growth:

> [STA15] In the past this school often communicated [academic growth] with instructional staff only. The residential program was not included. They didn't include the business service department. It was just the instruction, and that's who got together and discussed things . . . However, this morning, and I do this every month, I presented about the MAP scores to this [non-teaching] group . . . This time, I decided that they needed to know about the [exciting] reality of our school, our deaf children. I showed those supervisors the academic growth, how much and why, and what are the reasons why they are growing academically. All the supervisors were really inspired. I told them, "You are a part of this team. You are also responsible for deaf children's academic growth as well. I want you to feel good about yourselves. I want you to get to school and realize when you come to work, you are working for these kids." We are one big team. It's not like just the academic school's job to figure out MAP scores. We all take place. We all do that. And they were thrilled.

Shifting Internal Resources Toward Academic Growth

As noted earlier, altering routines to repair what did not work and then striving toward new targets by shifting resources to these ends was an element of creating the shift toward an academic growth emphasis. The importance of resource allocation, thus resource optimization, as a mechanism to reinforce new routines was evident in later actions within all three schools as well. The following responses corroborated this theory that resource reallocation is part of the routine alteration process. In one instance, the school shifted resources to allow staff and students to present their results to other audiences, including parents and other stakeholders, which reinforced the importance of the changes being made:

> [ADM14] We're starting to share—the kids could use another group of stakeholders to show our academic growth using our MAP testing. We have also done presentations nationally about our

> student growth with MAP . . . And so I think we're getting more sophisticated how we're using our outcomes.

Moreover, the results showed that such shifting of resources involves various aspects of school organizations that may not necessarily be always related to academics per se. In a broad sense, resources in the instance of organizational learning, or sensemaking, among the three schools for the deaf entailed the use of staff time, travel budget and computer software and hardware toward identifying, organizing and communicating academic growth data.

Another specific example of resource allocation was a greater emphasis on the information technology (IT) department at the three schools. Interview data consistently showed that each of the schools had the same emphasis on its IT department at all organizational levels, from the classroom to the superintendent's office. This was in part due to the demands for better data from the computer-based MAP testing. Academic growth requires sound technological aptitude on the school's part for storing, retrieving and showing data. However, the technology emphasis was particularly important for making decisions with regard to some of the key factors for academic growth, including resource allocation to classroom teaching, staff development and student engagement. The emphasis on IT was also used to market the strong push toward academic growth to other stakeholders, which allowed even more resource reallocation toward IT:

> [ADM14] We have a stronger IT department who is fairly knowledgeable. This has allowed us to get some extra money from the Legislator, saying, "We need this technology so we can facilitate our MAP testing, so we can get you better data on student growth." So we've allowed that horse to pull the cart a little bit. With that, we have reading labs that tie into the Accelerated Reading program. Those labs are not tied to the classroom at all; the labs are open before and after school. Title 1 students read, they take tests and pass them, [they] get points, and those points get accumulated. The teachers who set goals for each student group that meets those goals will have a reward activity. It's incredible. Students improve by two grade levels. That's a two-grade growth every year.

Such relationship between the shifting of IT resources and changed organizational attitude toward testing was central to fostering a school climate for attaining academic growth.

The focus on academic growth among these schools has translated into sharing as well as shifting resources. Computer lab times among teachers, for example, became more flexible as the emphasis on accomplishing academic growth increased. This optimization of time as a resource was another key factor in attaining academic growth through cultural change, albeit slowly:

> [ADM06] The MAP testing takes priority over others on computer lab use and nowadays we never have any run in, any conflicts. There's no complaint. Teachers are fully aware of it. They say, "It's MAP." Then the others would say, "No problem, we won't use the lab today." Four years ago when we were still in that growth mode and working that through, there was consternation, but you know they don't change overnight and so there's a bit little learning time and there's a growth time but it runs all well now.

Another school-based administrator commented that resources were optimized because curricular decisions were more focused and the targeting of professional development to those curricular decisions was clearer:

> [STA19] When we look at the new curricula, we can look at staff training where we are better to pinpoint our students' needs and also based on that, I do think we can get a better target at the growth that we are expecting and for individual students as well as classrooms grade level in the entire school, I think we are better able to maximize our growth potential and our growth aim based on what we get for the MAP test.

The three schools for the deaf monitored the outcomes of their shifts in resources, although not formally, with the goal of determining whether their response to the problem of unsatisfactory academic achievement of the deaf was successful in achieving academic growth. At this point, the results show that academic growth may be a clear indication of the resources shifted to reinforce routines that have been altered to realize academic growth. Responses to this aspect of routinized action theory indicate that the shifting of resources toward academic growth can encompass every aspect of school organization:

> [STA06] You know it's just great to have data at my fingertips and having it more accessible, making it that much more easier for me to then implement programs, units, design tests and things like that in order to achieve academic growth. Academic growth data really lets me know if I'm doing my job. You know, if I have a student that isn't showing any growth, either the resources that I have or the methods that I use just are not working for that individual student, and we need to completely revamp our program. Or it tells me inversely that what we are doing is working and we should continue that and build upon that.

Affirming American Sign Language as a Critical Shared Resource

Of particular significance was the explicit assertion on the long overdue incorporation of ASL as a crucial element to realizing the organizational change and hence the academic growth. It stands to reason that the embracing of ASL significantly contributed to the unprecedented level of student engagement and the academic growth that resulted from this engagement:

> [STA09] ASL helps achieve academic growth. Since ASL is not a separate matter, I teach in collaboration with the ASL specialist here and connect ASL to the reading curriculum. Yes, I think ASL is very, very important. That's wonderful. The kids need that. There are benefits in using ASL in the classroom; you can see that that's their language. That's the language that they can use to improve in other areas as well.

Another teacher reinforced the above assertion with a comment that exemplified many other comments made by teachers and administrators alike at all three schools for the deaf:

> [STA02] Today's academic growth is better because there are more teachers who are deaf. There is now more signing, more clear communication taking place. During my time at the same school, there were not many teachers that could sign well. I could not understand them at all. ASL is important. And here at this school, we started ASL classes. And those classes start in the elementary school, so there is academic growth in there. Another thing that I am seeing is that there are more deaf teachers. And the Superintendent is also deaf. He signs, the principals sign, and the behavior specialists sign, too. Comparing with my time, the school has really changed for

the better. Everybody is included, even those who are hearing. It doesn't matter if you're hearing or you're deaf, as long as you can sign. It's good for the students to look up to us because many of them feel like we can be their language models.

Summary

Compulsory state testing has undoubtedly magnified the national problem of unsatisfactory academic achievement of the deaf, thus forcing the three schools for the deaf under study to acknowledge this problem as their own in order to survive. Such testing initially created undesirable external turbulence for the pedagogy of schools for the deaf and disrupted internal relationships among staff, students and families. This collision of a policy of inappropriate testing and a pedagogy for individualized education serves as a more concrete example of the unintended consequences of the NCLB that may be alleviated through actions at the organizational level.

Interview data showed that the Superintendents of all three schools for the deaf implemented the MAP as a managerial response to unchanged organizational routines, for such an organizational paralysis may be the culprit of the lacking academic achievement of the deaf among schools and programs nationwide. Altering these routines therefore served as the original impetus of attaining academic growth at the three schools for the deaf. By using growth data as a motivator, all three schools have effectively addressed the environmental, the structural and the strategic factors, with the cultural factor serving as the binding force of this focus to attain academic growth. With all these factors addressed in their entirety, the three schools for the deaf were able to then strive for new goals toward academic growth.

To encapsulate the results of this two-pronged interview process, the preceding corroboration substantiated the following organizational actions that schools for the deaf and any other schools operating in a turbulent policy environment may take to organize toward a more satisfactory academic achievement of students who are deaf: (1) owning the national problem of unsatisfactory academic achievement of the deaf, (2) responding to the problem with an academic growth model, (3) striving for academic growth in schools for the deaf and (4) shifting internal resources to support academic growth.

CHAPTER FIVE – Discussion

Introduction

This dissertation investigated the effects of educational accountability policy in schools for the deaf through the lens of organizational theory. These schools were found to be a case in point for responding to the movement toward academic accountability because they provide a clear common goal: educating the deaf in the most efficient and effective manner. As such, they were found to be the location of intensive expertise for a low-incidence youth population.

Today, an increasingly turbulent policy environment encompasses public schools in the United States. This environment makes the continued realignment of both limited resources and adaptive organizational actions toward academic growth crucial for the continued viability of schools for the deaf. In particular, these schools are under the same pressure as any other public schools to demonstrate the organizational capacity to meet academic achievement benchmarks. To that end, the central question and sub-questions that guided this dissertation were as follows:

- How do schools for the deaf organize to attain academic growth?
- How did these schools respond to the federal mandates for academic growth?
- How did adjustments in organizational routines complement the academic growth of these schools?
- How do the temporal characteristics of these schools influence academic growth?

Framed by these questions, this chapter briefly discusses the linkage among the theoretical propositions of this dissertation: organizational learning, adaption, routines and temporality, with the guiding theory, routinized action theory. A discussion of organizing to attain academic growth, as required by current federal mandates follows.

Linking Theoretical Propositions with the Guiding Theory

The extant literature on schools as organizations affirms that the theoretical literature that provided the basis for this dissertation is invaluable for understanding the organizational qualities of schools for the deaf. The guiding framework of this dissertation, routinized action theory, suggested that all three schools

for the deaf in this dissertation would have responded to what did not work by strategically adjusting routines to enhance teaching and learning efficacy. The previous chapter suggested that all three demonstrated a variety of adjustments in routines that enabled these schools to strive for new goals and maintain stability toward academic growth over time.

A temporal perspective, in which the consequences of small adjustments at one point in time accumulate to create significant organizational change, offers an insight into how these schools were able to adapt to the significant alterations in environmental expectations that occurred as a consequence of NCLB. Congruent with emergent patterns of data, goals, and growth that align with those of routinized action theory—responding, striving and shifting, respectively—this linkage may provide a template for schools for the deaf and any other schools operating in a turbulent policy environment to organize toward a more satisfactory academic achievement of students who are deaf.

Organizing to Attain Academic Growth

In keeping with the guiding framework, this dissertation identified the initial step of owning problems in repairing what did not work within school organizations with unsatisfactory academic achievement for students who are deaf. As a preface in the context of the central research question, the results suggest that the three schools achieved academic growth by altering routines that appeared to stand in the way of a collective focus on achievement. Conley & Enomoto (2005) posited that such micro-adjustments are one way that schools can maintain stability and still can be changed, and regular attunements of routines rather than implementing planned changes through major alterations are consistent with the results of this dissertation. Attunement implies micro-adjustments that may be, at any given point in time, almost imperceptible to an outsider, in contrast with alteration, which implies a clearly visible change. In particular, this dissertation found that the leadership at the three schools for the deaf attuned their internal routines in the direction of external expectations for academic achievement.

Responding to the Federal Mandate for Academic Growth

The results of this dissertation reinforced and expanded routinized action theory with the particular inference that the unsatisfactory academic achievement of students who are deaf is not entirely the result of

policy failure per se, but rather the inability of school organizations to adapt in a rapidly changing policy environment. To illustrate, in response to the federal mandate for academic achievement, all three schools for the deaf studied used academic growth data as a resource in attuning, or making micro-adjustments to organizational routines in response to what did not work. By using episodic academic growth data as a lever for change, the school leaders altered routines by ensuring that the data would be discussed among administrators, teachers and other stakeholders—and that it would be restudied if necessary. For the three schools for the deaf, academic growth served as an indicator of the changes underway. The analysis of data from both interview phases of this dissertation, however, revealed that teachers might resist such changes due to differing perceptions of what is not working and what the solution should be. To that end, this dissertation points to the importance of connections among school stakeholders that can foster shared understandings of how to reach agreement on what does not work, set priorities about which aspects of school routines need most attention, and engage teachers with changes. This reinforces the many ways through which leaders at the three schools for the deaf used academic growth data to stimulate connections and discussions.

Characterizing Academic Growth Through Leadership

In relationship with how leadership characterizes the academic growth of the three schools studied, the leadership of these schools strove for academic growth by emphasizing such growth as the expected outcome. They saw their task as implementing current targets and then striving for new targets in response to the accountability movement. The results show that all three schools demonstrated implementation of new goals, with the particular aim of striving for academic growth. Of particular interest was that such leadership relied on growth data, which led to a search for new information or ideas, and the utilization of internal dynamic capacities to develop further attunements. This, in turn, amounted to organizational learning. It was also of interest that the resultant attunements in routines catered toward improved teaching efficacy; this thus correlates routine attunements and academic growth. These results would characterize leadership as being data-driven and connecting not only numbers but also people, which is a key element of organizational learning.

Routinized action theory specifies that routines should not be only repetitive but also responsive (Conley & Enomoto, 2005, p. 16), which places a greater emphasis on communication and connections that promote shared understandings among people. Organizational learning in all three schools for the deaf in this dissertation was characterized by such efforts to examine data, look for internal and external resources to support attunement and examine the consequences of changes for classroom practice as well as changes in growth scores. This captures the connection between the assertion of organizational learning in this dissertation and the evidence of such learning in the previous chapter characterized by adjustments in behavior and discussions about the adjustments, usually in the form of PLC at these schools. This form of communication and connections served a crucial role at all three schools in providing a forum where teachers discussed strategies to improve instruction and learning, leading their schools to strive for new goals. All these schools implemented either formal or informal PLC activities that were congruent with the nationwide movement toward incorporating PLC within public schools. To that end, academic growth served as the catalyst for the implementation of new and more expansive goals that were stimulated through data-driven leadership—but maintained through PLCs—and which provided the platform for shared understandings essential to propel these schools further.

Although the research questions guided the collection of data, the choice of a case study approach that sampled schools that had already demonstrated significant growth was premised on the goal of identifying the changes in organizational behavior that lead to positive adaptations to the new accountability regime. It was with this intention that the findings of this dissertation were to determine whether schools for the deaf attain academic growth through deliberate adaptations in organizational routines. It was assumed at the outset that this focus on changing and adapting routines could be instrumental in addressing how schools for the deaf, and ultimately all public schools, may survive the accountability regime through the convergence of educational policy and organizational theory.

Influencing Academic Growth Through Temporality

The results of this dissertation showed that the temporal aspects of the three schools influenced the shifting of resources to undertake organizational adaptations toward academic growth, and that, implicitly,

any other school organization would be similarly influenced by temporality. In conformity with routinized action theory, shifting resources is primarily the responsibility of the leadership, but shifting resources is done in ways that allow and even encourage individual action. The leaders of the three schools ensured individual actions for the deaf by making data on academic growth available to individuals and groups within these schools. The data stimulated "role perceptions in ways that alter what is appropriate for an organization to do" (Feldman, 1988, p. 17 as cited in Enomoto & Conley, 2005); data were used to stimulate change in routines that were not led from the top, but were the result of experimentation at the individual or small group level. This, of course, paralleled the fundamental ideas behind continuous improvement strategies in schools (Detert et al., 2000).

The results of the dissertation of the three schools for the deaf yielded evidence that individuals acted according to the goals of achieving academic growth through actions that reflected their shared understanding of those goals. This understanding was attainable due to the shifting of resources; in particular, gaining access to academic growth data, distributing that access broadly, and allowing the time and space to discuss those data. To illustrate, the shared understanding through data-driven discussions enabled some teachers at all three schools to further legitimate the use of American Sign Language (ASL), a natural language of the deaf for visual communication in the classroom. The legitimization of using ASL in the classroom served as an example of internal adaptation that the three schools undertook, along with attunements in routines that allowed these schools to also adapt to the increasing pressures from the accountability environment.

The shifting of resources was deliberate and responsive to the schools' environment. Schools for the deaf have had their fair share of external pressure over the past hundred years to which they have adopted defensive or adaptive behaviors in shifting resources. For example, by using ASL in the classroom, these schools have developed a successful response in the form of academic growth. The reciprocal legitimacy of schools for the deaf and their external environments, notably the institution of American education system, depends on the timing of strategic choices made in response to their external environments, specifically how they shift resources to adapt toward academic growth.

Temporality was imposed as an external constraint, but it also governed internal actions. The leadership at all three schools for the deaf aligned with the cyclic school accreditation process that guided these schools in establishing and fostering the sole goal of achieving academic growth for the explicit purpose of receiving full accreditation. The crucial role of internally imposed temporality was evidenced by the increasing attention to the testing calendar as well as the critical importance of the accreditation cycle in achieving academic growth. Attention to the testing calendar created opportunities to ensure constant communication among school personnel about testing and, hence, raised the consciousness of all stakeholders about the importance of growth to meet accountability demands. Ensuring constant communication compelled leaders to apply a cultural lens to routine attunement by internalizing both temporal leadership and attending to the performance of routines around testing, accreditation and the internal examination of data to achieve the goal of student growth.

Limitations

The findings in this dissertation are subject to several limitations. First, this dissertation included only three schools for the deaf. The selection of these schools originated primarily from the results of a single computer-based adaptive academic progress assessment. As with all other academic progress assessments, there are a number of pragmatic factors that affect results and thus the academic growth of schools for the deaf, or any other public schools for that matter. Moreover, the MAP is designed for rapid assessment of student learning progress, and, like most other assessments of such nature, it is more likely than not to include inherent psychometric challenges that may affect the capability of students and their schools to demonstrate their truer academic aptitude.

Since the organizational qualities of top-growth schools for the deaf are not necessarily transferable to the other schools for the deaf, generalizations of the findings in this dissertation are theoretical for the most part. The referral sampling method to identify school members of the three schools for the deaf for interviewing relied upon the superintendents of these schools to identify at their discretion those who they deemed qualified to provide explanations and perspectives that presumably align with those of the superintendents.

This dissertation was not able to overcome all of the inevitable limitations of research that pioneers new approaches to examining the unsatisfactory academic achievement of students who are deaf, and which paves a way for a new audience(s), and expands the field of deaf education.

Implications

In connecting to the results of this dissertation, the theory of routinized action may be extrapolated as a theory of managed routine attunement. Based on the emergent patterns of data, goals and growth, it was evident in the interviews that most, if not all, attunements in routines were managed with the explicit purpose of inclining those attunements toward learning and adaptation at the organizational level, as in the case of achieving academic growth. Academic growth is usually attainable through temporally-based leadership, for this is conceivably the only means to attune routines based on data and the resources on hand, which are typically under the auspices of school leadership and manifest in response to external environmental factors such as the accountability regime. By way of addressing, responding, striving and shifting, the thrust of this extrapolation was to determine the significance of temporal leadership in reaching increased capacities for change in school organizations. The theory of managed routine attunement maintains the theoretical gist of Conley & Enomoto (2005) that the process of routine attunement performs the twofold goals of achieving stability and change within a school organization. As was made evident in the study, such ambidexterity has the paradoxical effect of creating a stable change through the consistency of using data, establishing goals and maintaining growth. This may be the most desirable type of organizational change a school can undergo for increased accountability, given the stable and cyclic characteristics of managed routine attunements.

Following the theory of managed routine attunement and the subsequent emergent pattern of goals, data and growth, a cyclic pattern of these organizational elements at the three schools for the deaf in this dissertation has manifested with regard to leadership, resources, implementation, and legitimacy, in that order. Alluding to the theory of routinized action, the adjoining theory of managed routine attunement, and the ubiquity of action in organizational life across all forms of organizations, this dissertation offers a foundational model of the Organizational Action Cycle (OAC). As in Appendix D, this model serves as a

platform to apply and extrapolate the routinized action theory among other theoretical propositions and the results in this dissertation. The OAC is specific to the directional, cyclic interrelationships among resources, implementation and legitimacy, with leadership as the reciprocal nexus amid these components. The OAC may also serve as an analytical module for assessing and diagnosing organizational phenomena; developing and planning organizational learning and adaptation; and, most of all, evaluating and attuning routines. Finally, the OAC may be used to guide processes toward stable changes within organizations that undergo managed routine attunements.

Basing the Organizational Action Cycle (OAC) upon the premises of this dissertation contributes to an initial application of the model for a stable change in achieving academic growth. As in Appendix E, starting with leadership as the nexus of the Cycle, the model shows the organizational action of attunement to be the crux that influences all aspects of the OAC. Data as a resource serves as the impetus of this resource-driven process that then leads to the development of organizational goals, inevitably requiring implementation. A successful implementation of data use, which results from routine attunement, affords an increased legitimacy to the school organization in the form of academic growth. This legitimacy, a status attained through academic growth data, in turn strengthens data as a resource for this cyclic process toward an upward spiral of academic growth. In this application, the OAC serves as the stabilizing, gyroscopic unit within each organizational action that brings about a stable change for increased accountability at schools for the deaf, and ultimately all public schools operating in a rapidly changing policy environment.

The observed phenomenon of data-driven engagement among teachers is a more significant implication of this dissertation. The findings show that teachers became more engaged in the academic progress of their students through increased engagement in the discussions of growth data, particularly in PLC and the following individual sessions with students. In doing so, the teachers were able to attune their routines, lessons, and teaching strategies at the teacher-teacher and teacher-student level. That effectively placed a greater emphasis on student academic progress rather than academic achievement benchmarks. This clearly shows the importance for growth data to consistently drive both organizational and academic imperatives for academic growth in schools. Of particular additional significance with regard to schools for

the deaf was the explicit assertion in the findings on the incorporation of ASL as a crucial element in data-driven engagement toward realizing the desired organizational change and hence academic growth.

The attunement of data-driven engagement in itself significantly contributed to the unprecedented level of engagement among teachers and their students and the resulting academic growth, as evident in the three schools for the deaf in this dissertation. This therefore presents data-driven engagement (DDE) as an essential strategy to attain organizational capability for academic progress toward academic achievement benchmarks at schools for the deaf and all other schools. In that regard, DDE serves as a salient complement to the widely accepted data-driven decision making (DDDM), which is often managerially focused, with the arenas for decisions defined by superintendents and principals rather than by teachers and students. As in Appendix F, this complementarity of both DDE and DDDM lends to a more comprehensive data-driven action towards school reform, with emphasis on academic growth, which is a critical factor in meeting benchmarks for academic achievement.

Conclusion

This dissertation marks advancement in the application of organizational theory in the chronically contentious field of deaf education, which has been fundamentally about pedagogy, policy or both, without regard for the organizational aspects of schools that serve students who are deaf. To illustrate, both the theory of managed routine attunement and the foundational and applied models of Organizational Action Cycle provide the dynamic process and the cyclic structure, respectively, for the seemingly linear process of addressing problems, responding to what did not work, striving for new goals and shifting resources to achieve academic growth. The literature, the results and the discussions of this dissertation have brought about new vocabulary, new language and new paradigms for the field of deaf education, which, through the example of successes of the three schools for the deaf in this dissertation, shows potential for effecting changes for academic achievement without the direct need for external policy activities. This dissertation may provide a template for schools for the deaf and any other schools operating in a turbulent policy environment to organize toward a more satisfactory academic achievement of students who are deaf. This affirms that schools for the deaf are no different than other school organizations, and, as such, would

benefit from organizational theory. Further, this affirmation reinforces the expectation that schools for the deaf are perceived and operate like any other schools in the general population of school organizations. To that end, this dissertation therefore maintains that the problems of unsatisfactory academic achievement of students who are deaf are not only political and pedagogical but also organizational.

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Appendix A

Temporally Based Interview Sequence

Derived from the Matrix of Question Options (Patton, 2002)

Question Focus	*Present*	*Past*	*Future*
Learning	Question 1	Question 2	Question 3
Adaptation	Question 4	Question 5	Question 6
Routines	Question 7	Question 8	Question 9

Appendix B

First Phase Interview Questions

Question 1
What expectations is your school setting for student outcomes in this school, other than growth on MAP?

Question 2
Based on your experience, has your school been meeting its expectations for academic growth? Why or why not?

Question 3
Describe your vision and goals of what your school will do to support the academic achievement of its students.

Question 4
What are the features or practices of your school that enable you to accomplish its academic growth goals?

Question 5
In what ways has your school changed since the attainment of academic growth? Your administrators? Colleagues?

Question 6
How do you think your school will continue to accomplish its academic growth?

Question 7
How does your school interpret, present and use the results of MAP growth data? Other outcomes data?

Question 8
Describe how you and your school used MAP or other outcomes data in the past as compared to today.

Question 9
In what ways would the use of MAP growth data further develop your school? Your administrators? Colleagues?

Question 10
What should I have asked about your school or MAP that I did not think to ask?

Appendix C

Second Phase Interview Questions

Question 1
What expectations are you setting to maintain academic growth in your school?

Question 2
Based on your experience, has your school been able to maintain academic growth? Why or why not?

Question 3
Describe your vision and goals of what you will do to maintain the academic growth of your school.

Question 4
From your perspective, what are the features or practices your school have adapted to maintain academic growth?

Question 5
In what way have you adapted to maintain academic growth in your school?

Question 6
How do you think your school will maintain academic growth?

Question 7
How do you interpret, present or use academic growth data?

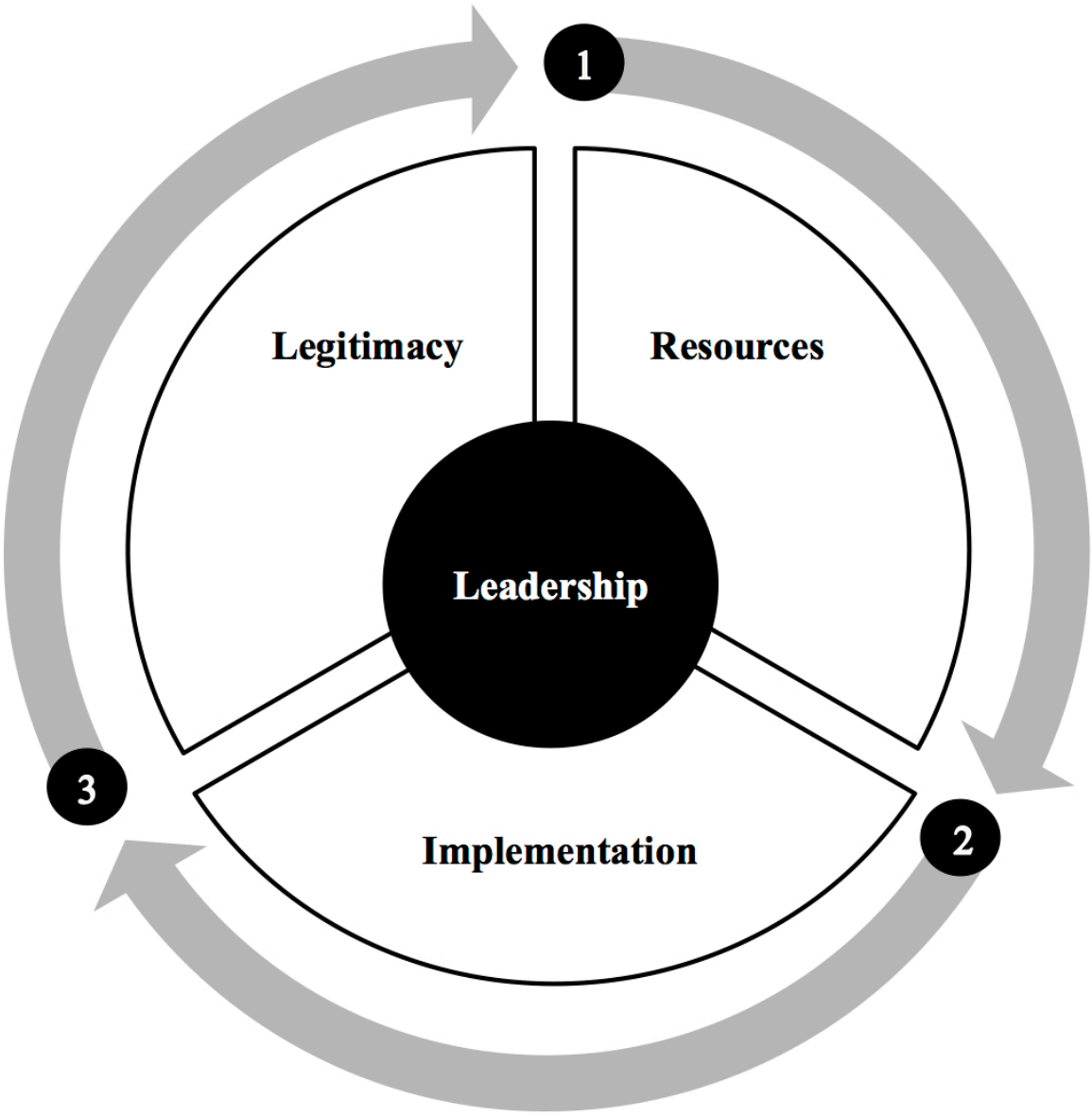
Question 8
Describe how your school has used academic growth data in the past as compared to today.

Question 9
In what ways would the use of academic growth data further develop you a professional?

Question 10
What should I have asked about you or your school with regard to academic growth that I did not think to ask?

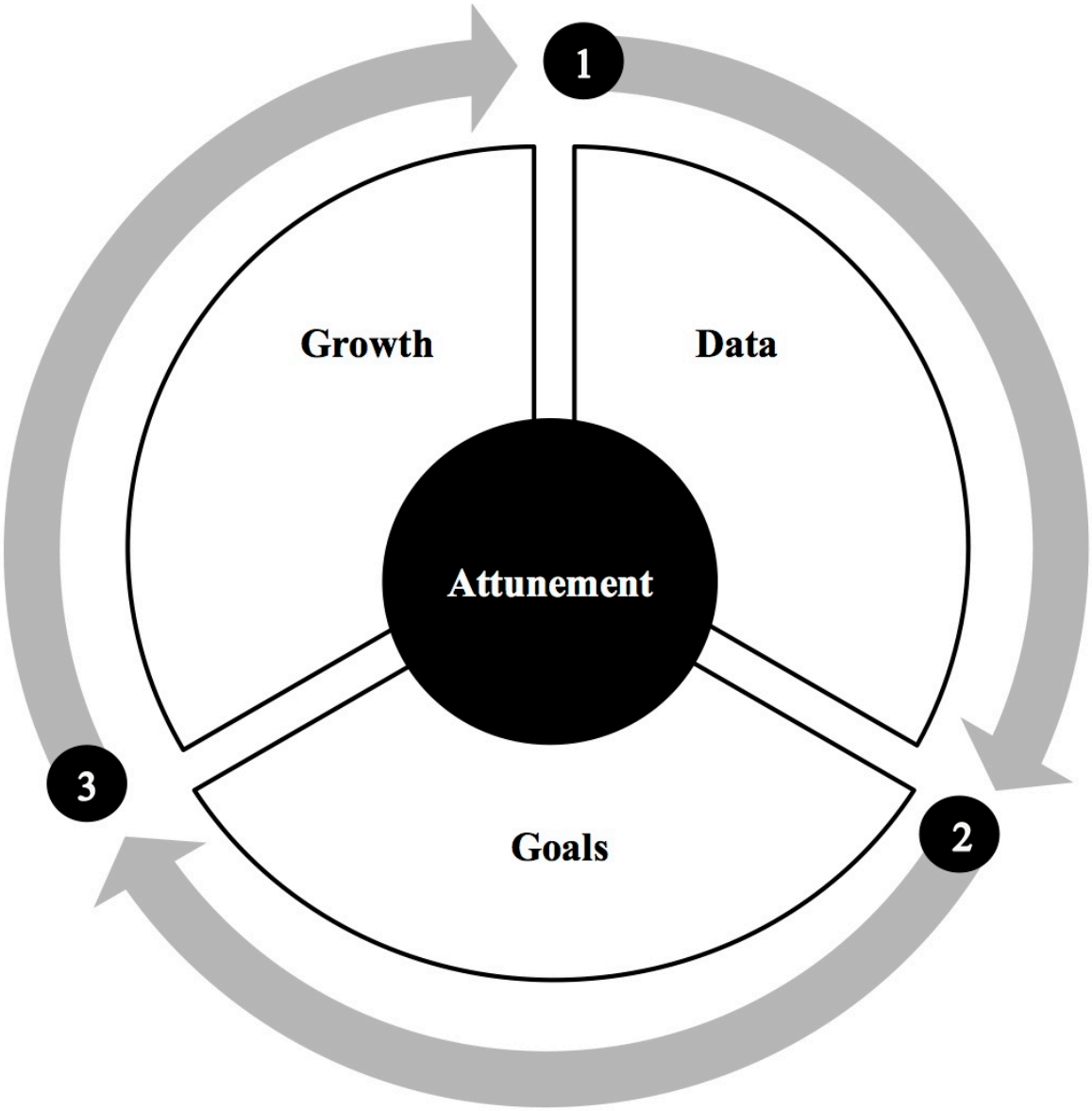
Appendix D

Organizational Action Cycle (OAC) Foundational Model



Appendix E

An Application of the OAC Foundational Model



Appendix F

Data-Driven Action Cycle Model